



**XVI European  
Congress for  
Integrative Medicine**  
MADRID  
2024  
**VI Congreso Nacional de Medicina Integrativa**

**ABSTRACT BOOK**

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# WELCOME

Dear Colleagues of Integrative Medicine,

From the Sociedad Española de Salud y Medicina Integrativa, I must say that it is an honor for us to host this event again in Spain, which, with no doubt, will fill us with knowledge, contacts, joy and advances in Integrative Medicine.

The organizing and scientific committees, and the three presidents (European Society of Integrative Medicine, Israeli Society for Complementary Medicine and Spanish Society of Health and Integrative Medicine), have been working hard to build this program that embraces the global sphere of Integrative Medicine, from medical specialties to issues more related to the environment and people's well-being.

We are sure that, thanks to the efforts of everyone involved, including the attendees coming from all over the world, speakers, committees, and sponsors, we will achieve our objectives.

Welcome to Madrid: enjoy working together on Integrative Medicine, enjoy Madrid, enjoy Spain, enjoy Europe.

Let's go to work in Integrative Medicine!!

**Isabel Giralt**

*President of the Sociedad Española de Salud y Medicina Integrativa*

## COLLABORATING SOCIETIES



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**INVITED  
SPEAKERS**

### WORKSHOP 1

#### **Integrative Oncology: The Role of Oncology Massage and Reflexology in Paediatric and Adult Patient Care – Our experience at Paediatric Cancer Centre Barcelona** (*Sant Joan de Deu Barcelona Children's Hospital*).

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Oncology massage and reflexology are increasingly recognised as valuable complementary therapies in the comprehensive care of cancer patients. These integrative modalities aim to improve quality of life, alleviate symptoms, and support the overall well-being of individuals undergoing cancer treatment. This abstract reviews the current evidence on the efficacy and safety of oncology massage and reflexology within the oncology setting.

Oncology massage is a specialised form of massage therapy tailored to meet the unique needs of cancer patients. Techniques are adapted to accommodate the varying stages of cancer, types of treatment, and individual patient conditions. Studies have demonstrated that oncology massage can reduce pain, anxiety, nausea, fatigue, and depression. Furthermore, it may enhance sleep quality and promote relaxation, thereby improving the overall quality of life. The gentle, patient-centred approach of oncology massage fosters a sense of comfort and emotional support, contributing to holistic patient care.

Reflexology, an ancient practice involving the application of pressure to specific points on the feet is based on the theory that these points correspond to different organs and systems in the body. Reflexology aims to restore balance and promote healing by stimulating the body's natural reflexes. Evidence suggests that reflexology can reduce pain and anxiety in cancer patients, improve sleep patterns, and enhance physical and emotional well-being.

This abstract synthesises findings from different studies to provide a comprehensive overview of the benefits and limitations of oncology massage and reflexology. The integration of these therapies into standard oncology practice requires collaboration between healthcare professionals, oncology massage therapists and reflexologists. Future research should focus on large-scale, multi-centre trials to further study the effects of these therapies.

In conclusion, oncology massage and reflexology offer promising adjunctive approaches to cancer care both paediatric and adult. It can be performed both out and in hospital. By addressing the physical, emotional, and psychological needs of patients these therapies can contribute to enhancing the patient's quality of life.

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### Workshop 2

#### “Instant Analgesia with Acupuncture” - Prof. Liu Zheng’s Protocol

##### **Zheng Liu Du**

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One of the best-known effects of acupuncture in the West is its effectiveness in treating pain, regardless of the mechanism that causes it. From the perspective of current neurophysiology, this can only be explained by the close interaction between the peripheral and central nervous system, where the stimulation of an acupuncture needle triggers a cascade of neuroimmunoendocrine responses.

As quickly as synaptic transmission travels through nerve tracts, so immediately is the analgesic effect we can achieve with acupuncture.

The protocol that I have developed for “Instant Analgesia with Acupuncture” and that I will present in this practical workshop, is an unequivocal example of how, with very few needles, it is possible to neuromodulate pain instantly, obtaining clear and substantial improvements on the scale of pain, objective and quantifiable by the patient himself.

The effectiveness of this technique is so evident that it can be explained by Newton’s 3rd law: every action generates a reaction.

The protocol of “Instant Analgesia with Acupuncture” is also easy to learn and to replicate, as long as you understand the great correlations that exist between the meridian system of Traditional Chinese Medicine and the nervous system as we know it today.

And as an example, during the workshop there is the opportunity to treat some real cases of patients in which pain predominates.

Just as the slogan of my courses says: “it seems like magic, but no, acupuncture is science.”

### WORKSHOP 3:

#### Homeopathy for supporting cancer care, clinical experience and controversies.

**Jordi Vila**<sup>(1)\*</sup>, **Natalia Eres**<sup>(1)\*</sup>.

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Homeopathy in the treatment of cancer is an area of widespread international controversy. It has been used in different parts of the world as an adjunct in the cancer care, with diverse methodology and clinical experiences. While most of them suggest benefits in symptom management and patient quality of life, the controversial scientific evidence and the difficulty in validating the mechanism of action limits its general acceptance, and prevents to clearly establish its role in oncology.

We explain our clinical experience of more than 20 years, based on the strategic application of different methodologies individualised to each case for the symptomatic treatment of the general condition, and according to different clinical categories: high-risk individuals, localised disease, disseminated disease and type of tumour.

The different approaches to cover the toxicity of oncological treatments are also reviewed on a case-by-case basis. The methodology will be presented, but also clinical cases to show our approach in a more tangible way. The controversies of the use of homeopathy in the conventional clinical context will be also discussed.

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### WORKSHOP 4:

#### Evidence based approach for heavy metals detoxification

**Sergio Mejía Viana** MD, PhD, FESC <sup>(1)\*</sup>,

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The word “Chelation” was first proposed in 1920 when Morgan and Drew compared the way a heterocyclic ring structure grabbed the metal with the pincer-like action of a crab. The most widely accepted chelator, EDTA, obtained an European patent in 1935 and was approved in the United States of America in 1945. Since then, countless articles and textbooks have described the uncontested evidence of the clinical and pathological benefits of removing heavy metals from the human body. As heavy metals are all known carcinogenic agents this should be included in the preventative strategies of cancer besides the current efforts that use image techniques dedicated to early detection. As many heavy metals are involved in the atherogenic process of atherosclerosis, which is the first cause of morbidity and mortality nowadays, this should be also taken into account in all the prevention guidelines promoted by different medical scientific societies. Least but not last, heavy metals that are numbered as pro-oxidant agents, should be included routinely in the scientific areas that investigate longevity, telomeres’ length and mitochondrial based diseases.

In this workshop we will discuss the current scientific evidence of a different number of chelating agents, whether synthetic or natural, and the coadjutant factors required to complete a proper detox protocol. In the “integrative way”, different from the “Allopathic way”, we do not use fixed protocols of chemical substances, doses, indications and contraindications. We go deeper and connect all the possible dots that form the “figure” of a healthy person.

A complete treatment for a patient with toxic metals should always include a look at the intestine (microbiome, intestinal wall, biofilms), at the detoxification pathways (Metallothioneins, liver detox phases, Kidney function, Lymph channels, skin as a detox organ) and of course, chemical or natural agent, dose, etc.

Although it is known as “The bastard son of the Cardiologists” because of the recent history of EDTA chelation therapy, a very elegant clinical trial, TACT2 conducted by Lamas G et al, brought back the clear evidence on which we can rely to continue promoting EDTA chelation and other agents-based heavy-metal detox therapies.

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### Hospitals as an Archimedean point for integration: Experiences, challenges and future perspectives

**Prof. Elad Schiff** MD

*Director, Internal Medicine and Integrative Medicine, Bnai Zion Medical Center, and the Technion Faculty of Medicine, Israel.*

Complementary and Alternative Medicine (CAM) is predominantly practiced in outpatient settings, catering mainly to patients with chronic and stable conditions. In contrast, hospitalized patients typically present with acute medical conditions and are managed by multi-disciplinary, highly specialized medical teams. Integrating CAM in hospital settings requires advanced training in both CAM modalities and biomedicine. Effective integration necessitates robust communication between CAM practitioners and hospital staff, adherence to treatment protocols, quality assurance, and safety management.

Since 2010, an integrative CAM service has been active at Bnai Zion Medical Center, an academic government hospital in Israel. This service has become an integral part of the hospital's identity, recognized by leaders and administrators for its impact on the surgery and internal medicine departments. Over the years, the integrative service has facilitated numerous opportunities beyond patient care, such as enhancing surgeon performance through hypnosis, empowering hospital orderlies with positive communication skills, and establishing integrative resilience clinics for hospital staff during the COVID-19 pandemic. These initiatives have underscored the potential of hospital-based integrative services to transform healthcare delivery.

Based on our extensive experience and similar global observations, we conclude that hospital-based integrative services can serve as pivotal points for transforming healthcare systems. Prof. Elad Schiff will share insights from this unique integrative service and discuss the challenges and facilitators in establishing such services in hospital settings.

### **Synergizing TCIM, Science and Sustainable Development: Universities as Catalysts for Innovation**

**Georg Seifert**

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The integration of Traditional and Complementary Integrative Medicine (TCIM) within the framework of the Sustainable Development Goals (SDGs) highlights the significant contributions TCIM can make toward achieving these global objectives. By leveraging the rich knowledge and practices inherent in TCIM, universities can foster innovative research and educational initiatives that address urgent health and environmental challenges. Academic institutions can serve as catalysts for innovation, promoting interdisciplinary collaborations that enhance the understanding of TCIM's role in preventive healthcare. Through illustrative examples, effective strategies for incorporating TCIM into curricula and research programs will be outlined, emphasizing its potential to advance patient care, public health, environmental sustainability, and community well-being. By aligning TCIM with scientific inquiry and sustainable development, universities can not only contribute to the SDGs but also reshape the future of healthcare and wellness.

### The universal pathway of chronic disease; everything is everywhere at the same time

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The COVID-19 pandemic caused and is still causing dramatic health problems, but it also gave medicine a huge push forward. Our generation has never experienced a disaster with worldwide consequences and unknown origin. The latter has been the main reason for the fact that even today many people suffer the so called COVID-19 anxiety syndrome based on fear for the unknown (1) and the presence of a virus that developed many strategies that compromised the human immune system. But, as aforementioned, the pandemic also gave medicine the possibility to enhance the knowledge not only about viral contention but also about the way many diseases develop through the combination of psychosocial stress and pathogenic load. The combination of both risk factors gives rise to the development of multiple maladies such as diabetes type 1, Morbus Hashimoto, Dupuytren and even Morbus Bechterew (2); the interaction of the brain and the immune system being responsible for the development of those diseases. Lately another fact became clear; the people suffering from the susceptibility of the mentioned diseases previously show something with systemic impact; a state of cytokine resistance with leptin resistance as the center of cytokine resistance (3). The latter affects immune functioning and most, if not all, other vital functions in homo sapiens. Whereas leptin is a cytokine itself, leptin resistance affects the function of other cytokines such as erythropoietin, thrombopoietin, growth hormone and even prolactin. These are also cytokines and can suffer loss of function through systemic cytokine resistance. More than 5000 cytokines have been identified and all suffer loss of function caused by chronic hyperleptinemia and leptin resistance. Both factors, chronic hyperleptinemia and leptin resistance, develop through modern life based risk factors such as sitting behaviour and many other, evolutionary unknown, risk factors such as the presence of nanoparticles, pesticides, air born toxins and ultrarefined food developed in the last 250 years; the Anthropocene (4). Every person suffering from chronic disease needs personalized treatment; nevertheless, all of them have to recover the normal communication pathways between the brain and the immune system by recovery of systemic cytokine function. Don't forget that humans prevail because of these two metasystems; the brain and the immune system (5).

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### **Integrating the immune and nervous systems with sleeping**

**Xevi Verdaguer**

*Institut Xevi Verdaguer*

Sleep is an important test for the nervous system, immune system, and endocrine system health. Our health is regulated by a circadian activation of the daily physiological functions related to our organs. The nervous and immune systems are activated in order to keep us safe in the environment we live. Neuro-immune-endocrine dysregulation is associated with poor sleep quality and insomnia, and vice versa. A poor sleep will directly affect these conditions and can get to chronic situations of pathologies. We know any immune challenge (internal or external) can get to a temporary alteration of night's rest and sleep architecture. The study of these associations by analyzing key biomarkers (neurotransmitters, immunomessengers and hormones) permits us to understand what the brain is deciding at any moment and whether or not new interventions or regulatory proposals are necessary to treat these systems in order to recover health.

### Imperative need to assess the therapeutic potential of off-patent therapies

#### **Luis Prieto-Valiente**

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The current growing tendency to consider randomized clinical trials, RCTs, to be almost the only option in clinical research, forces us to explain that there are other very interesting options and to inform our clinical colleagues about the danger of ignoring them.

The practice of medicine improves day by day and medicine as a science advances at a good pace, due to the tireless research concern of doctors, who in many cases sacrifice many hours of rest and private consultation to dedicate themselves to research. But the advancement of medicine is considerably slowed down by some chronic errors that we are making, especially in the last twenty years. Avoiding them does not cost money or additional effort, it is just about increasing our knowledge in some basic points. Let's see what this brake consists of and how it can be avoided.

1. The importance of RCTs is disproportionately magnified, to the detriment of other designs that are also very useful
2. An attempt is made to channel all medical research towards RCTs, (overseen by external committees)
3. RCT projects are vetoed, alleging that they have serious methodological flaws, that they are not such errors

This phrase, said by a prestigious professor of medicine, sums up a good part of the situation:

*<< RCTs are a very good tool for medical research, which incorporates very good methodological refinements, but it is desperate to see how we are moving towards the "dictatorship of the clinical trial", which disregards all information that don't come that way. We must stop this absurd drift that seriously slows down the progress of medicine >>*

How is it possible that something that is very good can be very bad? In reality, the same thing happens in practically all areas of life. There are many rules and procedures that are correct and very relevant in certain cases and yet may be inappropriate or harmful in other contexts.

You have to be clear about the difference between clinical trial and clinical study. Research methodology (which is sometimes called biostatistics and other times Evidence-based medicine) is a discipline that the doctor must deal with whenever he does research, although in most cases he is not an expert in it, because being one requires many years of study and practice. Doctors are experts in medicine and very rarely have they had time to delve into research methodology enough to be autonomous in that field. Therefore, they are vulnerable to the attempts at deception and manipulation that various pressure groups make on them.

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### Status Quo of Intellectual Property of Traditional Medicine Products and Therapies in the International Context: UN System

#### **Hiba Boujnah**

*Public health expert with extensive experience in health diplomacy, strategic planning, and cross-cultural communication*

This presentation explores the challenges and opportunities in protecting traditional medicine within the current intellectual property (IP) framework, with a focus on non-patentable therapies. As global interest in integrative medicine grows, traditional therapies face unique legislative and ethical challenges under existing IP laws, which often do not accommodate the communal and non-commercial nature of this knowledge. We examine the limitations of current IP mechanisms and the potential of sui generis systems as alternatives. The discussion emphasizes the need for a Unique Evaluation System that respects cultural integrity while promoting fair assessment and regulatory recognition. Such a system would align with international efforts led by WIPO and the UN and pave the way for a comprehensive approach to integrate traditional medicine into modern healthcare systems globally.

### **The Current Legal Framework for Non-Patentable Therapies in the European Union**

#### **Francisco Almodóvar Navalón**

*Lawyer of the Madrid Bar Association*

This communication analyzes the legal framework regulating non-patentable therapies in the European Union (EU), addressing its impact on clinical practice, regulatory compliance, patient accessibility, ethical equity, and citizens' right to health. Non-patentable therapies—including natural, traditional, and integrative practices—face specific regulatory challenges due to the lack of patent protections that generally promote innovation in conventional healthcare. This limitation affects both the formal integration of these therapies into EU healthcare systems and equitable access for all citizens to diverse therapeutic options.

The analysis focuses on recent regulatory developments within the EU, examining how legislation concerning clinical trials, safety protocols, and professional licensing seeks to balance patient safety with accessibility to therapeutic alternatives. Special emphasis is placed on the ethical importance of equity in access, underscoring the need for policy adjustments to ensure that all individuals, regardless of socioeconomic status, can exercise their right to safe and effective healthcare options, including non-patentable therapies. The role of EU health policies and institutions, such as the European Medicines Agency, is also explored in promoting frameworks that support the responsible integration of traditional and complementary therapies into national healthcare systems.

Our findings highlight specific regulatory gaps within the EU's legal framework and propose policy recommendations aimed at enhancing ethical equity and supporting citizens' fundamental rights to diverse and inclusive healthcare within the EU.

### Gut-Brain-Skin Axis

**Sari M. Arponen**<sup>(1)\*</sup>

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The gut-brain-skin axis has emerged as a critical framework in understanding the complex interactions between the digestive system, nervous system, and skin health. This triadic relationship underscores the importance of an integrated approach to health, recognizing the bidirectional communication pathways that link these systems.

Psychosocial stress significantly impacts skin health through the activation of the hypothalamic-pituitary-adrenal (HPA) axis, resulting in the release of stress hormones such as cortisol. Elevated cortisol levels can lead to inflammation, impaired skin barrier function, and delayed wound healing processes. For instance, increased cortisol levels can lead to inflammation, impair skin barrier function, and slow down wound healing processes.

On the other hand, recent research has highlighted the crucial role of the cutaneous microbiome—the community of microorganisms residing on the skin—in mediating the effects of stress. Stress-induced disruption of this microbiome can lead to dysbiosis, exacerbating skin conditions such as acne, eczema, and psoriasis. This dysbiosis highlights the delicate balance required to maintain skin homeostasis and the far-reaching implications of microbial disturbances.

The gut-brain-skin axis also elucidates how lifestyle factors, including diet and sleep patterns, influence skin health.

In summary, the gut-brain-skin axis underscores a complex interplay between the digestive system, mental state, and skin condition. Psychosocial stress triggers physiological responses that affect both the brain and skin through hormonal pathways like the HPA axis. Additionally, lifestyle factors such as diet and sleep significantly influence this triad by affecting microbial balance in both the gut and on the skin. Understanding these interactions is crucial for developing holistic approaches to health and wellness that address the interdependence of these systems.

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### INTEGRATING SKIN MICROBIOME AND IMMUNITY IN DERMATOLOGICAL DISORDERS

#### **Cristina Zemba Vieytes**

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The skin microbiome is composed of a diverse community of microorganisms, most of which are harmless or even beneficial to their host.

Colonization is driven by the ecology of the skin surface, which is highly variable depending on topographical location, endogenous host factors and exogenous environmental factors.

These microorganisms interact directly with host cells and are affected by skin immune responses and external factors. The cutaneous innate and adaptive immune responses can modulate the skin microbiota, but the microbiota also functions in educating the immune system.

Benefits of the skin microbiome include the establishment of immunological tolerance in early life, production of antimicrobials and immunoregulating metabolites, facilitation of wound healing, enhancement of barrier function, and regulation of the migration, metabolism, and function of skin cells. By contrast, pathogens and pathobionts in the skin microbiome can cause disease and are associated with skin disorders.

The crosstalk between the skin microbiome and the host is highly complex and many knowledge gaps remain.

An enhanced understanding of the skin microbiome is necessary to gain insight into microbial involvement in human skin disorders and to enable novel therapeutic approaches for their treatment

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### Exploring the link between emotional trauma and the multifactorial etiology of skin cancer

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Although the etiology of skin cancer is multifactorial it has mainly been attributed to ultraviolet UV radiation and genetic factors. While there's increasing research linking stress, stressful lifetime events (SLEs), emotional trauma, and skin diseases, limited research has delved into the impact of these factors on skin cancer development.

Our retrospective study investigated the potential link between stressful lifetime events (SLEs), emotional trauma, and skin cancer. Specifically, it focused on the relationship between adverse childhood experiences (ACEs), adult traumas, and the incidence of both melanoma and non-melanoma skin cancer (mainly basal cell carcinoma - BCC and squamous cell carcinoma -SCC).

The study included 268 patients from a dermatology clinic divided into three groups: melanoma survivors (32%), non-melanoma skin cancer patients (30%), and a control group without skin cancer (38%). Participants completed questionnaires regarding childhood and adulthood life events, and loss and gain of resources following their subjectively most stressful event in adulthood. Multinomial logistic regression statistical analysis was used to examine the link between these life events and the development of skin cancer, considering factors like resource loss and gain.

ACEs were significantly associated with melanoma occurrence with the melanoma group reporting significantly more such experiences compared to the control group ( $p < 0.001$ ). Resource loss following a major adult stressful life event partially mediated the relationship between ACEs and melanoma incidence.

Our study expands the understanding of skin cancer risk factors highlighting the role of stress and emotional trauma, as additional risk factors along with the well-established ones. This study also underscores the need for a more comprehensive, holistic approach to emotional trauma and stress management, and developing positive coping strategies in skin cancer patients, since they remain at risk of disease recurrence and progression for many years after diagnosis.

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### INTEGRATIVE MEDICINE – THE FUTURE OF HEALTHCARE

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The landscape of medicine has been slowly progressing toward a more holistic and individualized approach to healing.

The combination between western medicine and complementary therapies, is described as “integrative medicine”.

Integrative Medicine uses complementary therapies to assist in the promotion of health and healing of patients.

This approach to healthcare takes account of the whole person (body, mind, and spirit) including all aspects of lifestyle, incorporating the sense of community.

Examples of complementary medicine healing systems include homeopathy, naturopathy, acupuncture, orthomolecular, ozone therapy, neural therapy, osteopathy and massages.

Integrative medicine can be interpreted as a lifestyle medicine because it views the patient as an active part of the recovery through the consciousness and awareness of wrong behaviors (food, sleep, tobacco, alcoholic beverages, unresolved emotional conflicts and self-limiting mental processes).

It promotes changes in the behavior to promote health, incorporating lifestyle changes, diet and nutrition, physical activity, stress management, restorative sleep, meditation, yoga, sensible exposure to sunlight, avoidance of risky substances, social connection, controlled breathing and happiness.

Employing a personalized strategy that considers the patient’s unique needs, circumstances and conditions, and using appropriate interventions of a series of scientifically proven therapies it’s the most effective way to heal illness and disease, restoring and maintaining optimal health.

This is what I will demonstrate in my presentation at the congress.

### Growing old at home, obligation or preference

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Old age is the stage in life with the highest ratio of disabled people. Nonetheless, it is important to add that a conserved perception of a good quality of life will depend on each person's financial means and background.

It is now acknowledged that most elderly people prefer to continue living in their own homes, even if they are alone and suffer from a disability.

The factors that condition ageing among older people members of the population living alone include the following: the existence or absence of a social network, gender, the home or place where they live, their capacity to function, and welfare and health resources.

Majority of the older people believe that moving to live elsewhere could be associated with undesirable situations like dependence, abandonment or being uprooted.

Many of them think that, in some cases, moving to live with the family does not solve the problem of loneliness or the need to hire help, since some families have to work.

Families interpret the choice of their older relatives living alone as an effort to retain the ability to make your life their own decisions and, to a certain extent, their power

It is important to identify products designed for the older people who might live for a long time and strengthening of community services, allowing the elderly to stay in their own homes if they wish, while freeing families from the obligation of having to care for them.

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### Vital and healthy into old age - what we can learn from TCIM for longevity?

**PD Dr. Christian S. Kessler**, MA, MSc

Regardless of their origin or regional roots, traditional medical systems (TM) attach great importance to health-promoting lifestyles, healthy eating habits and health-related ethics. In traditional healthcare settings, these aspects play key roles in health promotion, prevention and therapy and have thus been making effective contributions to reducing morbidity and mortality for millennia. In addition, the major TM systems worldwide also have a special focus on regeneration, vitality-promotion and rejuvenation, e.g., via phyto- and mycotherapy as well as specific cleansing procedures and spiritual practices, for example in Ayurveda or in TCM. In some cases, there are even separate disciplines that focus on or exclusively deal with these topics, such as *rasayana* in traditional Indian medicine. In principle, it can be assumed that global healthcare strategies are very likely to benefit from the wealth of experience of traditional medical systems when it comes to improving health-related quality of life and promoting longevity.

### Healing Beyond Boundaries: Integrative Approaches with Psychedelic Therapies

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Since the dawn of humanity, we have strived to alleviate suffering and promote health through various means. From natural remedies to modern pharmaceuticals, energy medicine to psychotherapy, different approaches have emerged, each addressing unique aspects of human health. As our understanding of medicine evolves, the boundaries between these approaches become increasingly blurred, revealing opportunities for integrative practices that transcend traditional limitations.

This presentation explores the role of psychedelics as a unique “bridge” that connects diverse areas of medical knowledge, linking traditional and modern medicinal practices, pharmacological and psychotherapeutic approaches, and even the realms of conscious and subconscious healing. Psychedelics possess the potential to act as a “potentiator” of existing healing technologies, enhancing pharmacological treatments, psychotherapeutic interventions, and energy medicine such as acupuncture.

We will delve into practical examples, such as how psychedelics can improve group therapy by fostering empathy, authenticity, and a sense of belonging among participants, or how they can accelerate psychodynamic therapy by reducing defensive mechanisms and strengthening the therapeutic alliance. The discussion will also cover their role as diagnostic tools and promoters of health, especially in preventing conditions like pathological grief and combatting social isolation.

However, the profound power of psychedelics to alter consciousness demands careful consideration of potential risks, including the possibility of re-traumatization, power abuses, or the amplification of existing mental health conditions. It underscores the importance of ethical considerations, proper training, and institutional oversight to ensure the safe and effective use of these substances in healing.

In conclusion, psychedelics are emerging as powerful tools for an integrative approach to healing. Like any potent technology, their use requires safeguards, including ethical codes, rigorous training, peer supervision, and ongoing research, to harness their benefits while mitigating risks. This presentation aims to highlight how psychedelics can pave the way for a holistic, inclusive, and effective path toward health and well-being.

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### Two decades of psychedelic research in Hospital de la Santa Creu i Sant Pau de Barcelona

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Ayahuasca is a plant preparation that contains N,N-dimethyltryptamine (DMT), a 5-HT<sub>2A</sub> agonists and the alkaloids harmine, harmaline and tetrahydroharmine.

In the early 2000s Professor Riba and his group of Human Neuropsychopharmacology research at *Hospital de la Santa Creu i Sant Pau* (Barcelona), conducted the first placebo-controlled trials with ayahuasca in healthy volunteers, leading the pioneering trials on the safety and tolerability, pharmacokinetics, and subjective and neurophysiological effects of ayahuasca<sup>1</sup>. After that, they studied the potential therapeutic benefits in patients suffering from depression and substance use disorders. Using neuroimaging techniques, the group also found evidence that ayahuasca activates brain areas associated with emotional processing and memory<sup>2</sup> and showed that ayahuasca also induces a deactivation of the “default mode network” (DMN), thus improving mindfulness capacities and emotional reprocessing. Examining the potential effects of DMT, they discovered that it regulates adult neurogenesis in vitro and in vivo<sup>3</sup>.

Since 2015, the Human Neuropsychopharmacology group and the Mental Health group from the same institution started to collaborate<sup>4</sup> and conducted other studies together on community samples, suggesting that ayahuasca is as effective at improving acceptance as more lengthy and costly mindfulness interventions. Other findings also revealed that ayahuasca is also effective at improving decentering, awareness, and sensitivity to meditation practice, and it also showed a potential therapeutic effect on emotion dysregulation<sup>5</sup>, well-being and self-compassion. These preliminary studies concluded that ayahuasca could have a therapeutic effect on individuals with negative affect and other psychopathological conditions.

These and other studies at Hospital de la Santa Creu i Sant Pau, remain one of the largest, most sustained, and systematic research of this complex mixture and opened a door for further research abroad.

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### Current status of research on psychedelic therapies

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This presentation will explore the current state of research on psychedelic therapies, highlighting recent advances in the use of substances such as psilocybin, LSD, and MDMA for treating mental disorders like depression, PTSD, and anxiety. Psychedelics have been used for millennia by cultures around the world for spiritual and healing purposes. Key scientific findings will be discussed, including the neurobiological mechanisms of action and the associated ethical and legal challenges. Additionally, the most advanced clinical trials will be summarized. For instance, phase 2 trials of psilocybin have shown significant reductions in treatment-resistant depression, with up to 80% of participants experiencing a clinically meaningful response. MDMA-assisted therapy for PTSD has demonstrated impressive results, with over 60% of participants no longer meeting the diagnostic criteria for PTSD after treatment.

Recent preclinical studies have revealed significant findings regarding the impact of psychedelics on neuroplasticity. Research indicates that substances like psilocybin and LSD can promote the growth of new neural connections and enhance synaptic plasticity, which may underlie their therapeutic effects. These findings suggest that psychedelics could facilitate the brain's ability to reorganize and adapt, offering potential benefits for mental health conditions characterized by rigid neural networks.

Moreover, there is compelling real-world evidence indicating that psychedelics can profoundly alter one's relationship with nature and self. Studies have shown that individuals who undergo psychedelic experiences often report a heightened sense of connectedness to nature and an increased sense of unity and well-being. These changes are particularly relevant for integrative medicine, which emphasizes holistic approaches to health and wellness.

Despite these promising results, recent difficulties have emerged. The FDA advisory panel has raised concerns about the long-term safety and regulatory hurdles of MDMA, likely leading to delays in approval processes. These challenges underscore the need for continued research and dialogue to address safety, ethical, and legal issues surrounding psychedelic therapies. Nonetheless, the potential future of these therapies in clinical practice remains highly impactful for the field of mental health, particularly in promoting significant lifestyle changes and overall well-being.

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### Electroceutics: Evidence and indications

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Electroceuticals, also known as neuromodulation therapies, are an emerging field in medicine that uses electrical devices to modify nervous system activity to treat various diseases. These devices send precise electrical signals to specific nerves, adjusting their activity to restore the body's balance and normal function.

Their main features and benefits include therapeutic precision and reduced toxicity and side effects. Electroceuticals are being researched and developed for a variety of conditions, including inflammatory diseases, neurological disorders, and chronic diseases such as rheumatoid arthritis, epilepsy, and depression.

Electroacupuncture is a technique of percutaneous neuromodulation related to traditional Chinese medicine, which requires a long learning curve. There is a growing interest in developing user-friendly, non-invasive devices for both patients and professionals. Among these non-invasive electrostimulation devices, transcutaneous Vagus Nerve Stimulation (tVNS) stands out, used to treat epilepsy, treatment-resistant depression, or migraines. These devices send signals to the vagus nerve, modulating brain activity.

The main challenges of this new therapeutic approach include its development and regulation, as well as the economic costs of related research, which could limit accessibility for some patients. Long-term studies are necessary to fully understand the effects and safety of electroceuticals over time.

Neuromodulation represents a promising vision in medicine, offering precise, personalized treatments with fewer side effects for a variety of diseases. Ongoing research and development in this field, supported by significant investments and interdisciplinary collaborations, predict a future in which electroceuticals play a central role in improving human health.

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### Treating healthcare providers: integrative medicine treatments, influence heart rate variability in personnel

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**Introduction and objective:** Healthcare personnel (HCPs) are exposed to considerable physical and emotional stress inflicted by the ongoing war in the Middle East. The present study purposed to explore the effect of Integrative medicine (IM) intervention, provided by integrative oncology trained practitioners, on heart rate variability (HRV) parameters of HCPs challenged by war-related concerns. This, while exploring the IM intervention effects during wartime comparing to previous clinical setting where IM treatments were administered to frontline COVID-19 personnel.

**Methods:** HCPs working at the Carmel Medical Center in Haifa, Israel, underwent a single 30-minute individually-tailored IM treatment session with a combination of varied IM modalities (acupuncture, mind-body, and/or manual-movement modalities, including Anthroposophical medicine). Pre-intervention and post-intervention concerns were assessed using the Measure Yourself Concerns and Well-being (MYCAW) questionnaire, with post-treatment free-text narratives were analyzed for clusters of emotional- and spiritual-related keywords (ESKs). HRV parameters were measured during the IM session at 3-minute intervals, at the beginning of the treatment and 15 minutes later. The primary outcome was the change in the frequency-domain variable of percentage of high frequency bands (Relative Power HF, %) following IM intervention among HCPs expressing ESKs compared to those not expressing ESKs (nESKs). Other parameters analyzed included root mean square of successive RR interval differences (RMSSD), standard deviation of NN intervals (SDNN), and percentage of successive RR intervals differ by more than 50 milliseconds (pNN50). Pre-intervention and post-intervention concerns were assessed using the Measure Yourself Concerns and Well-being (MYCAW) questionnaire, with post-treatment free-text narratives were analyzed for clusters of emotional- and spiritual-related keywords (ESKs).

**Results:** 162 HCPs underwent IM treatment, 136 with high-quality HRV measurements, with 87 (64%) ESKs. Mean Relative Power HF (%) increased more significantly for ESKs ( $p < 0.01$ ), with increased parasympathetic activity in ESKs group associated with increased pNN50 ( $P = 0.022$ ) and RMSSD/SDNN ratio ( $P = 0.010$ ).

**Conclusions:** The study suggests association between increased parasympathetic activity during IM interventions and a more emotional-spiritual expressive narrative reported by HCPs post treatment. Considering that the IM war-related intervention follows a similar model of IM intervention during the COVID-19 crisis, further research is needed to better understand the relationship between subjective ESK expression and objective HRV and other physiological parameters among HCPs working in stressful clinical settings such as exposure to war.

### Clinical context for Vagal Neuromodulation

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Stress response involves communications between the brain and the cardiovascular, immune, metabolic and other systems via the nervous and endocrine pathways(1). The autonomic nervous system (ANS) plays a central role in the response to stress that is translated into increased sympathetic and decreased parasympathetic responses. The vagus nerve and its branches comprise the major peripheral part of the parasympathetic nervous system (PNS) and as such can be an ideal target for neurostimulation and neuromodulation(2).

Neuromodulation involves the alteration of nerve activity through targeted delivery of electrical or chemical signals that affect the function of neurons rather than directly stimulating them to fire.

Vagal neuromodulation can be involved in regulating functions such as heart rate, digestion, inflammation, mood and other. It traditionally can be achieved through electrical vagus nerve stimulation (VNS). VNS is used for drug-resistant epilepsy, depression and chronic pain.

Integrative medicine (IM) modalities including yoga(3), acupuncture(4), and touch therapy(5) offer a safe and non-invasive methods to enhance the PNS activity through vagal neuromodulation and relief stress, ease pain and promote calmness.

During the COVID-19 pandemic and the recent war in the Middle East, we offered IM treatments for healthcare personnel to alleviate quality-of-life-related concerns. Subjects who underwent IM intervention displayed improved PNS activity and expressed narratives of relaxation and relief.

From a conventional internist/ endocrinologist perspective, I am intrigued by the convergence of complementary medicine modalities with physiological pathways and parameters. These findings should open the door to further research to explore the benefits of IM on neuro-hormonal modulation.

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### Advancements in Sleep Medicine: A Holistic approach

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Sleep is a fundamental physiological process crucial for our physical, mental, and emotional health. It is during sleep that our bodies repair, consolidate memories, and rejuvenate for the day ahead. However, various factors in modern lifestyles often disrupt this natural process, leading to a myriad of health issues.

In today's fast-paced world, stress, technology, irregular work schedules, and poor lifestyle habits have become pervasive contributors to sleep disorders such as insomnia, sleep apnea, and restless leg syndrome. These disorders not only affect the quantity but also the quality of sleep, significantly impacting overall health and quality of life.

On the other hand, technological innovations have revolutionized sleep medicine. From wearable devices monitoring sleep patterns to advanced sleep tracking apps, these tools empower individuals to gain insights into their sleep behaviors and make informed decisions to improve sleep quality.

As physicians, we need to understand how sleep medicine is integrated in our practice and how to monitor our patients.

The paradigm of Integrative Health offers a comprehensive approach to addressing sleep disturbances. It recognizes the interconnectedness of mind, body, and spirit, and advocates for a personalized treatment plan that combines conventional medicine with complementary therapies.

We will discuss the most relevant and updated concepts in Sleep Medicine, a field that is constantly challenging established beliefs. We will also introduce how technology such as consumer devices can be used in our clinical practice, concerns regarding accuracy and their best use case.

### Chinese Medicine and Circadian Rhythm

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Sleep-wake circadian rhythm disorders are increasingly common in modern society, due to changes in lifestyle. (1)

Lack of sleep and sleep quality are global health problems. Poor sleep quality has adverse health consequences (2), including fatigue, irritability, daytime dysfunction, slow responses, and increased alcohol/caffeine intake (2) as well as metabolic outcomes in adolescents.(3)

According to some estimates, it is believed that up to 10% of people with sleep disorders have a sleep-wake circadian rhythm disorder (4).

One of the main non-pharmacological treatments for people with sleep disorders is acupuncture (5) Several in vivo and clinical investigations have shown that acupuncture is one of the most important components of traditional Chinese medicine, it has been shown to modulate related circadian rhythms. with sleep. Within the framework of central and peripheral clock/biological regulation, acupuncture plays an important role in restoring circadian rhythms by modulating the CNS and neurotransmitters.

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### CIRCARDIAN RHYTHM IN AYURVEDA

**Elena Ekta Saura**<sup>(1)\*</sup> Sudhakar Ramchandra Powar<sup>(2)</sup>

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Concept of chronobiology and rhythms is explained in detail in Ayurveda.

As the question of health and healthy lifestyle is centred around the nature and rhythms of nature. – the macrocosmos-microcosmos theory also explains inter-relation between biorhythms and ecorhythms – their influence on body physiology and pathophysiology is also considered

Various regimens/protocols are advised to counteract the harmful effects and to enhance the positive effect on the body equilibrium e.g. Dinacharyā, (circadian/daily regimen) Ritucharyā (seasonal regimen) Rutumatricharya (regimen of menstrual cycles) etc.

Daily regimen (Dinacharyā) adapted to age, season, constitution, location ensures normal equilibrium of bio-humors (doshas) leading to homeostasis, promotes health and prevent disorders.

Presentation highlights chronobiological concepts described in Ayurveda, their utility in diagnosis, application in health promotion (swasthavrutta regimen of health) for prevention and treatment of diseases with special emphasis on daily regimen based on circadian rhythms.

**Keywords:** Ayurveda, Dinacharyā, Rātricharyā, Ritucharyā, Circadian rhythm

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### Prescripción de Ejercicio en el siglo XXI

#### **Alberto Sacristán Rubio**

La inactividad física está correlacionada con más de 20 enfermedades crónicas, desde el cáncer hasta EPOC, enfermedades metabólicas (Diabetes Mellitus,...). Existen evidencias suficientes que demuestran que la actividad física regular es beneficiosa para la salud, bien en la prevención de enfermedades como en el tratamiento de las mismas. La actividad física regular forma parte de los pilares fundamentales de la salud, como es el descanso, alimentación, evitar tóxicos,...

En la consulta de medicina integrativa la actividad física debe formar parte de cualquier programa de salud integrativa. Como Agentes de salud tenemos la responsabilidad de proponer y ofertar las mejores opciones para nuestros pacientes, bien en prevención o bien en el tratamiento de alguna enfermedad y debemos conocer los conceptos básicos para integrar un programa de actividad física en el Plan de Salud del paciente. Realizar una valoración inicial de la condición física, y control de la adherencia al tratamiento propuesto sobre ejercicio, es fundamental.

“Ejercicio es medicina”

“Ejercicio es salud”

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In Vancouver style and maximum 5 bibliographical references

### Back Pain. Importance of stability, mobility and Strengthening

#### **Fran Martínez**

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1. Back pain
2. Epidemiology: back pain as a social and health problem.
3. Causes of back pain.
4. What can physical exercise professionals do about back pain?

1.1 Teach proper postural habits and effective, safe techniques for handling heavy loads.

- The importance of raising awareness about how our spine works.
- Understanding the key factors that allow us to develop and maintain a healthy spine at the bone, joint, and muscular levels, with the key words being stability, mobility, and strengthening.

1.2 Developing training programs for the trunk and spinal muscles.

- "Trunk stability exercises."
- "Spinal mobility exercises."
- "Trunk muscle toning exercises."

Back pain is one of the most common ailments and one of the leading causes of disability. Therefore, it is essential to know the keys that allow us to develop and maintain a healthy spine. The key words are stability, mobility, and strengthening.

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### Physical exercise as Senomorphic and Senolytic

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Physical exercise plays a crucial role in promoting healthy longevity by acting as a senolytic and senomorphic agent. Senolytics are compounds that induce apoptosis in senescent cells, while senomorphics modulate the phenotype of these cells, reducing their secretion of inflammatory and harmful factors. The accumulation of senescent cells contributes to aging and various age-related pathologies, such as cardiovascular diseases, type 2 diabetes, and neurodegenerative disorders.

This conference will explore how physical exercise, including intermittent hypoxic training, influence cellular biology to delay aging. We will present recent scientific evidence showing how exercise reduces the burden of senescent cells in various tissues and improves systemic function. Additionally, we will discuss the molecular mechanisms involved, such as the activation of signaling pathways associated with DNA repair, reduction of oxidative stress, and enhancement of mitochondrial function. With a deep understanding of these processes, healthcare professionals can design more effective exercise interventions to promote a longer and healthier life, highlighting the importance of exercise not only as a preventive tool but also as a therapeutic one in the context of aging.

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### **Papel de los nutraceuticos y botánicos en la inflamación de bajo grado**

**Juan Serrano**

La reacción inflamatoria es una respuesta frente a diferentes estímulos externos e internos con el objeto de reducir el daño y punto de partida de la resoleómica.

Sin embargo, cuando se mantienen activas las vías de transducción con la liberación de mediadores inflamatorios, durante un periodo prolongado de tiempo, se produce un estado de inflamación crónica de bajo grado, leve pero persistente, que no se resuelve.

Es un hecho reconocido que la inflamación sistémica de bajo grado está asociada con la mayoría de las enfermedades no transmisibles (ENT), incluyendo diabetes, obesidad, enfermedades cardiovasculares, cánceres, trastornos respiratorios y musculoesqueléticos, así como deterioro del desarrollo neurológico.

Aunque disponemos de fármacos antiinflamatorios para mitigar calmar la inflamación aguda, estos no suelen ser eficaces para tratar la inflamación crónica añadido a que presentan efectos no deseados.

En un contexto de resoleómica, expondremos aquellas especies botánicas, farmacológicamente activas, capaces de actuar modulando los mecanismos moleculares reguladores de la inflamación.

### Acupuncture and Inflammation

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When I first learned acupuncture as an RAF medical officer in the 1990's, I remember that a couple of my favourite points (ST36 and LI11) were listed under points for immune regulation. I used them for treating patients with hay fever when I took over an acupuncture practice on leaving the military. Whilst it seemed to do something for most patients, I had no idea about any physiological mechanism at the time.

Not long after that, a chance finding during the development of CNI-1493 (semapimod) led to the discovery of the vagal anti-inflammatory reflex.<sup>(1)</sup> properties:{"formattedCitation": "(1 I missed this despite acupuncture getting a mention in the journal *Nature* in the same year.<sup>(2)</sup>

Although laboratory research consistently demonstrated effects of acupuncture in acute inflammation, clinical research in conditions such as rheumatoid arthritis, as well as my clinical experience, was much less convincing.

It was a complete surprise, therefore, to see the 2014 paper from the laboratory of Luis Ulloa describe improved outcomes in terms of mortality in a mouse model of sepsis.<sup>(3)</sup> Leading on from this, a group from Harvard demonstrated both increased and reduced lethality in sepsis based on sites of electroacupuncture stimulation,<sup>(4)</sup> and this group went on to publish groundbreaking research elucidating the neuroanatomic mechanisms involved.<sup>(5)</sup>

Now there is even clinical data in human patients demonstrating reduced mortality in intensive care patients. However, clinical trials of acupuncture for prophylaxis of chronic inflammation are conspicuous by their absence, yet there is vigorous activity to develop implantable devices by industry players with their keen eye for profits.

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### Ozone – therapy for inflammation: clinical experience and evidence

#### **Dr. Alejandra Menassa de Lucia**

*Doctor specializing in Internal Medicine. CMI Medical Director*

Medical ozone is anti-inflammatory in several ways. On the one hand, it modulates the nuclear factors NrF2 (anti-inflammatory) and NfKB (pro-inflammatory). Being an activator of the first, resulting in an anti-inflammatory effect. On the other hand, it has an immunomodulatory role, being a stimulator of the immune system at low doses and immunosuppressant at high doses (which makes it very interesting at low doses in tumor processes, for example, as an immunostimulator and at high doses in autoimmune diseases, such as immunosuppressant).

Ozone is also a powerful oxidant initially, which can immediately inactivate proinflammatory substances such as prostaglandins or arachidonic acid through direct oxidation, so when injected locally it has an immediate anti-inflammatory and analgesic effect. We present our experience at CMI (Integrative Medicine Clinic) in premenstrual syndrome, which we consider, together with doctors Lolás and Atila Toth, to have an infectious-inflammatory etiology. Ozone has helped us reduce germs and inflammation in these patients, with important clinical results and few side effects.

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### The Role of Yoga in Reducing Inflammation for the Treatment and Prevention of Chronic Disease

#### Deniah Pachai

Chronic inflammation is a critical factor in the development and progression of numerous chronic diseases, including heart disease, type 2 diabetes, rheumatoid arthritis, and cancer.<sup>1</sup> Yoga, a mind-body practice that integrates movement, breathing exercises, and mindfulness, has gained significant popularity in the Western world over the past century. Recent research suggests that yoga may play a valuable role in managing chronic diseases by reducing inflammation. This presentation will review current studies that investigate the impact of yoga on chronic disease management, focusing on outcome measures that include the measurement of biomarkers such as IL-6 and TNF-alpha,<sup>2</sup> but also outcomes that are relevant to patients, such as fatigue in breast cancer survivors.<sup>3</sup> mood, and fatigue.

**PATIENTS AND METHODS:** A randomized controlled 3-month trial was conducted with two post-treatment assessments of 200 breast cancer survivors assigned to either 12 weeks of 90-minute twice per week hatha yoga classes or a wait-list control. The main outcome measures were lipopolysaccharide-stimulated production of proinflammatory cytokines interleukin-6 (IL-6). The findings will help inform future health services and research, highlighting yoga as a potential supportive treatment option to enhance health outcomes.

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### Effect of mindfulness-based therapy on Inflammatory biomarkers and psychological variables to assess quality of life in patients with inflammatory bowel disease

**Rafael González-Moret** <sup>(1)\*</sup>, Ausias Cebolla <sup>(2)</sup>, M<sup>a</sup> Angeles García-Esparza <sup>(3)</sup>, Xavier Cortés <sup>(4)</sup>, Juan Francisco Lisón <sup>(5)</sup>, José Miguel Soria <sup>\*<sup>(5)</sup></sup>

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Inflammatory bowel disease (IBD) is a chronic and idiopathic gastrointestinal pathology whose bi-directional relation with psychological variables (e.g., quality of life, fatigue, and stress) has been studied in depth. Mindfulness-based interventions (MBI) have shown some efficacy in decreasing stress levels and improving quality of life. The present study aims to examine the potential mediator influence of dispositional mindfulness in the association between disease severity and health-related quality of life, stress, and fatigue in IBD patients. Besides in this study were investigated the correlations between inflammatory biomarkers and the quality of life (QoL) variables of individuals diagnosed with IBD. A Randomized controlled trial, a mixed-methods non-randomized controlled trial and a cross-sectional study were conducted to assess inflammatory biomarkers and psychological variables. Results concluded that mindfulness-based therapy administered as part of standard clinical practice effectively improves inflammatory biomarkers in patients diagnosed with inflammatory bowel disease. Dispositional mindful awareness seems to be a protective factor in addition to a promising intervention target in IBD patients, whose severity only influences quality of life, perceived stress, and fatigue through it. However Inflammatory markers such as CRP, FC, or cortisol in hair do not play a decisive role in assessing the QoL of IBD patients.

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### **Inmunotherapy and cancer management: state of the art.**

#### **Dra Amparo Iraola**

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Immunotherapy revolutionized cancer treatment in recent years. It has long been known that the immune system plays a fundamental role in the control of carcinogenesis along with other key points reported by Hanahan in 2001 and reviewed in 2011. This is due to the fact cancer is a disease characterized by genomic instability and hosts mutations and structural alterations at region called hotspots which lead to carcinogenesis and tumor progression. In this regard, the immune system (both natural and adaptive immunity) plays an essential role in immunosurveillance, by exerting a complex network with tumor microenvironment.

Cancer immunotherapies, including checkpoints inhibitors and adoptive cell therapy, help the immune system to recognize and attack cancer cells, a fact which has transformed treatment algorithms for many tumor types. Although the idea of recruiting our immune system to fight against tumor cells comes from afar, the most significant advances so far are a result of research and clinical trials developed in recent years.

The different available types of immunotherapy, namely adoptive cell transfer (ACT) and immune checkpoints inhibitors, have achieved durable clinical responses. Nevertheless, cancer immunotherapies may cause unique toxicity profiles requiring specific management, such as steroids and immune-modulating therapy.

Here, we will review the history and advances in cancer immunotherapy over the last years along with toxicities of checkpoints inhibitors and chimeric antigen receptor T cells and pathophysiology, diagnosis and management of cancer aiming to shed a light on the supporting role integrative oncology can provide to the management of treatment toxicities and improve cancer outcomes.

**Keywords:** immunotherapy, checkpoints inhibitors, chimeric antigen receptor (CAR) T cells, cytokines release syndrome, cytotoxic T-lymphocyte antigen 4 (CTLA-4), immune-related adverse events.

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### The Human Microbiome and Cancer: A Complex Interplay with Diagnostic and Therapeutic Implications

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The human body harbors a vast and intricate ecosystem of microbes, collectively known as the microbiome. This microbial community, encompassing bacteria, archaea, fungi, viruses, and protozoa, interacts not only with each other but also with our own physiology in ways still being unraveled. Recent research highlights the potential influence of the microbiome on cancer origin, development, diagnosis, and treatment. Advancements in high-throughput sequencing and metagenomics have reignited the interest on how the microbiome can influence cancer and its progression, and what opportunities are there for therapies and diagnostics. While a limited number of microbes that directly cause cancer (“oncomicrobes”) have been identified, their indirect influence through complex interactions with tissues and the immune system is likely far greater. These “complicit microbes” can either hinder or promote cancer development. My talk will provide an overview of main mechanisms of microbial influence. Genotoxin-mediated mutagenesis involves microbial toxins and enzymes directly damaging human cells, leading to mutational signatures observed in specific cancers. Immunomodulation refers to microbes or their metabolites influencing the immune system, which can modulate tumor growth through chronic inflammation or compromised immune surveillance. I will discuss potential therapeutic possibilities, including targeted antibiotics, prebiotics, probiotics, and fecal microbiota transplantation (FMT), and provide an example of how microbial profiling can help in the early diagnosis of colorectal cancer.

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### IMMUNITY AND SYSTEMIC HYPERTHERMIA (WBH)

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Since ancient times, temperature has been recognized as a beneficial process for health maintenance, particularly in relation to cancer—Imhotep (2600 BC) already spoke of heat for treatment. In recent years, a better understanding of cancer, tumor immunity, the tumor microenvironment, and metabolic processes has allowed for a more precise and thus effective use of WBH, revealing the intrinsic immunomodulatory properties of temperature, both thermally and metabolically. The potential of combining WBH with conventional oncological therapies—such as chemotherapy, radiotherapy, immunotherapy, and the latest monoclonal antibodies—is increasingly being explored, often enhancing the effectiveness of these treatments and reducing side effects. This has led WBH to become the fifth most requested therapy in oncology today.

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### Potential effects of plant-derived products in cancer immunotherapy

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Products derived from various medicinal plants have attracted considerable attention for their potential therapeutic effects in cancer treatment. These products often contain bioactive compounds that can modulate the immune system, either enhancing its ability to fight cancer cells or inadvertently suppressing immune functions. This presentation will describe the immune defense of cancer and highlight the role of the tumor microenvironment. Positive and negative effects of plant products on the immune defense will be discussed. Such dual effects require a balanced approach that considers both their therapeutic benefits and potential risks in cancer immunotherapy. Further research is needed to delineate the precise molecular pathways by which plant products affect immune cells. Optimal dosages and combinations need to be determined to maximize their beneficial effects while minimizing adverse effects. Finally, exploring synergistic effects of plant products with conventional cancer therapies may improve overall treatment outcomes and reduce side effects.

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### Endocrine disruptors: an integrative medicine perspective.

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The concept of the exposome implies a change of perspective in the investigation of how environmental risks affect human health. Instead of looking at the consequences that each exposure could have on an organism, it considers the study of all the exposures to which an individual is subjected from conception to death. The exposome takes into account all the elements to which one is exposed through diet, lifestyle and the environment in which one lives and works, as well as internal biological factors such as metabolism, gut microflora, inflammation and oxidative stress. Within this context, environmental chemical exposure is predominant given the variety and abundance of synthetic chemical compounds to which the individual is exposed. The European Chemicals and Mixtures Agency (ECHA) estimates that this number exceeds 140,000 chemical compounds and that the interaction with the humans is poorly understood. About 2,000 of these compounds affect hormone balance and are identified as endocrine disruptors (EDs) by the scientific community. The medical community has been slow to incorporate this pathogenic hypothesis into clinical practice and only very recently has the leap been made between descriptive studies of ED exposure and health consequences. At first everything revolved around estrogenic EDs and their association with hormone-dependent cancers such as breast and prostate. Later, the variety of hormonal mechanisms of action beyond sex hormones, links ED exposure to thyroid problems, brain development and maturation, obesity, diabetes, vitamin D deficiency, infertility, endometriosis, low sperm count, among other diseases, suggesting that any hormonal system is susceptible to being interfered with by EDs. Several aspects of integrative medicine would benefit from a deeper understanding of the etio-pathogenesis of EDs, on the one hand, targeted anamnesis to help identify sources and pathways of exposure and to act preventively; on the other hand, the incorporation of ED exposure prevention recommendations throughout the disease process, given their contribution in many of the stages that lead to the failure of homeostasis in a process that has been called the adverse outcome pathway (AOP) and the identification of key events (KE) that, when added together, link exposure to disease. In this respect, the identification of biomarkers in the field of the endogenous chemical exposome is an activity worthy of the greatest effort.

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### Ripple Effects: The Intimate Connection Between Ocean Health, Human Well-being, and Climate Change

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Marine ecosystems are vital to societal well-being, providing a range of goods, services, and cultural benefits (1). The connection between ocean health, human well-being, and climate change is increasingly recognised as a critical nexus for a healthy future (2). Climate change (CC) represents a significant threat to ocean health (3). Rising temperatures, acidification, marine heatwaves, and shifting marine currents are all altering marine ecosystems and impacting the availability of marine resources. Thus, ocean health is closely related to biodiversity conservation, which ensures the stability and resilience of ecosystems (4). Resilient oceans are essential for adapting to and mitigating the impacts of CC, but resilient marine ecosystems depend on our efforts to reduce pollution, overfishing, and habitat destruction.

The One Health approach emphasises the interconnectedness of human, animal, and environment (5). Reconnecting ocean and human health involves recognising and addressing the multiple ways in which our actions impact marine ecosystems and our health. This interconnection is evident in the economy, where sectors such as fisheries, aquaculture, energy, industry, trade, leisure, and tourism all depend on healthy oceans.

The intimate interconnection between ocean health, human well-being, and climate change underscores the necessity for an integrated approach to the management of human activities. By endorsing low-impact activities, promoting resilient oceans, and adopting the One Health approach, we can enhance the natural resilience of our oceans and ensure that they continue to provide essential services to humanity. This integrated approach has the potential to create a future where both humans and oceans thrive. The economy plays a crucial role in this endeavour, emphasising the need for less impactful practices, particularly in sectors reliant on marine resources. Through global cooperation and responsible consumption, we can ensure that the ripple effects of our actions lead to a healthier planet for all.

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### Nature and forest therapy – current overview of clinical evidence

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In recent years, there has been a growing recognition of the therapeutic benefits of natural environments, including forests, on human health and well-being. This emerging field, known as nature and forest therapy, has garnered significant interest within the medical community. This talk aims to synthesize current research findings and explore the application of nature and forest therapy in clinical settings.

Nature and forest therapy involves immersing oneself in natural surroundings, particularly forests, to enhance mental, physical, and emotional health. Studies have demonstrated a range of health benefits associated with this practice, including reduced stress levels, lower blood pressure, improved immune function, and enhanced mood. These findings suggest that incorporating nature and forest therapy into medical treatment plans can be a valuable complementary approach to conventional medicine.

The mechanisms underlying the therapeutic effects of nature and forest therapy are multifaceted. They include the reduction of cortisol levels, increased exposure to phytoncides, and the induction of parasympathetic nervous system activity.

This talk will highlight the integration of nature and forest therapy into medical practice, discussing practical implementation strategies, potential barriers, and future research directions.

### Ecoalleles in developmental disorders: exposome and genetic predisposition Is it possible to hack metabolism in neurodevelopmental disorders?

#### **Dra María del Mar Begara Morillas.**

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Are neurodevelopmental disorders explainable by genetic mutations, or are we facing an “environmental disease?”

Recent twin studies show that environmental factors are responsible for approximately 60% of ASD. The collective contribution of all genes was approximately 40%, but no gene accounts for more than 1–2% of all ASD.

The term ecogenetics describes the interaction between genes and the environment. We already know the importance of the exposome in the expression of genes, what we call epigenetic modifications. But in addition, many of our functional proteins show strong differences in their function from one individual to another, as there are more or less functional polymorphisms. Some polymorphisms, in turn, show a greater or lesser function, depending on exposure to different environmental factors, the “ecoalleles”.

These “ecoalleles” are common genetic variants (polymorphisms with allele frequencies of around 2% to 50%) in enzymes, receptors, transporters and transcription factors that have different activities depending on environmental factors. Some of these environmental factors include seasonal and diurnal temperature fluctuations, or the availability of calories, fat or carbohydrates, trace metals, redox, critical cofactors such as thiamine (B1), niacin (B3), riboflavin (B2), folic acid (B9), B12, lipoic acid, tetrahydrobiopterin (BH4), biotin, pantothenic acid, vitamin D, C or pyridoxine (B6), or exposure to medications, pesticides or toxins, heavy metals and other environmental contaminants.

The prevalence of ecoalleles in different populations around the world differs significantly under different climatic, dietary, infectious disease, and cultural conditions. And they are maintained over time, because at some point they imply evolutionary advantages.

Mixtures of ecoalleles produce new phenotypes and patterns of risk and resilience to diseases that represent latent traits. Latent traits revealed by exposure to specific environmental triggers: Metabolic traits are the result of real-time interaction of genes and environment.

The cell adapts to danger, with the cellular stress response, cellular danger response (CDR). Mixtures of ecoalleles and epigenetic changes that were once advantageous can become disadvantageous, when environmental conditions change over time. child development and unfavorable environmental stressors are beginning to be more frequent than “friendly” ones.

What allows survival in harsh conditions can slow reproduction or development by producing changes in gene expression that can persist beyond their usefulness. And further hinder the function of some alleles that are already disadvantageous from a metabolic and functional point of view.

When this happens in neurodevelopmental disorders, metabolic and cofactor therapies targeting ecoallele-driven phenotypes can help strengthen resilience and homeostasis, returning the cell to its “safe” state, thereby improving symptoms. behavioral, brain plasticity, and neurodevelopment.

### INTEGRATIVE APPROACHES IN NEURODEVELOPMENTAL DISORDERS

#### **Gema M. Sánchez Navarro**

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Neurodevelopmental disorders represent a broad and diverse spectrum of conditions, of multifactorial origin, that affects many people around the world. These conditions, which include autism spectrum disorder, ADHD, and learning disabilities, can present unique challenges for both patients and their families, requiring different multidisciplinary strategies and approaches.

Integrative medicine is uniquely positioned to address these challenges, as it not only focuses on treating symptoms, but seeks to understand and treat the whole person. This involves a combination of conventional and complementary, personalized therapies with the aim of optimizing health and quality of life.

Integrative medicine is based on the combination of conventional and complementary approaches to approach health holistically. In the context of neurodevelopmental disorders, this involves considering not only biological aspects, but also psychological, social, and environmental aspects

Neurodevelopmental disorders, which affect areas such as attention, memory, and executive functioning, require a holistic approach that considers multiple dimensions, so a multidisciplinary team is required with the types of integrative approaches and therapies, such as nutrition and microbiota, early sensory and cognitive stimulation, occupational therapy, acupuncture, and ozone therapy.

Recent studies underscore the efficacy of integrative interventions in improving cognitive function, social skills, and overall quality of life in children and adolescents with ODD.

Different interventions by different professionals such as nutritional needs, which address deficiencies, Ayurvedic diet and gastrointestinal health, treating the microbiota have shown significant improvements in behaviour, while sensory integration therapies address challenges in sensory processing, improving adaptive responses. Emerging evidence supports the benefits of novel therapies such as ozone therapy.

**Keywords:** neurodevelopmental disorders, integrative medicine, autism spectrum disorder, ADHD, sensory integration, nutritional therapy, complementary therapies, Ozonotherapy, patient centred care.

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Esta bibliografía proporciona una base sólida para el estudio y la práctica del abordaje integrativo en trastornos del neurodesarrollo, abarcando literatura académica, guías clínicas, y recursos en línea.

### THE MOUTH AS A GATEWAY TO HEALTH

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Close links between oral diseases and certain systemic diseases such as digestive disorders, stroke, diabetes, cardiovascular diseases, metabolic syndromes, complications during pregnancy, obesity, and Alzheimer's disease, among others, are described in many studies. (1)

Despite scientific evidence recognising the close relationship between oral health and general health, the mouth continues to be excluded from multidisciplinary professional practice today. (2)

Oral problems could have serious effects on the body through the spread of pathogenic bacteria in the blood, in the bones and by provoking a pro-inflammatory state in which systemic diseases could develop. (3)

Collaboration between healthcare professionals, including dentists, is essential for proper diagnosis and treatment of many medical conditions that directly affect oral health and vice versa. (4)

**Keywords:** oral health, odontology, wellbeing, oral diseases, systemic diseases.

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### THE SILENT ILLNESS: MANDIBULAR CAVITATIONS. SYSTEMIC ILLNESSES LINKED TO THE MOUTH

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Oral health plays a critical role in the prevention and management of systemic diseases. Recent research has unveiled new connections between low-grade inflammatory oral manifestations and cavitation morphopathological changes in the jawbones, characterized by generally asymptomatic osteolysis, associated with chronic inflammatory, degenerative and immunological diseases(1). Chronic Ischemic Medullary Disease of the Jawbone (CIMDJ)(2) is particularly characterized by chronic overexpression of the inflammatory cytokine RANTES/CCL5(3). This signaling pathway is associated with conditions such as Chronic Fatigue Syndrome, Multiple Sclerosis, Cancer, and rheumatic diseases, among others. Specific analytical tests such as ELISA and advanced technologies like Cone Beam Computed Tomography (CBCT) and Trans-Alveolar ultrasonography(TAU)(4) enable precise differential diagnosis. CIMDJ is classified based on its specific characteristics into Fatty Degenerative Osteonecrotic Jawbone (FDOJ) and Neuralgia-Inducing Cavitation Osteonecrosis (NICO)(5). The current integrative therapeutic approach to these maxillary lesions includes intravenous vitamin C therapy, surgical curettage, ozone disinfection, regeneration with platelet-rich fibrin (PRF), neural therapy (NT) for interference field regulation, low-level laser therapy (LLLT), nutritional support with nutraceuticals, and microimmunotherapy. This multidisciplinary approach not only addresses the local manifestations of the disease but also can significantly improve the quality of life of patients affected by these systemic conditions..

**Keywords:** Integrative dentistry, silent inflammation, CIMDJ, FDOJ, NICOS, RANTES/CCL5, CBCT, osteoimmunology, systemic diseases.

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### POSTURAL DESCENDING SYNDROME OF BUCCODENTAL ORIGIN

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Clinical evidence shows that buccodental troubles are very often a source of many organic and musculoskeletal (usually neck and backpains) disorders. This relationship is widely unknown or ignored by MDs, so we invite you to discover and diagnose this postural descending syndromes, learning and applying the "Meersseman's Test".

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### From West to East. A Reflective and Integrative Perspective from Family and Community Medicine.

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Kind greetings,

I am Etel CarodBenedico, a 55-year-old family physician with 27 years of professional experience. I will share with you how throughout my life journey, numerous work and personal experiences have intertwined with various disciplines and teachers from both the Western and Eastern traditions. Sometimes intentionally and with a specific purpose, and other times serendipitously. Along this path, I have encountered success, failure, and everything in between, but it has often surprised me, and it has always enriched me, I can say I have learned.

I invite you to respectfully, openly, and rigorously reflect on the possibility of integrating disciplines from very different geographical and cultural origins into the everyday healthcare practices of health professionals.

Some of these disciplines are ancient, while others are more recent; some have scientific evidence, while others have extensive experiential evidence spanning millennia. All of them continue to be implemented and are in continuous growth, development and transformation.

This is not a competition, or about determining “what”, or “who” is the best. Instead, it’s about sharing reflections that can enrich us all and help alleviate the suffering of our patients as well as our own. All of this starting from a description of events that are intertwined throughout a specific, and therefore subjective, life and personal journey.

We will reflect on medicine, nursing, yoga, meditation, bioethics, palliative care, mindfulness, compassion, public/private health, physiotherapy, osteopathy, acupuncture, neuroscience, spirituality, healthy lifestyles, and much more.

Feel free to explore these diverse perspectives and let them enrich your own journey.

Thank you very much for your attention.

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### Synapsis and sacraments, from neurons to nirvana

**Dr. Pedro Rodríguez**

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We are witnessing the convergence between neuroscience and spirituality, exploring how neural processes and sacramental rituals can shed light on spiritual experiences such as nirvana. Through a multidisciplinary analysis, this work examines brain synapses as potential mediators of elevated states of consciousness, connecting contemporary cognitive science with ancient spiritual practices. It offers a perspective that seeks to integrate scientific and spiritual knowledge to better understand the nature of human experience and states of transcendence.

The human mind, in its quest for meaning and transcendence, finds common ground between the discoveries of modern neuroscience and the spiritual interpretations of various religious and philosophical traditions. Neural plasticity and synchronization phenomena may be linked to mystical experiences and altered states of consciousness experienced during sacramental practices such as deep meditation, ritual fasting, or the controlled use of psychoactive substances.

The presentation will focus not only on the biological and neurochemical aspects of these experiences but also on how these practices can influence self-perception, empathy, and connection with the divine or transcendent. Through a detailed exploration of case studies and scientific experiments, it is observed how neuronal synapses can act as a bridge between the corporeal and the spiritual, offering a possible scientific explanation for phenomena historically considered inexplicable or supernatural.

The ethical and social impact of these investigations will be discussed, addressing the implications of neuroscientific research on the understanding of religion, spirituality, and human experience. Critical questions about personal autonomy, freedom of belief, and the ethics of research in altered states of consciousness will be explored, providing a reflective framework for the responsible integration of this knowledge into public and academic discourse.

This work reflects on the broader implications of the convergence between neuroscience and spirituality, highlighting the importance of interdisciplinary dialogue that enriches both science and spiritual practices. It promotes a deeper and more holistic understanding of human nature and its potential for transcendence and connection with the transcendent.

### Kriya yoga in emotional management in the chronic illness

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We are facing an epidemic of mental illnesses that do not appear to be alleviated by the conventional pharmacological approaches employed thus far. This may be due, in part, to the symptomatic focus of these therapies. The search for complementary therapies that address the root causes of these emotional issues is becoming imperative. In this context, mind-body therapies are gaining importance within the scientific community. However, in chronic illness, the application of such therapies is often hindered by mobility issues, time constraints, or the need for constant supervision by healthcare professionals.

In this scenario, Himalayan Kriya Yoga emerges as a technique that integrates various contemporary methods, including holotropic breathing, voluntary breath control, tapping, rubbing, EMDR, bioenergetic therapy, and acupuncture. It achieves regulation of the autonomic nervous system through the modulation of interoceptive signals in the vagal afferent pathways, myofascial activation via diverse respiratory and movement patterns that involve muscle chains and osteopathically, neuro- and embryologically-associated viscera, and the induction of altered states of consciousness through low-frequency brain waves facilitated by emotional and myofascial release during meditation. These and other physiological mechanisms contribute to enhanced mood and emotional self-regulation, highlighting the potential benefits of Kriya Yoga in contemporary therapeutic practices.

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### Colloquium: Sexuality, an integrative point of view

#### **Pere Estupinyà and Francisca Molero**

There is not a single sexuality shared in the couple, but rather it is the meeting of two complex sexualities, with their prejudices, their particular way of thinking about sexuality, their inhibitions, the history of their previous experiences, etc.

This table is a conversation about sexual health and well-being.

We will talk about associated problems and frequently asked questions.

We will also address ways to improve it and live it in an enriching way, always from a biopsychosocial approach and supported by scientific evidence and the extensive experience of the speakers.

There will be space for questions and answers with the public.

We will highlight the importance of enjoying a healthy sexuality for quality of life and well-being, how sexuality is experienced in the different stages of life, the most frequent sexual problems that affect us and how to solve them, and the myths still in force that hinder sexual enjoyment.

Perhaps the question is: Are we fully healthy if we cannot sexually? Understanding that the sexual is not limited to the genital. Sexuality is much broader than genitality.

### Acupressure and Qigong in chronic fatigue postCOVID-19 – design, methods and baseline data of the randomized controlled trial ACUQiG-study

**Joanna Dietzel**<sup>1</sup>, Theresa Bauer<sup>1</sup>, Weronika Grabowska<sup>1</sup>, Miriam Ortiz<sup>1</sup>, Stefan N. Willich<sup>1</sup>, Benno Brinkhaus<sup>1</sup>

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#### **Background and objective:**

Observational studies confirm the high incidence of postCOVID-19-syndrome (PCS) after infection with SARS-COV2, which can occur in 10-15% of all infected person. A substantial percentage of PCS patients converts into Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS).<sup>1-2</sup> The aim of this study is to investigate effects of a combined therapy of acupressure and Qigong on parameters of fatigue in patients with PCS.

#### **Methods:**

ACUQiG-study is an open, two-arm randomized controlled single center trial with mixed methods approach. The intervention group (n=100) applies a daily self-massage of selected acupressure points and follows twice weekly live online Qigong course over 8 weeks, whereas the control group (n=100) is a waiting-group. All patients continue with routine care during the whole study and receive a brochure on Traditional Complementary and Integrative Medicine (TCIM) against PCS. The primary outcome is the change in the physical function subscale from the SF-36 at week 8. Secondary outcomes at week 8 and week 16 include fatigue severity, post-exertional-malaise severity, disease-related quality of life, depressiveness, headache, sleep quality, hand grip strength, lung function, heart rate analysis during orthostasis, and neurocognitive outcomes regarding concentration and attention.

#### **Results:**

Design and methods of the RCT as well as the baseline data of patients will be presented in detail. Analysis of baseline data of the study cohort will provide insights to patterns of prescribed off-label therapies for PCS and self-medication with supplements prior to participation in the study.

#### **Conclusion:**

Results of this trial will clarify if acupressure and Qi Gong can be beneficial to patients with PCS.

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### Adrenal fatigue in cancer patient: what we need to cope

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Adrenal fatigue - a situation in which adrenal glands do not produce enough cortisol - is an underlying condition present in the majority of oncology patients who experience long lasting fatigue. This condition causes and worsens a series of symptoms such as apathy, exercise intolerance, difficulty sleeping among others.

A growing body of research is finding a direct link between cancer treatment, the disease itself and adrenal dysfunction. Adrenal fatigue in the oncological context is the result of a complex interaction between psychological, neurological, immunological, endocrine and metabolic factors that lead to chronic activation of the HPA axis and glandular exhaustion or damage.

Treatments such as chemotherapy, radiotherapy or immunotherapy can directly damage the adrenal glands or affect the HPA axis through oxidative stress. Cancer itself can cause adrenal insufficiency through indirect mechanisms such as systemic inflammation, immune dysregulation, hormonal alteration, metabolic demand and oxidative stress, in addition to the impact of exogenous corticotherapy. Directly, metastases can affect glandular tissue and, in some cases, tumor production of adrenocorticotrophic hormone-like peptides leads to depletion of the adrenal reserve.

We will explore how Integrative Medicine may be useful in the management of this condition along with conventional treatment regulating pathophysiological factors, improving symptoms and patients' quality of life.

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### Advances in fasting therapy- new mechanisms of an old method

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**Background:** Fasting has a long-standing history in medicine, but not until recently it has come into the focus of experimental and translational sciences, broadening the spectrum of traditional clinical applications.

**Objective:** An update of the latest scientific findings on fasting, portraying the interplay between experimental findings and therapeutic implementation.

**Results:** Fasting had been declared contraindicated in oncological diseases for decades, when animal experiments showed its potential as a supportive treatment during chemotherapy. As experimental and translational research progressed, it paved the way for clinical studies in this context. Lately fasting as an adjunct treatment has been included in oral and poster presentations of oncological conferences around the globe. Another example of how the interdisciplinarity of fasting research has benefited its medical utilization are the experiments on the chronobiological effects of food intake, having led to a surge in clinical research on intermittent fasting.

**Conclusion:** In the field of fasting much has been learned regarding interdisciplinary research. This could potentially also benefit other fields of integrative medicine.

### INTERMITTENT AND THERAPEUTIC INTERMITTENT FASTING

**Prof. Susagna Muns**

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We are living in the world of media globalization with a no specific regulation of its contents, this means that we can access a lot of information but we can't often discern what is valuable information from what I call "infointoxication".

This is what happens with intermittent fasting (IF), there is a confusion between the application of IF as a healthy lifestyle and IF as a therapeutic tool. The approach of both is the same, the restriction of food intake at specific intervals, but the goal and its applications are different.

This presentation will provide you a good understanding of the type of IF that exists as a healthy lifestyle and its intended objectives and how the therapeutic IF is a more structured fasting, it has to be supervised by health professionals, for what type of pathologies it is indicated, its side effects and how to deal with them, as well as the difference in results between men and women.

It is also important to explain when an autophagy process is actually entered into and if there is scientific evidence that support it, as well as if there are clinical studies that can support its therapeutic application.

Weekly examples of different therapeutic IF will be presented, understanding the concept and in which specific cases the existence of supervised medical control is necessary.

In conclusion, although both methods share the same principle of alternating fasting periods with feeding periods, therapeutic IF has a personalized clinical approach adapted to the patient's health status and in many cases the supervision of not only a specialized nutritionist but also a doctor is absolutely necessary.

### Can we increase metabolic flexibility in type 1 diabetes by fasting?

**Dr. Bettina Berger**

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Type 1 diabetes (t1d) appears to be on the rise, and with it the burden across several outcomes including health status, productivity, activity, and use of healthcare resources. The complex nature of diabetes itself, fluctuations in blood glucose and the fear of long-term complications contribute to a high level of diabetes-specific distress. People with t1d are inherently exposed to an elevated risk of developing psychological and neurological long-term consequences such as depression and cognitive decline, macrovascular and microvascular comorbidities, and even double diabetes, the appearance of both types of diabetes (type 1 and type 2). Given the increasing overweight (also in combination with diabetes), complementary, especially nutritional therapies are gaining importance, besides pharmaceutical interventions.

Metabolic flexibility describes the ability of an organism to respond or adapt according to changes in metabolic or energy demand as well as the prevailing conditions or activity.

**Methods:** We will give an overview of arguments using current evidence of fasting research and qualitative data of patients for the use of metabolic flexibility as an outcome in further fasting research.

**Results:** This broad concept of metabolic flexibility has been propagated to explain insulin resistance and mechanisms governing fuel selection between glucose and fatty acids, highlighting the metabolic inflexibility of obesity and type 2 diabetes. Several metabolic endpoints can be improved by fasting, even in t1d. Using daily blood sugar and ketone body control, fasting can be shown as a safe intervention with the potential to increase insulin sensitivity, to lower body weight, and to improve body composition.

Patients with t1d report the new ability and the self-confidence to decide about meals or to stay without meals for several hours or days. They felt encouraged and enabled to work on their own health after experiencing fasting as a multimodal intervention (Buchinger fasting program including psychoeducation, movement and meditation).

**Discussion:** It might be useful to establish metabolic flexibility as a relevant endpoint in further fasting research and to continue this research to develop programs for secondary prevention in t1d using these and other complementary approaches.

### Pills of Integrative AI

#### **Alfredo Vellido**

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At this point in time, few will not be aware of the fact that Artificial Intelligence (AI) has become an epoch-defining technology. And few will not be aware of the many arguments put forward concerning its massive potential in the field of medicine and in healthcare at large, mostly in the guise of variants of Machine Learning (ML). A reason for not being aware of this might well be a reluctance to accept blatant publicity as knowledge. A very simple fact must be kept in mind: right now, the lion's share of state-of-the-art developments in the field belongs to large IT-based companies and for-profit organizations.

Different domains of healthcare can be seen as a sizeable source of profits.

But this might fairly be dismissed as a too cynical viewpoint, given that AI/ML has made specific direct and indirect breakthroughs in the field that cannot be dismissed, and which open new avenues of medical research and practice. Think, for instance, of the impact of Google DeepMind's AlphaFold on, amongst other areas, drug design [1]. Under the bonnet of AlphaFold, we can find novel algorithms that are also at the heart of the groundbreaking Large Language Models (LLMs). Arguing that LLMs can have a big impact on medical practice is not at all far-fetched [2].

These two viewpoints might be reconciled, but only if we address several non-trivial issues seriously, including the design and development of data-centered perspectives that are relevant to healthcare services, the correct integration of IA in medical devices and, related to all this, a careful assessment of IA compliance with regulation, from the individual medical center to the international law [3].

How is this relevant to Integrative Medicine (IM) practitioners? Probably in the same manner that is relevant to practitioners of any other medical discipline: in the sense that we should not let the AI lights blind us to the fact that the core concerns have to do with data management and its myriad issues, and in the sense that IM problems should guide the way we use AI and not the other way around.

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### The power of Integrating traditional diagnostic methods with modern science

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Diagnostics in traditional medicine encompass various sensory-based observations, such as iridology in naturopathy, tongue and pulse diagnosis in Traditional Chinese Medicine (TCM), and olfactory assessments in Ancient Greek medicine. These techniques, honed over centuries, hold significant value within their respective medical traditions. However, mastering these methods typically requires years of apprenticeship, resulting in a shortage of practitioners with the diagnostic prowess of their ancient counterparts. Moreover, contemporary research highlights substantial variability in the results produced by these techniques, both between different observers and from the same observer at different times.

Integrative research aims to combine the wisdom of ancient medicinal practices with modern scientific advancements to promote health innovations. Utilizing artificial intelligence (AI) to enhance the precision of traditional diagnostic methods offers a promising opportunity from both conventional and complementary medicine perspectives.

A prime example is tongue diagnosis in TCM, which interprets various aspects of the tongue—such as color, surface texture, and coating—as indicators of a patient’s overall health. Recent attempts to leverage image analysis and AI to diagnose diseases through tongue characteristics, including diabetes, gastric and esophageal cancer, and endometriosis, have been limited in scope, yielded inconclusive results, and lacked follow-up.

Jubaan, an innovative start-up, aims to synergize traditional tongue diagnosis with precision medicine using AI and spectral imaging technology. This cutting-edge system detects subtleties beyond human observation, such as identifying colonic polyps (pre-cancerous lesions) with a remarkable 90% sensitivity rate—surpassing existing prescreening tests like FOBT/FIT. In my upcoming presentations, I will explore the entrepreneurial journey that led to the creation of Jubaan, offering insights relevant to practitioners in Complementary and Alternative Medicine (CAM) and Integrative Medicine. Additionally, I will discuss the promising results from our comprehensive trial involving 15,000 patients screened using the Jubaan system before undergoing colonoscopy, highlighting the potential of this innovative approach to significantly impact patient care.

### Immersive Healing: The Role of Virtual Reality in Complementary and Integrative Medicine

**Jose Ferrer Costa MD** <sup>(1)\*</sup>

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As integrative medicine continues to evolve, Virtual Reality (VR) stands out as a crucial tool that merges traditional healing practices with advanced technological solutions, thereby enhancing patient care and educational outcomes. Dr. José Ferrer Costa will explore the transformative role of VR in complementary and integrative medicine, emphasizing its capacity to enhance therapeutic processes and promote holistic health.

This presentation will explore the application of VR technologies in medical treatments and health promotion, drawing from Dr. Ferrer's extensive experience in employing VR in clinical and research settings. A significant focus will be on the use of VR to augment the therapeutic experiences in acupuncture, where VR augments the therapeutic experience, enhancing patient relaxation and engagement through immersive environments.

Dr. Ferrer will discuss recent advancements in VR applications, providing insights into the scientific support for VR in healthcare, the progression of VR technologies, and practical examples from ongoing projects at Badalona Serveis Assistencials. These examples will showcase the efficacy of VR in reducing perceptions of pain, aiding in the educational aspects of patient care, and fostering an immersive, multisensory approach that aligns with the principles of holistic and integrative health practices.

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### Adopting The ASCO-SIO model for establishing integrative guidelines: Is it time in Europe?

#### **Eran Ben-Arye MD**

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Integrative oncology (IO) programs across the globe are increasingly becoming part of supportive and palliative care, with many of these programs working in collaboration with the Society for Integrative Oncology (SIO). Over the last five years the SIO has significantly expanded its activities across the globe, with an initiative led by the SIO Global Taskforce/Committee and the Ambassador Program, including a regional SIO Ambassador to Europe and the Middle East and SIO Ambassadors to the UK, Italy, Greece, and Cyprus. The IO activities in Europe include important clinical and basic science research projects, as well as programs in medical education. European IO projects involve national organizations (e.g., Associazione Ricerca Terapie Oncologiche Integrate, ARTOI; and the British SIO, BSIO); with collaborative clinical research taking place in Toscana (Italy) and the Competence Network on Integrative medicine (KIM, in Baden-Württemberg, Germany). Other projects involve academic centers of excellence in Israel, Germany, Italy, Norway, and the Middle East (Middle East Research Group in Integrative oncology). Many in the IO leadership in Europe are affiliated with the SIO, while others are organized in their own professional societies (e.g., Multinational Association of Supportive Care in Cancer, MASCC; International Federation of Anthroposophic Medical Associations, IVAA) and in leading academic centers.

In this session, we will explore the activities of SIO Europe, whose goal will be to facilitate and coordinate collaboration with the SIO, as well as launching regional medical education and research initiatives in 'Greater Europe': from the UK, throughout the continent, to the Middle East and the Mediterranean.

### A NEW PATHOPHYSIOLOGY, FROM FRAGMENTATION TO GLOBALITY

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Integrative health and medicine represents not only a new work model in the field of Medicine. It is the recovery of the roots.

Hippocratic with a global and holistic vision, and a response to the challenges that are already present: the population aging of broad layers of the population and the epidemiological change that takes us from acute pathologies to chronicity and disability.

Many challenges of a not only medical, social, economic and political nature surround us, such as imbalances and inequalities and the climate crisis.

One of the many elements that build this practice is supported by a globalized vision of the human being, of the exquisite interrelationships between systems, organs, which means addressing a reality that is per se ultra-complex.

We can say that with MI, medicine is based within the sciences of complexity.

### Evidence maps on the clinical effectiveness of Traditional, Complementary and Integrative Medicine: Brazilian experience to promote public policies informed by evidence

**Ricardo Ghelman**<sup>1,2,4</sup>, Mariana Cabral Schweitzer<sup>1,3</sup>, Caio Fábio Schlechta Portella<sup>1,4</sup>, Verônica Abdala<sup>5</sup>, Joao Paulo Souza<sup>4,5</sup>

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Introduction: Following a request from the Brazilian Ministry of Health in 2019 for the systematization of evidence in Traditional, Complementary and Integrative Medicines (TCIM) to support the implementation of the National Policy on Integrative Practices, the BIREME Virtual Health Library in TCIM (VHL TCIM/ PAHO/WHO) and the Brazilian Academic Consortium for Integrative Health (CABSIN), launched in 2018, joined forces to develop a series of evidence maps. Method: Evidence maps based on the International Initiative for Impact Evaluation - 3iE, including systematic reviews and evaluating the effect of specific complementary interventions on various clinical outcomes, as well as assessing the quality of studies. To select the included studies, peer review of the s was used by researchers using the Rayan platform. The AMSTAR2 tool was used to classify the level of confidence in the reported evidence. Result: 26 Evidence Maps were developed from 2,138 Systematic Reviews, including around 460 specific Interventions with 320 Outcomes. The main outcomes were Mental health, Hypertension, Pain, Cancer, Diabetes and Quality of Life, and around 75% of the effect were positive and potentially positive. The main interventions in terms of number of systematic reviews (SR) were medicinal plants, with 554 SR grouped into 6 maps, with an emphasis on 194 studies in the medicinal Cannabis map. Secondly, 5 maps dedicated to Traditional Chinese Medicine grouping 468 SR, of which 175 in acupuncture, 164 in mind and body practices, 38 in auriculotherapy, 27 in cupping therapy and 64 in moxibustion. Other important maps with more than 100 reviews refer to Meditation with 191 SR, Aromatherapy/Essential Oils with 183 and Yoga with 150 SR. Interventions with a positive effect and high level of confidence in the Chronic Pain Evidence Map with 157 systematic reviews were included in the Sao Paulo Health Department's chronic pain treatment guidelines as public policy. Yoga, medicinal plants and acupuncture stood out. Among the plants, *Curcuma longa*, *Harpagophytum procumbens* and *Tanacetum parthenium* stood out. The most frequent findings of clinical outcomes were: treatment of low back pain, pain relief and osteoarthritis. Further research, especially with a higher level of confidence, is needed to strengthen the evidence base and provide more definitive conclusions on the effectiveness of TCIM for specific health outcomes.

**Keywords:** Integrative Medicine, Evidence map, Health outcomes, Systematic review

### **Neuroplasticity, Emotional Intelligence and Art Therapy. The transformative power of the creative process.**

**Eva Espinosa**

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Since the 18th century, Art Therapy has been in the spotlight and considered a tool that allows human trauma to be treated through the creative process which permeates the individual at different levels. It is in the 20th century that professionals in the subject matter prove the neural impact produced by creativity, its positive influence from a cognitive perspective, generating one's own individual emotional literacy and the importance of a deep analysis of the individual and the subconscious so as to reclaim the process of individuation of the patient to be treated.

The objective of this presentation is to propose a progressive approach towards Art Therapy as an analytical therapeutic instrument. A brief introduction is presented in general terms and we get on from the surface to observe from a neuroscientific point of view how the creative process has a great impact on neuroplasticity. Finally, we delve into the most essential pillars that Analytical Art Therapy treats. From the construction of a triangular relationship with the work and the analysand, the difference between sign and symptom, the importance of subjectivity to neurosis as a necessary sign in our times.

Statistics support the effectiveness of Art Therapy and the results obtained that are presented are practical cases treated and carried out both in individual and group workshops in different areas of society, especially in educational centers.

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### MUSIC THERAPY APPROACHES IN THE FIELD OF INTELLECTUAL DISABILITY

#### **Xevi Compte**

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The music therapy process involves an initial assessment in which specific objectives are established and the types of approaches to be used are determined. Subsequently, music therapy sessions are conducted, and the results are evaluated. Within this context, there are two main approaches: creative music therapy and receptive music therapy, both with the common goal of providing well-being to the person. Creative music therapy aims primarily to create new channels of communication through musical improvisation. This approach stimulates active participation, interaction among participants, and musical communion, allowing individuals to express themselves freely and spontaneously. On the other hand, receptive music therapy seeks to induce the person into a state of deep relaxation and mental calm. This goal is mainly achieved through the use of Tibetan bowls selected for their specific tones and the use of the voice, creating a sound environment that promotes tranquility and emotional well-being. Both approaches, although different in their methodology, complement the music therapy process, offering various ways to improve the mental and emotional health of the participants.

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### Peace of Mind: The Role of IM in a War Crisis

**Gali Stoffman**, MD

In recent years, Complementary and Integrative medicine (CIM) has played a significant role in societies undergoing trauma.

Various CIM methods have shown to be highly effective in pain management, neuropathy, sleep imbalances and symptoms of Acute Stress Disorder (ASD) and Post-Traumatic Stress Disorder (PTSD), including physical tension, anxiety, mood instability and various related somatic and hyper-arousal symptoms.

In Ukraine, various systems of CIM are used, in order to assist in the treatment of civilians and military veterans. One such initiative is the Ukraine Wellness Project (UWP), a US funded volunteer project that aims to incorporate acupuncture in rehabilitation processes for Ukrainian soldiers and veterans. Another is the AWB (Acupuncturists Without Borders).

In Israel, following the 2023 Hamas-Israeli conflict, CIM therapists all over the country volunteered, some in organized integrative treatment centers, to support civilians directly or indirectly afflicted by the war.

The effect of such CIM based initiatives has been so significant, that national institutions have acknowledged their impact. For instance, the Israeli Ministry of Health and the Social Security Service have begun to financially support such activities, which are not part of the national health insurance.

In the lecture I will provide a world-wide perspective on the role Integrative Medicine can play in a society undergoing traumatic events: epidemics (i.e COVID-19), natural disasters and war.

I will review various integrative programs and initiatives that evolved in response to such events internationally, including initiatives of AWB (Acupuncturists Without Borders) and others.

Finally, I will share results of a multi-center study we performed in three hospitals, which assessed the impact of CIM treatments provided to hospital staff of multi-religion background experiencing stress and secondary traumatization, during war, exemplifying the crucial role of CIM in such institutions.

### ACUPUNCTURE FOR THE WORD, ACUPUNCTURE WITHOUT BORDERS, INTEGRATIVE MEDICINE TO PEACE THE WORLD

**Isabel Giralt** <sup>(1)\*</sup>, Daniel Ménè <sup>(2)</sup>, Pep Armengol <sup>(3)</sup>, Maite Fuertes <sup>(4)</sup>, Betina Nishishinya <sup>(5)</sup>, Carles Prats <sup>(6)</sup>, Anna Dalmau <sup>(7)</sup>, Rebeca Cadenas <sup>(8)</sup>, Cristina Domingo <sup>(9)</sup>

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Bringing Integrative Medicine to territories or spaces where poverty and conflict are predominant is a way to pacify the world.

Furthermore, Integrative Medicine and also Acupuncture, are rarely part of national health services, if such a service exists, and so only the middle and upper class of society could have access to them.

In this presentation we will explain how our association **Acupuncture for the World** <sup>(1)</sup>, autonomous but affiliated to the international association, **Acupuncture sans Frontières**, has worked in different developing countries (Bolivia, India north, India South, Cambodia and most recently in Cuba) giving classes to healthcare professionals so that they can offer acupuncture treatments to people with few resources.

Acupuncture for the world is also treating homeless people in Barcelona and Santiago de Compostela through the Institutions that care for them.

In this presentation we will explain how we do it and the results we have obtained.

Treating people and territories without resources with Integrative Medicine and Acupuncture gives much more health and happiness than starting conflicts and wars, not only for patients but also for the health professionals who, in this way, can make a difference in this world.

<https://acupunturaparaelmundo.org/en/>

<https://www.acupuncture-sfi.org/en/>

### **A custom tailored, evidence-based, theory-informed intervention for healthcare professionals to prevent burnout (LAGOM): study protocol for a pragmatic randomized controlled trial**

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#### **Background:**

Healthcare professionals in hospitals are exposed to a high level of professional stress, time pressure, workload and oftentimes poor organizational support. This makes them especially susceptible to burnout. In this pragmatic randomized controlled trial, we test the hypothesis that participation in a 9-week program (LAGOM), that was designed in close collaboration with healthcare professionals, incorporating both individual and organizational aspects reduces emotional exhaustion in healthcare professionals (primary outcome).

#### **Methods:**

84 healthcare professionals working at the Charité – Universitätsmedizin Berlin and the Immanuel Hospital Berlin are automatically randomized to the LAGOM program ( $n = 42$ ) or to usual care ( $n = 42$ ) in a one-to-one allocation rate. The primary outcome emotional exhaustion is measured by the Maslach Burnout Inventory - Human Services Survey at baseline, post-intervention, and 1-month follow-up via an online survey. Secondary outcomes include depersonalization, personal accomplishment, subjective stress, mental well-being, self-care, self-efficacy, working conditions, mindfulness, and adverse events. Electrophysiological measures for heart rate variation analysis are captured. The PRECIS-2 tool is used to characterize the degree of pragmatism in our trial. Data analysis and primary intention-to-treat analysis using repeated measures analysis of variance are performed blind to intervention allocation. Per-protocol, subgroup and secondary outcome analyses are conducted exploratively. An advisory board consisting of various stakeholders accompanies the study process.

#### **Discussion:**

If LAGOM proves to be effective in reducing symptoms of burnout, the program could make an important contribution to tackling the problem of the very high burnout rates among healthcare professionals and become an integral part of preventive services offered by hospitals.

**Trial registration:** German Clinical Trials Register, DRKS00034060, Registered 31 May 2024, <https://drks.de/search/de/trial/DRKS00034060>

**Funding:** This protocol is part of a project funded by a German health insurance company (Techniker Krankenkasse) on burnout prevention among healthcare professionals at Charité – Universitätsmedizin Berlin. The funder has no influence on the contents and results of the present work.

### Living through sharing and sustainability

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Housing has a direct impact on people's physical and mental health. By evaluating different factors, it is possible to establish the relationship that exists in the housing-health binomial. The relevant aspects to consider in this assessment would be: affordability, housing security according to tenure regime, quality of home spaces, condition of housing materials, emotional links, along with social environment and urban context. If each one of the listed points were evaluated positively, housing would have a more than favorable impact on the residents' health.

Adopting the view that health is a state of complete physical, mental and social well-being, it is considered that the housing-health relationship should be approached from a broader interdisciplinary perspective, since it does not depend solely on the medical care sector. Aspects such as **intentionally belonging to a community, living in healthy and sustainable buildings, enjoying common spaces, along with sharing services and mutual support**, should be included in the assessment of health and well being.

This is why **alternative ways of living** based on the **cooperative housing model** are being explored, because its formula achieves the much desired goal of well-being. This model of cooperative housing is characterized by the **collective ownership and self-management** of the residential complex. In exchange, an initial contribution is made by each member that is returnable, and a monthly fee that is paid for the **right to use the home for life** at a cost below market prices. This housing and living model is constituted by a **reduced number of private housing units, in addition to some shared community spaces**. The architectural features and physical layout of these projects are specifically designed to promote resident interaction, resulting in an improved quality of life and guaranteeing an economic and residential stability in a long term project. All of this results in greater interaction, broader social support, active aging, hence reducing social isolation.

These cooperative housing projects generate strong emotional and social ties where members participate democratically in decisions and they experience a high sense of belonging to the group. The architectural project is custom made, and it is designed to meet the needs of the group that promotes it. Common engagement, solidarity, and care are encouraged, promoting cohesion among residents.

Housing and its impact on social relations need to gain a broader status in the advancement of health and well-being than its already recognized condition as a Fundamental Human Right.

### STUDY OF THE RELATION BETWEEN NATURAL GEOMAGNETIC FIELD AND CONSTRUCTION MATERIALS: SD7 PROTOTYPE

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The architect's perspective on environmental quality, comfort and health in a sustainable context, is extended when considering radiation as a factor to take into account in the architectural design. Also, in addition to hygrothermal comfort and air quality, electromagnetic comfort can be considered in a site. This work relates the magnitude of the magnetic field with various construction materials, using a geo-magnetometer.

It is proven that construction materials have the ability to change the natural geomagnetic field on which life develops. Our conclusion is that the consideration of the relationship between the magnitude of the geomagnetic field and the construction materials may become part of the criteria for material selection towards a healthy and sustainable architecture

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### Influence of Feng Shui on health and well-being: practical applications

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Feng Shui is an ancient discipline that combines art and science, integrating knowledge of geology, astrology, architecture, Taoist philosophy and traditional Chinese medicine. Its main purpose is to achieve harmony and balance between people and their environment through an adequate arrangement of spaces and the elements that make them up.

Deeply rooted in the Taoist concepts of balance and energy flow, Feng Shui has gained increasing relevance in modern Western architecture, and is commonly found as an elective subject in academic Architecture programs in numerous universities around the world.

This presentation analyzes the beneficial effects of Feng Shui on people's physical and emotional health, highlighting its practical application in key spaces such as the home, especially in the bedroom, and in the workplace.

The integration of this ancient Eastern wisdom into contemporary Western environments not only facilitates the creation of healthy and harmonious spaces for human well-being, but also promotes the importance of respecting nature and the environment.

## Efficacy and safety of greenspace interventions on mental disorders-a systematic review and meta-analysis

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**Background:** Natural environments can have beneficial effects on human mental health, yet a systematic assessment of the effects of greenspaces on mental disorders is lacking. This systematic review and meta-analysis aimed to assess the impact of greenspace interventions on the health outcomes of patients with mental disorders .

**Methods:** In this systematic review and meta-analysis, we searched MEDLINE, Embase, PsycINFO and Cochrane Central Register of Controlled Trials databases through October 23<sup>rd</sup>, 2023. Randomized controlled trials (RCTs) of greenspace interventions targeting clinically diagnosed mental disorders were included, provided they reported patient-relevant outcomes. Data extraction and risk of bias assessment were independently conducted by at least two reviewers, utilizing the Cochrane Risk of Bias Tool (version 1). Information on adverse events was also collected. Summary data from published reports were used for random-effects meta-analyses. Details of the greenspace interventions were documented using the Template for Intervention Description and Replication (TIDieR) Checklist. The review is registered with PROSPERO (CRD42023452769).

**Findings:** Out of the 2461 records screened, 18 publications of 17 RCT were eligible. These 17 trials included 948 patients, 583 (62%) were female and 364 (38%) were male. One patient identified as “other”. The mental disorders studied were: substance abuse disorder, depression, adjustment disorder, post-traumatic stress disorder, schizophrenia, dementia, attention deficit hyperactivity disorder, or a combination of mental health diagnoses. Most interventions used either horticulture therapy or nature therapy. Eight studies were eligible for quantitative data syntheses. For all indications, meta-analyses revealed a significant effect of greenspace interventions on depression (post-intervention values standardized mean difference (MD) -0.43,  $p = .03$ , 95% confidence interval (CI) [-0.81 to -0.05]) and positive affect (post-intervention values MD -1.70,  $p < .001$ , 95% CI [-2.66 to -0.74]). Among patients diagnosed with schizophrenia, greenspace interventions had a significant effect on positive affect (post-intervention values MD -1.75,  $p < .001$ , 95% CI [-2.73 to -0.77]), negative affect (post-intervention values MD -1.39,  $p = .01$ , 95% CI [-2.38 to -0.40]), and general psychopathology (post-intervention values MD -1.21,  $p < .001$ , 95% CI [-1.90 to -0.53]). As most studies were categorized as unclear or high risk of bias, no sensitivity analyses could be performed. Adverse events have not been reported, heterogeneity differed between analyses and

prediction intervals crossed zero.

**Interpretation:** Greenspace interventions have the potential to meaningfully enhance non-pharmacological treatment options for mental disorders. This is particularly valuable given the increasing therapeutic demand and because, greenspace interventions offer a holistic, scalable, easily implementable and cost-effective approach to meet the diverse needs of mentally ill individuals. Moreover, in the context of a rapidly changing climate, greenspaces play a crucial role in promoting mental health. They can act as buffers against stress and health emergencies emerging from urban environments. This importance extends far beyond the scope of this submission, highlighting the broader relevance of greenspaces in mitigating the impacts of climate change on mental well-being. To fully harness the benefits of greenspaces and incorporate them into medical guidelines, rigorous studies are essential. Understanding and cultivating the positive impacts of greenspaces will not only strengthen the evidence but also ensure that these natural environments are effectively utilized to improve mental health and mitigate stress, especially in the face of the current context of a rapidly changing climate.

### OUR EXPERIENCE AND INNOVATIONS IN INTEGRATIVE GYNECOLOGY

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First, we will discuss the latest developments that we have implemented in the Integrative Gynecology Unit of our Quirón Olympia Hospital, so, I will explain how we monitor patients with breast cancer who are receiving treatments prior to surgery and after surgery.

I will also discuss our experience in the administration of ozone therapy in patients with multiple myomectomies with uterine reconstruction which was done to improve pain and reduce inflammation.

We will also discuss patients with chronic cervicitis and deep endometriosis who received ozone therapy to improve the quality of life.

Our focus will be on improving the health of patients with advanced gynecological problems.

### Is There a Phenotype of Premenstrual Dysphoric Disorder (PMDD) related to Uterine Inflammation? The Uterus-Brain Axis: The Missing Link

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For a long time, we have been describing the gut-brain axis as the origin of numerous chronic organic and psychiatric pathologies. Could inflammatory/infectious processes in the uterus lead to psychiatric, physical, and cognitive symptoms during the luteal phase of the menstrual cycle?(1) were collected for study. A subset of 148 patients (mean:  $36.7 \pm 7.8$  years, range: 20.1 - 53.8 years)(2) (3) Is there a phenotype of severe premenstrual disorder and premenstrual dysphoric disorder related to immunoinflammatory and even autoimmune mechanisms of the reproductive system mediated by sex hormones?

A gender bias in the study of women genital diseases has limited progress in understanding this field. Even when studies exist, they tend to focus on reproductive aspects, neglecting sexuality and other areas of women health, such as cognition, mental health, or pain.

It was not until a few years ago that a microbiota specific to the endometrium was recognized. Until then, it was considered a "sterile" cavity.

The study of the immune system of the uterus is also delayed about the digestive tract: immunity in women has cyclical characteristics, a necessary property for ensuring conception.

The recently described **uterus-chemokine-brain axis** is an integrated explanatory model that links clinical observations with new biomarkers. It highlights how local uterine inflammation, translated into endometrial production of chemokines (chemotactic cytokines) throughout the cycle, is behind the symptoms associated with menstruation (MAS) (4)The increased release of chemokines from the uterus creates an environment of heightened sensitivity to pain and neuroinflammation, which is responsible for the psychiatric and cognitive symptoms reported by women, especially during the ovulatory and luteal phases of the cycle.

We propose a new perspective on the reproductive system as an independent system with characteristics that require a differential approach while connected to the gut-brain axis and other systems.

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### Rediscovering menopause: Myths and realities in treatment with bioidentical hormones

#### **Natalia Gennaro**

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Although menopause is a natural event in women's lives, it has many consequences in women's health and quality of life. Due to lack of knowledge, it has been the subject of myths and confusion for many years. However, in recent decades, science has made significant progress in understanding this stage, especially in relation to chronic diseases that disproportionately affect women, such as osteoporosis, osteoarthritis, dementia, and cardiovascular problems.

Although women in Spain have a higher life expectancy than men, they face a lower quality of life, with an increase in ailments that worsen after menopause, with a notable deterioration of physical and mental functions in some cases which highlight the need for a proactive approach to managing women's health.

A crucial aspect is the use of bioidentical hormones, molecules identical to human hormones that can offer significant benefits. Bioidentical hormone therapy, along with a healthy lifestyle has been shown to be effective in improving women's quality of life and slowing down aging.

It is essential to identify misconceptions about hormones and understand their role in women's health. Science continues to advance, and it is vital that doctors stay up to date, that women stay informed and that we all seek the appropriate treatments to face this stage of life with confidence and well-being.

**ORAL  
COMMUNICATIONS**

### Evaluation of Non-Pharmacological Treatment Efficacy for Acute Pain using Battlefield Acupuncture (BFA) among Inpatients in Internal Medicine and Orthopedics: A Randomized Double-Blinded Study

Shira Ginsberg, Samuel Attias, Nadav Weijel, Sagi Gavrieli, Elad Schiff

**Background** Pain presents a formidable challenge globally, particularly amidst concerns over opioid usage. While guidelines advocate for non-pharmacological interventions, physicians often lack accessible options. Battlefield Acupuncture (BFA), involving the insertion of five needles in the ear, emerges as a promising treatment modality. Despite limited studies, BFA shows potential for pain relief due to its simplicity and cost-effectiveness. However, rigorous research, including sham-controlled trials, is necessary to validate its efficacy and broaden its clinical applications.

**Methods** We conducted a randomized, double-blinded interventional trial involving 60 patients hospitalized in the internal medicine (N=40) and orthopedic surgery (N=20) departments. Participants were randomized into two groups, one receiving BFA with semi-gold permanent needles at specific ear points, and the other receiving sham adhesive tapes alongside standard pain-relieving medications. BFA was conducted by acupuncturists, and sham taping was provided by residents who underwent specific training of the procedure, believing it is an effective treatment. The primary outcome variable was the change at 48 hours from baseline in symptom severity, measured by the Visual Analogue Scale (VAS) for pain, and the Edmonton Symptom Assessment Scale (ESAS) for function, sleep, anxiety, and mood. Patients and practitioners were asked to report any adverse effects associated with treatments.

**Results** Baseline characteristics, including VAS (pain) and ESAS scores, were similar between the BFA (N=30) and S (N=30) groups. At 48 hours post-treatment, the BFA group showed significantly better outcomes compared to the sham group:  $1.59 \pm 2.61$  point lower VAS pain score ( $p=0.004$ ),  $1.80 \pm 2.50$  point improvement in ESAS function score ( $p=0.001$ ),  $1 \pm 2.51$  point improvement in ESAS sleep score ( $p=0.005$ ) and  $1.65 \pm 3.21$  point improvement in ESAS stress score ( $p=0.005$ ).

**Conclusion** Our study underscores the potential of Battlefield Acupuncture as a non-pharmacological intervention for managing acute pain in the internal and orthopedic medicine department. These findings advocate for further investigation and incorporation of BFA into clinical practice, offering a cost-effective and potentially impactful strategy for pain relief.

### Effects of forest stays compared to simulated forest on wellbeing and stress perception of highly sensitive persons – a randomized controlled trial in cross-over design

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**Background:** Highly sensitive persons have a subtle perception that may lead to more intense feelings and more emotional excitability. Forest stays resulted in increased wellbeing and stress reduction in this population in a controlled study, but it is unclear whether the effect of forest relates to the stay in nature or can be simulated by mimicking forest like sensory input.

**Methods:** We conducted a monocentric, randomized, controlled pilot study using a cross-over design. Persons with high sensitivity defined by a score in the validated SV-12 questionnaire >18 were randomly assigned to a 40 min stay in the forest or a 40 min stay in a room where they viewed the same forest with a 360° goggle, smelled essential forest oils and listened to forest sounds recorded in the same forest (birds, wind, rustling of leaves). After a washout-phase of one week, they obtained the contrary intervention. Primary outcome was the CSP-14 score, which assesses changes in body sensation, emotional and mental state. BBS (a 16 item mood questionnaire), STAI-S (a questionnaire with 20 questions on current positive or negative feelings), pulse rate and blood pressure were secondary endpoints.

**Results:** 40 persons were analyzed intention to treat according to our sample size planning. CSP-14 total score and subscores (balance, integration, vitality) were all significantly better (<0.001) with true forest stays with a high effect size (Cohen`s d >1). In addition, most BBS and STAI-E scores were better with true forest stays. Pulse rate was higher in the forest, blood pressure was not different.

**Conclusions:** In highly sensitive persons, a stay in true forest improved well-being and reduced stress significantly more than a simulated forest.

### LPS and Chronic Disease, How Dysbiosis Fans The Flame of Inflammation

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**Background and objective:** Lipopolysaccharides or LPS is a powerful metabolic endotoxin. It is discussed that many changes that create risk factors for cardiovascular disease are mediated by LPS. LPS is associated with an increased production of lipids, and increased oxidation of lipids as well as damaging to the endothelium as well as cardiac tissue. LPS also crosses the blood brain barrier and can result in cognitive decline as well as depression. LPS is a player in provoking an inflammatory response that is at play in many chronic conditions. We will examine the ability to measure LPS and LPS IgM, IgG and IgA as they pertain to clinical pathology. LPS can be an underlying gut-based risk factor many chronic diseases.

**Method:** Patients were selected based on high LPS IgM, IgG or IgA. This was correlated with elevations in lipids such as cholesterol, LDL, HDL and triglycerides. CRP and homocysteine were also measured. Stool testing was also performed to corroborate presence of LPS producing bacteria. Elevations in markers are correlated with symptoms and diagnosis.

**Results:** Elevations in LPS are correlated with increases in lipids. Those with elevations of LPS also had an increased risk of heart disease.

**Conclusion:** LPS is a relevant marker in cardiovascular disease-causing inflammation that drives pathology. Measurements looking at LPS immune activation help to predict at risk groups and improve understanding of gut-based inflammation as it relates to cardiovascular disease and chronic inflammation.

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### An Immunological Dance, How Our Immune System Reacts to Foods

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**Background and objective:** Food allergies and sensitivities continue to be on the rise at rates that are too fast to be explained by genetic drift. While much is elucidated about allergies and certain symptoms that are provoked, less is understood about IgG and symptoms that result from increased IgG titers to foods. Research shows that food specific IgG antibodies may in and of themselves be pathogenic, and they indicate probable permeability with the gut. However, concern has been raised over subtyping of IgG and which is most appropriate to gauge clinical pathology. Here, we examine the prevalence of different types of IgG antibodies and how they related to pathology. We will also look at reactions and improvement in symptoms when patients remove foods from their diet based on not just IgE but particular subtypes of IgG and complement.

**Method:** Case studies are evaluated in which patients are selected that have higher levels of IgG subtype I-III and remove foods that provoke a reaction from their diet for an intervention period of 12 weeks. IgG subtype IV is measured independently to gauge tolerance to IgE reactions in patients being evaluated. Review of interventions around decreasing gut-based permeability including shifting the microbiome, improving sIgA, and overall reducing dysbiosis will be considered factors that may additionally contribute to food allergy and sensitivity. A review of current literature as it applies to food sensitivity testing and its validity will also be examined.

**Results:** Patient data shows that people who have higher levels of IgG have more aggressive gut-based symptoms including IBS, Crohn's and Colitis. Food removal is an effective strategy for calming down gut-based inflammation but it problematic to know which part of the immune system is most predictive for provoking gut-based inflammation which triggers inflammatory mediators such IL-6 and TNF-alpha. These results confirm food removal based on IgG subtype I-III are correlated with symptom reduction after dietary change based on IgG response.

**Conclusion:** Food removal based on subtyping of IgG is an effective strategy for gut-based inflammation and provides a road map for patients individualizing their dietary change.

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### **The State of Evidence in Acupuncture – A Review of Metanalyses and Systematic Reviews of Acupuncture Evidence - Update 2017 to 2022**

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Acupuncture has been established in the last decades as a treatment option, not only for pain but for a great variety of diseases and indications. Acupuncture has become globally very popular among patients and health. Coming from an ancient empirical approach as part of Traditional Chinese Medicine (TCM) Acupuncture has spreaded worldwide. The WHO has had published a treatment recommendation list in 1975, including a broad range of medical conditions from asthma to urticaria. At this time, only very few well-designed studies with low or very low quality existed.

Since the NIH consensus statement in 1998 Acupuncture research has increased exponentially, not only in number but also in quality of research. In 2017 John MacDonald started an approach for an overview and published the Acupuncture Evidence Project.

Since 2017 the amount of evidence in the field of acupuncture drastically increased, urging for a continuation of another comparative review.

Our “State of Evidence” , covering the years 2017 – 2022 tried to evaluate by GRADE system all systematic reviews and metanalyses in Acupuncture. It aimed to further clarify the grade of evidence for acupuncture in various medical conditions in this period.

Our review found high evidence for the effectiveness of acupuncture for 10 medical conditions and for 82 indications with potential positive evidence Acupuncture effectiveness, together in 92. In our opinion, this shows the increasing quality of evidence for Acupuncture over the last years.

### Reliability and validity of a new test to measure the ability for physical relaxation

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**Background:** The development of e.g. arterial hypertension and psychiatric disorders (anxiety, depression) is associated with an increased stress level. Since there is no recognized method of measuring a person's ability for physical relaxation so far, we developed such a method. We wanted to test its inter-rater reliability and validity.

**Methods:** For the test, participants are requested to completely let go their arm which is passively moved and dropped by an examiner. If a person can relax perfectly, it is expected that the arm drops according to gravity and no active movement can be observed. Two independent, blinded raters performed the tests in volunteers, who were recruited from our outpatient clinic and social media and observed the ability for physical relaxation and documented their result using a scale from 0 (= perfect muscular relaxation) to 4 (= no muscular relaxation). A Cohen's weighted kappa  $>0.70$  was set as threshold for an acceptable inter-rater reliability. The order of the raters was randomized to control for potential sequence effects.

Pain, paralysis or deformity of the arm and neuromuscular comorbidities were the main exclusion criteria. All examinations were recorded on video. Furthermore, we documented current subjective stress levels (evaluated by Cohens P(erceived) S(tress) S(cale)-10) and current subjective muscular tension (numeric rating scale from 0 to 10).

**Results:** 97 volunteers (33 male, 64 female, mean age 45 years, 57 had at least one relevant disease) were included according to our sample size calculation. 94 were tested by both raters (3 dropouts). Median score of the observed muscle tone was 2 (0-4). Cohen's weighted kappa for inter-rater reliability was 0.740. In  $>95\%$  of the ratings, the total score deviated  $\leq 1$  score point. We found no significant correlation with Cohen's PSS10 and subjective muscular tension.

**Conclusions:** Our test on the ability for physical relaxation has achieved the predefined inter-rater reliability. The test seems not to correlate with conventional measures of stress and further validation is, therefore, needed.

**Key words:** Relaxation, muscle tension, body awareness, video

### Hot arm baths decrease diastolic blood pressure in a crossover randomized controlled trial

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**Background:** Peaks in blood pressure are a common problem in patients with arterial hypertension and can be difficult to manage. Hot arm baths (HAB) have been traditionally and in Anthroposophic Medicine (AM) employed to lower acute high blood pressure as they may reduce peripheral resistance by changes in warmth distribution, but randomized, controlled trials are lacking. We hypothesized that HAB reduce diastolic blood pressure (DBP) short term in patients with arterial hypertension.

**Methods:** We performed a monocentric, randomized-controlled pilot study in participants with arterial hypertension ( $\geq 150$ mmHg systolic and/or  $\geq 90$ mmHg diastolic). In a crossover design, participants received a HAB with a temperature of 45°C and a thermoneutral arm bath (TAB) with a temperature of 28°C for five minutes each, with a post-interventional observation period of 90 minutes. Effects on systolic blood pressure (SBP) and diastolic blood pressure (DBP) as well as the heart rate were measured in close intervals (after 1, 5, 10, 15, 30, 60 and 90 minutes). The washout period between both interventions was seven days. The primary endpoint was the difference from baseline in DBP one minute after HAB compared to the TAB.

**Results:** 54 participants with arterial hypertension were randomized, 50 were analyzed (4 drop-outs). The majority of participants took antihypertensive medication. Analysis revealed no carry-over effect. The analyses of treatment effects showed significant effects of HAB on SBP after 1 and after 5 minutes and on DBP after 1, 5, 30 and 90 minutes compared to TAB. No major side effects were reported.

**Conclusions:** HAB might be a safe and fast-acting add on tool to help managing blood pressure peaks at home.

**Key words:** Balneotherapy, hypertension, hot arm bath

### **A feasibility trial of ScarWork on post-breast surgery pain syndrome (PBSPS) in early stage breast cancer patients.**

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**Background and objective:** Breast cancer, the most prevalent female cancer in the United Kingdom (UK) affects 55,200 women annually[1]. Breast-conserving surgery (lumpectomy) followed by radiotherapy is a common and effective treatment. However, it may lead to scar tissue formation and persistent pain in approximately 40% of patients up to three years post-surgery, significantly impacting quality of life[2]. Current pain management strategies, primarily reliant on analgesia, prove insufficient for many. ScarWork, a manual therapy developed by Sharon Wheeler targets scar tissue, and shows promise in alleviating scar-related pain. However, research evaluating its clinical effectiveness remains limited.

The present study aims to assess the feasibility of delivering ScarWork to early-stage breast cancer patients experiencing breast pain syndrome after surgery. Additionally, the trial will gather preliminary data on ScarWork's clinical effects, participants' perspectives on the trial design, and experience of the ScarWork intervention, amongst those in the treatment arm.

**Methods:** The feasibility trial employs a pragmatic mixed-methods randomised parallel-group exploratory design. The trial aims to recruit 40 early-stage breast cancer patients with post breast surgery pain syndrome (PBSPS). Participants will be randomised (3:1 ratio) to receive either standard care plus ScarWork or standard care alone. ScarWork will be administered in 6 individualised 1-hour sessions over 12 weeks. Participants complete outcome measures at baseline, two weeks post-third and fifth treatments, and four weeks post-treatment. Outcome measures include BREAST-Q Breast Conserving Therapy Module V2.0, the Expanded and Revised Short-form McGill Pain Questionnaire, the Patient Scar Assessment Questionnaire, and the Measure Yourself Medical Outcome Profile. Participants take part in a qualitative interview at the end of the 10-week intervention period.

Quantitative data will be entered into Statistical Packages for Social Sciences (SPSS). Analysis will include descriptive statistics, appropriate tests for statistical significance and statistical power calculation. Data from qualitative interviews will be analysed thematically using the Framework method.

**Results:** Feasibility trial is ongoing and preliminary findings will be presented at the conference.

**Conclusions:** If ScarWork is found to be clinically effective, it holds promise for improving pain management, quality of life, and clinical outcomes for breast cancer survivors.

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### The Role of Integrative Reproductive Medicine in the Management of Low Ovarian Reserve

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Nowadays, many patients seek more and more for a holistic approach when it comes to fertility treatment. In recent years, integrative fertility care has become more visible and important in the management of many issues related to infertility, such as low ovarian reserve, endometriosis, PCO, and RPL. Addressing the underlying bio-energetic factors and employing a comprehensive array of integrative reproductive strategies is paramount in the treatment of low ovarian reserve. When using integrative therapy strategies, especially WS-TCM and naturopathy, all together with a conventional reproductive medicine approach, the likelihood to achieve a successful pregnancy improves greatly. So what is LOR according to Integrative Reproductive Medicine (IRM)? Low AMH, high FSH, low AFC count, etc., or shall we look beyond this? IRM re-conceptualizes LOR beyond physical markers like AMH, FSH, AFC recognizing it as a manifestation of weakened bio-energetic dynamics, particularly the Shao Yin instrument. Ovulation (potential life) is fire pivot and relies on recharging capabilities of Shao Yin instrument. The fire pivot that separates from mother's ovary and yet remains within her body. If this fire pivot isn't working properly, or in other words, if the recharging capabilities of Shao Yin instrument are weak and imbalanced, then you can get conditions like LOR and infertility. As a consequence, we need to ask ourselves how to use ART correctly in order to preserve Shao Yin instrument. IVF drugs stimulate or suppress the physical vessel (body), it has nothing to do with recovering or strengthening energy. From a unification-separation circle point of view, stimulating drugs extract and spend Shao Yin energy into separation, and so one can get many eggs, suppression drugs prevent unification from concealing inwards. Either way Shao Yin unification instrument is deeply affected. So if a patient has already a weak Shao Yin instrument before using ART, after ART, Shao Yin is even weaker; how can the egg quality be good then? In this presentation, we will share our unique IRM thinking method and you will be able to understand the role of IRM in the management of LOR from a profound and tangible point of view.

### Naturopathic nursing interventions in Home nursing services in Germany. Results of an online survey

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**Background and objective:** Naturopathic nursing interventions (NNI) play a significant role in global health care, particularly in the prevention and treatment of chronic disease (1, 2, 3). Many NNI facilitate self-care practices, empowering patients to manage their health independently, either with guidance from healthcare professionals or autonomously (4). Therefore, NNI are an important resource for self-care. The aim of this study is to gain insight into the attitudes and current knowledge of nurses working in Home nursing service (HNS) in Germany, as well as their perceived need for continuing training.

**Method:** An explorative cross-sectional online survey was conducted between April and July 2023. The anonymous survey addressed the nurse managers of HNS in the federal state of Baden-Württemberg, Germany. Descriptive analysis was used for quantitative data, while qualitative and quantitative content analysis according to Kuckartz was used to analyze open-ended text responses.

**Results:** A total of n=68 HNS out of n=1331 HNS participated in the survey, resulting in a response rate of 5.1%. Their overall attitude towards NNI was clearly positive (10-point Likert scale  $M \pm SD$ :  $8.37 \pm 2.22$ ). The average self-assessed level of knowledge about NNI was moderate ( $M \pm SD$ :  $5.39 \pm 2.76$ ). Nearly half of the participants (45.6%) reported incorporating NNI into patient care. Most participants (84.2%) did not have staff with additional qualifications in NNI. The most commonly used NNI most were medicinal herbal teas (61%), compresses (57%), and aromatherapy (48%). Acupressure showed the greatest discrepancy between actual use in participating HNS (4.3%) and interest in further training (61%). Pain, respiratory problems, anxiety, and palliative care are most commonly addressed symptoms. The main challenges reported are financial aspects, qualification, and limited resources (time and staff).

**Conclusion:** This study provides a first comprehensive overview and a starting point for further research. The overall response rate was low (5.1 %), so the results should be interpreted with caution. NNI are valuable low-threshold and safe methods of self-care. It is therefore important to cover them in nursing education, in reimbursement of care and in the integration into HNS to the best possible extend.

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### Quality of Life SF36 Scores Improved using Calligraphy Meditation and Chanting Mantra – a Three years study; XVI European Congress for Integrative Medicine, Integrative Medicine, The Challenge, Madrid November 15-17, 2024.

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**Background and objective:** It is well documented that meditation itself and also painting calligraphy can positively influence some illnesses. In authors experience, not only painting calligraphy, but even simple tracing the lines with fingers, can bring practitioner into mindfulness state, especially if it's combined with chanting mantra. Authors have aimed to study the effect of combining mindfulness practice and art therapy.

**Method:** Authors studied the effect of meditating by tracing calligraphy and chanting mantras on SF-36 scores in 61 subjects with various illnesses for three years. The study was IRB approved. At beginning subjects were instructed and received an energy transmission and practiced tracing Chinese Calligraphy together with chanting mantra for 10 minutes a day at minimum and on line 30 minutes 2x week, while attending other meditation events also. The RAND Quality of Life Questionnaire SF36 was completed at the start of the study, in 1 month, in 6 months, in 1 year, in 2 years and in 3 years.

**Results:** ANOVA analysis showed 7 indexes statistically significant improvement, one index improved but not significantly.

Physical Functioning: change 61.7->73. p – 0.24\*;

Role Limitations due to Physical Health Problems: change 39.1->69.67 p – 0.00; Role Limitations due to Personal or Emotional Problems: change 43.8->75.96 p – 0.00;

Energy / Fatigue: change 37.9->58.77 p – 0.00;

Emotional Well-being: change 60.1->75.48 p – 0.00;

Social Functioning: change 53.5->75.48 p – 0.00;

Bodily Pain: change 53.5->75.48 p – 0.00;

General Health: change 53.5->68.93 p – 0.00;

Since conception there was continuous improvement of QoL Scores with exception of decline of general health score in 2<sup>nd</sup> year, but this was up again at 3 years. At conception, the cohort was functioning around 50% of capacity and at around 70% at the end.

**Conclusions:** Our results showed that meditation with Tao calligraphy tracing and mantra chanting is effective modality that can be integrated into conventional health-care. It is easy to learn and practice. We did not observe any significant side-effects.

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### Relationship between emotional trauma and melanoma location on the meridians of TCM as an expression of the mind-body connection in cutaneous melanoma survivors

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**Purpose:** To investigate a possible connection between emotional trauma and the location of cutaneous melanoma on the meridian system of Traditional Chinese Medicine.

**Methods:** Melanoma (MM) survivors received short tutoring on the link between emotions and meridians as described in literature including the main meridians with their associated emotions. Then they were asked to describe traumatic events in their lives, which in their opinion could be relevant to melanoma development. Clinical data, reported felt emotions, and mapping of MM on the skin meridians were recorded. The emotional issues described by the patients were compared with the meridian's associated emotions at the site of MM location.

**Results:** Fifty-two melanoma patients (67.3% females) with MM in situ (42.3%) and Breslow thickness up to 1.1 mm (57.7%) were included.

The most frequent location of MM on the meridians included the Bladder (30.8%), Triple Energizer (15.4%), and Large Intestine, Stomach, and Gallbladder Meridians (11.5% each).

The most commonly reported emotions in the context of a significant traumatic event possibly related to MM were anger (19.6%), frustration (17.5%), sadness (14.3%), and fear (8.2%). A positive meaningful correlation between the patient's felt emotions and the meridian's associated emotions at the site of MM location was found in 82.7% of the cases.

#### **Conclusions:**

1. **Novelty:** This is a first study revealing a link between emotional trauma-related emotions and the precise location of cutaneous melanoma mapped to corresponding meridians sharing the same associated emotion. Additionally, the findings highlight the potential role of traumatic events and associated emotions as possible contributing co-factors in the multifactorial development of CM.
2. **Potential application:** The study suggests CM location could serve as a rapid indicator for assessing emotional trauma.
3. **Holistic approach:** Underscores the need of addressing emotional factors in CM treatment and prevention, incorporating trauma management, stress reduction techniques, and self-regulation skills alongside standard medical care.

### EFFECTIVENESS OF DANCE MOVEMENT THERAPY IN THE PREVENTION AND TREATMENT OF BURNOUT OF THE HEALTH PROFESSIONALS

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**Background and objective:** The post-COVID-19 pandemic situation has created new challenges in managing occupational stress for healthcare workers. The World Health Organization classifies burnout as an important occupational risk and requests the adoption of concrete measures to address the mental health problems in the work environment. Creative therapies, such as dance movement therapy (DMT) offer an innovative and concrete intervention in the prevention and promotion of health<sup>1, 2</sup>.

The general objective of our study is to evaluate whether an intervention based on DMT is effective for the prevention and treatment of burnout, perceived stress and improvement of well-being in healthcare personnel.

**Method:** Pilot observational study with mixed methodology. Five 2-hour DMT sessions were carried out once a week in the intervention group and were compared with the pre-post tests at the end and after three months with the BMI-HSS burnout test, WHO-5 WBI well-being test, stress perception test and SF-36v2TM. The sample was made up of 69 workers from a Catalan Hospital.

**Results:** The results showed statistically significant changes in the measured variables (PSS: Pre-25.38, Post-21.63 p-0.001; WHO: Pre-13.81, Post-15.60, p-0.001) with a reduction in stress levels and an increase in well-being after completing the program. These changes were maintained three months later. The qualitative analysis of the participants' reflective diaries also showed the acquisition of strategies to manage their daily life in a healthier way and the positive influence of this program on communication and the work environment.

**Conclusion:** We can affirm from our main objective that dance movement therapy is effective in the short term on the emotional exhaustion subscale of burnout in healthcare personnel. The results suggest that DMT is an effective therapy for the prevention and treatment of stress in health professionals.

The results agree with previous studies consulted, such as those by Bräuninger<sup>3</sup> and Rodríguez-Jiménez<sup>4,5</sup>, which demonstrate the benefits that an intervention with DMT provides in the regulation of stress levels, psychological well-being and life satisfaction.

Support for research in this field could improve not only the mental health of workers but also the quality of care they provide to the population.

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### Key Concepts of Traditional Amazonian Medicine

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**Background and objective.** Traditional Amazonian medicine (TAM) of Peru is a millennia-old Indigenous healing system based on intimate knowledge of Amazonian plant species and sophisticated therapeutic application techniques. Although over the last years international scientific interest in the Amazonian ayahuasca has been burgeoning, TAM as a healing system, its underlying principles and concepts, have remained largely underexplored. This is however important, both in the context of emerging Western applications of ayahuasca, and crucially also to address healthcare inequalities notoriously affecting Indigenous populations of the Amazon. In countries like Peru or Bolivia, the Amazon makes up over 60% of national territory, yet public healthcare in these regions is scarce, and, although some of the largest proportions of Native People live there, existent services tend to lack cultural pertinence. The development of integrative healthcare approaches, via inclusion of TAM and Indigenous healers, is an important avenue to address such inequalities, as it increases cultural adequacy and accessibility of services, while honouring the rights of Indigenous Peoples to be included in public healthcare (United Nations, 2007). A better scientific understanding of TAM is however prerequisite for this purpose. Thus, in view of both of these necessities, the current study aimed to investigate key concepts of TAM using a transdisciplinary approach.

**Method.** We conducted systematic semi-structured in-depth interviews with a sample of 13 highly experienced traditional healers from the three main Peruvian-Amazonian regions (Loreto-Ucayali-San Martín). Data was analyzed using manifest qualitative content analysis.

**Results.** Our findings point to an intricate medical system involving profound understandings of health, illness, and treatment. Indigenous healers described multifactorial etiology concepts, complex interactions between physical and spirit/energy-related aspects of the individual, nature, plants and their applications in diagnosis, prevention, and treatment. While the healers considered traditional and biomedicine as complementary systems, they identified the lack of recognition of traditional healers as primary barrier for collaboration.

**Conclusion.** This work offers a significant contribution to the understanding of Indigenous-Amazonian medicine using an emic approach. Our findings highlight Amazonian healers' unique expertise in view of the development of integrative and inclusive healthcare models, as well as in the context of the current global interest in ayahuasca.

### Effects of a mindfulness-based intervention in Chilean adolescents in the school context: a pilot study.

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**Background and objective:** At-risk adolescents are especially vulnerable to experiencing mental health symptoms. In the last 15 years, mindfulness-based interventions in the school context (MBIs) have become an effective tool in reducing negative affective symptoms and promoting well-being in adolescents (1-3). Our aim was to evaluate the effectiveness of an MBIs on symptoms of depression, anxiety, stress, and levels of self-compassion, as well as the durability of the effect over time, in Chilean adolescents at social risk.

**Method:** Intra-subject differences were analyzed in the scores of the depression, anxiety, and stress scales (DASS-21) (4) and self-compassion scale (SCS) (5), after an MBIs applied to 119 students from 8th to 12th grade (63 women and 52 men), from a vulnerable school in Santiago de Chile. The scales were applied before (T1), immediately after (T2), and 3 months post-intervention (T3) and analyzed using Wilcoxon signed rank test.

**Results:** For the DASS-21 Depression scale, decreased scores were observed among T1 measures (M=9.51; SD=5.82) and T2 (M=7.97; SD=5.61) ( $p=0.002$ ); and between T1 and T3 (M=8.24; SD=6.22) ( $p=0.042$ ). No effect was observed in anxiety and stress scales. Regarding the SCS scale, statistically significant decreases in the means were observed only between T1 and T2, for the dimensions of Judgment ( $Z=-2.18$ ,  $p=0.029$ ), Isolation ( $Z=-2.44$ ,  $p=0.015$ ) and for the sum of negative facets ( $Z=-2.16$ ,  $p=0.031$ ). No effect was found in positive facets of self-compassion. There were differences between gender groups. The effects were associated with adherence to personal or group practice.

**Conclusion:** Mindfulness-based interventions in the school context reduce depressive symptomatology and promote self-compassion, but the stability of the effects depends on active practice.

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### SARCOIDOSIS THERAPY WITH A multi-component mixture based on *Viscum album L.* mistletoe extracts and Ferrum chloratum

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**Background and objective:** Sarcoidosis is a rare but chronic, inflammatory, systemic disease that primarily affects the lung (1, 2). At the Department of Pneumology of the Gemeinschaftskrankenhaus Havelhöhe, the treatment of sarcoidosis is complemented with a multi-component mixture based on *Viscum album L.*, mistletoe extracts and Ferrum chloratum according to the Havelhöhe Sarcoidosis Protocol (HSP). The objective of this study was the evaluation of disease progression in patients with sarcoidosis under treatment with HSP.

**Method:** In accordance with the study protocol and ethics approval, a real-world data study was conducted through systematic retrospective analysis. Descriptive statistics were used to monitor clinical progression, pulmonary function, fatigue and adverse events in a sarcoidosis cohort.

**Results:** 956 patients with sarcoidosis were treated with HSP between 2003 and 2022, and a total of 124 consenting patients (all stages, 35% multi-organ sarcoidosis, mean age 43 years, 69% female) were included in the comprehensive analyses for evaluation of clinical outcomes over a median follow-up of 23 months. Current analysis of real-world data shows that complementary HSP therapy may be effective and safe to treat sarcoidosis. The disease control response rate was 69% and in particular, improvements of fatigue symptoms were observed. Pharmacovigilant monitoring demonstrated a safe HSP therapeutic profile. Only 10 (8%) subjects experienced grade 1 adverse events.

**Conclusion:** The complementary HSP therapy may support the clinical efficacy of sarcoidosis therapy and appears to be safe. As there is limited evidence on the treatment options for chronic sarcoidosis (2, 3), HSP should be included in the management strategies for chronic sarcoidosis.

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**Discloser:** C.G. reports honoraria from AstraZeneca, Novartis, Chiesi, the German Society of Pneumology, Takeda, the German S3-Guideline on Complementary Medicine in the Treatment of Oncological Patients, the Brandenburgian Cancer Society, and outside the submitted work as well as grants from Wala AG, Iscador AG, and outside the submitted work. C.G. is a member of the European Respiratory Society, the German Society of Pneumology, the Health Care without Harm, the German Alliance for Climate Change and Health, and the Society of Anthroposophic Physicians. M.R. is an employee of the company Iscador AG. H.W. reports honoraria from AstraZeneca and Berlin-Chemie. The other authors declare that they have no competing interests.

### High-Dose Intravenous Vitamin C Treatment- a 10-Year Prospective Cohort Study (HIVITC)

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**Background:** Increasing evidence suggests that oxidative stress plays a crucial role in the pathophysiology of many diseases (e.g., cancer, infections, pain), increasing the demand for antioxidants such as vitamin C. However less is known about the effects and tolerability of high-dose vitamin C intravenously in everyday care. Intravenous administration is often preferred because it achieves higher plasma levels of vitamin C than oral intake and ensures full compliance.

**Methods:** In this 10-year prospective, non-interventional, multicenter study, patients received intravenous vitamin C infusions to address deficiency. The study evaluated symptom changes and continuously monitored for adverse events. It was registered with Clinical Trials (NCT02422901) and ENCePP (3658) and was designed, conducted, and ethically validated based on the principles of the Declaration of Helsinki, Good Clinical Practice, and current STROBE guidelines.

**Results:** Between November 2012 and October 2022, data from 5633 patients (mean age 51 years; 42.3% male, 57.7% female) were documented by 93 physicians and healthcare practitioners. Underlying conditions from 20 different ICD-10 groups were recorded. Significant improvements ( $p < 0.0001$ ) were observed between baseline and final visits for general symptoms (tiredness/fatigue, sleep disorders, depression, lack of concentration), pain, the three most common disease-specific symptoms, and the sum score of general and disease-specific symptoms. Patients typically received one infusion of 7.5 g of vitamin C per week. Very good tolerability was reported in 5608 patients (99.6% of safety data sets), with eleven cases of non-serious adverse events.

**Conclusions:** This study represents the largest dataset on high-dose vitamin C treatment in routine clinical practice. Treatment of vitamin C deficiency was associated with significant symptom improvement and was well tolerated. Further randomized controlled studies are recommended to explore the potential pharmacological effects of vitamin C in more depth.

### PHYTOCANNABINOID IN MULTIPLE MYELOMA. PRECLINICAL IN VITRO AND IN VIVO EFFECTS ON TUMOR GROWTH AND BONE INFILTRATION.

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**Background and objective:** Multiple myeloma (MM) is a blood cancer caused by an abnormal and uncontrolled growth of clonal plasma cells. One of the main complications in MM progression is bone lesions, which can increase the mortality risk, and which is due to myeloma cells infiltrating the bone marrow and inducing osteoclast activation.<sup>1</sup> Phytocannabinoids, as medical products, are used in cancer patients for their palliative effects, and their proper anticancer effects were evidenced in different solid cancer models both *in vitro* and *in vivo*.<sup>2,3</sup> However, few evidence has been provided in haematological cancers as MM, up to now.<sup>4,5</sup> Moreover, different new phytocannabinoids have been discovered, but the potential antitumoral activities are almost unknown. The objective of this research was to evaluate the role of Cannabigerol (CBG), Cannabichromene (CBC), Cannabinol (CBN), and Cannabidivarin (CBDV) in human MM *in vitro* and *in vivo* preclinical model.

**Method:** Cell viability, cell death assay, western blot analysis, comet assay, invasion and bone resorption assay were performed on human MM cell lines (U266, RPMI, SKO), osteoblast cell line (HuOB), and THP-1 derived osteoclast. Moreover, *in vivo* analysis was performed in MM xenograft mice model.

**Results:** CBG, CBC, CBN and CBDV inhibited with different potency the growth of MM cells by inducing necrotic cell death, and DNA fragmentation was observed. Combinations of phytocannabinoids increased the effect of the single treatment. Also, they reduced the MM cells bone invasion and bone resorption *in vitro*. CBN reduced the tumour mass *in vivo*.

**Conclusion:** Our results showed that the phytocannabinoids object of this study have antimyeloma activities *in vitro* and *in vivo*.

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### Targeting male subfertility through short-term caloric restriction

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**Background and Objective:** Sperm quality is progressively decreasing in western countries leading to the necessity to explore feasible therapies. Anecdotal evidence indicates that fasting might increase fertility in both genders. This study aims at exploring feasibility and effects of a Fasting Mimicking Diet (FMD) in the context of male subfertility.

**Methods:** In this exploratory RCT study men with limited sperm quality were randomised into a fasting or a control group. The fasting group (FG) underwent three cycles of a hypocaloric FMD (500-630 kcal/d for 5 days) within 4 months. Spermogram parameters (total and progressive sperm motility, concentration, total sperm count, ejaculation volume and sperm morphology) were compared baseline to six months later. We also included one participant as an extra case, to explore responsiveness to fasting after a history of scrotal cancer.

**Results:** In this exploratory study, recruitment was challenging (18 out of only 22 participants completed all visits). The study involved 10 fasters and 8 controls and found no considerable differences between the groups regarding sperm parameters. While effect sizes indicated slightly positive trends for sperm motility, total sperm count, concentration and morphology after FMD, the control group showed an increase in ejaculation volume but a decrease in overall sperm quality. The extra case showed clinically relevant improvements after 6 months regarding total and progressive sperm motility as well as total sperm count.

**Conclusion:** This small exploratory study showed FMD feasibility but found no clear differences between groups. Possible beneficial effects of the FMD on sperm quality should be investigated in larger studies, preferably also in healthy men regarding possible preventive effects. Further, we suggest that men with previous scrotal cancer should not be excluded in future studies.

**Keywords:** Fasting mimicking diet, Fasting, lifestyle intervention, sperm quality, male subfertility, sperm motility, mixed methods study

ClinicalTrials Registry: NCT04908774

### Phyto- and endo-cannabinoids induced cell death in glioblastoma cell lines.

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**Background and objective:** Glioblastoma (GBM) is the most malignant and aggressive form of brain tumour and displays high rates of recurrence despite chemotherapy, and radiation. Numerous studies have shown pronounced cytotoxic effects of phytocannabinoids (PCs), mainly cannabidiol and  $\Delta$ 9-tetrahydrocannabinol in GBM cell lines, animal models and supported by a clinical trial<sup>1</sup> while no evidenced were provided for other new PCs isolated from Cannabis plant, as Cannabigerol (CBG), Cannabinol (CBN), Cannabichromene (CBC) and Cannabidivarin (CBDV). The endocannabinoid system (ES) is an endogenous neuromodulator network composed of endogenous cannabinoids (ECs), cannabinoid and non-cannabinoid receptors, and the enzymes responsible for the synthesis and degradation of ECs.<sup>2</sup> ECs modulate inflammation and energy metabolism and was suggested that they are dysregulated in GBM.<sup>3</sup> However, new PCs and ECs role in GBM has not yet been investigated. The objective of this project was to evaluate the effects of these compounds in regulating GBM cell viability and to investigate the molecular pathways involved.

**Method:** CT-2A and GL-261 mouse GBM cell lines were treated with different PCs and ECs. Cytotoxicity was evaluated by MTT assay. Autophagy and cell death was evaluated by Western Blot, confocal microscopy and cytofluorimetric analysis.

**Results:** PCs and ECs reduced the growth of GBM cell lines, by inducing autophagic cell death.

**Conclusion:** Different PCs and ECs are effective in reducing GBM viability, suggesting that dysregulation of ES in GBM should be restored by integrative therapy with specific PCs and or by stimulating the synthesis of specific ECs.

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### NutriJIA-Study: Therapeutic Complementary Whole Food Plant-Based Diet in Juvenile Idiopathic Arthritis – A Pilot Study on Feasibility

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**Background and objective:** Juvenile idiopathic arthritis (JIA) is the most common rheumatologic condition in childhood and adolescence (CaA). The causes of JIA have not been fully elucidated (1). Current therapy primarily consists of medication and physiotherapy. The possible involvement of the gut microbiome raises questions about the potential influence of diet. Various forms of plant-based diets have been shown to improve symptoms in adults with rheumatoid arthritis (2-4). This randomized controlled pilot study investigated the feasibility and potential effects of a whole food plant-based diet (WFPB) as a complement to medication in CaA with JIA.

**Method:** CaA (8 to 18 years) from the pediatric rheumatology outpatient clinic of Charité Universitätsmedizin Berlin with a diagnosis of JIA were randomly assigned to a nutritional intervention group (1) and a waiting list control group (0). The WFPB dietary intervention was carried out in conjunction with therapy over 3 months. The primary endpoints were feasibility described by recruitment rate, compliance and dropout rate. Secondary outcomes included Juvenile Arthritis Disease Score 10 (JADAS10), the Pediatric Quality of Life Inventory (PedsQL), fatigue and dietary intake amongst others. Data were analysed descriptively.

**Results:** Out of 198 screened CaA, 175 were excluded, leaving 23 eligible and randomized (12 intervention, 11 control). There were no dropouts at the 3-month visit. No relevant changes in body-weight, vitamin B12, holo-transcobalamin and transferrin saturation were observed in both groups after 3 months. The JADAS10 score dropped from 2,3 (intervention) and 3,8 (control) at baseline to 2,1 and 2,8 respectively after 3 months. The total PedsQL score increased from 80,5 (intervention) and 81,5 (control) to 84,5 and 81,6 respectively after 3 months. Numeric rating scale values for fatigue decreased in the intervention group (3,3 to 3,0) while increasing in the control group (3,1 to 3,7).

**Conclusion:** The implementation of a WFPB diet appeared feasible and safe in CaA with JIA. Confirmatory studies are necessary to substantiate the effects on disease activity.

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### QUALITATIVE FINDINGS ON FASTING IN A FERTILITY CARE SETTING

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**Background and objective:** Approximately 10-20% of couples worldwide suffer from an unfulfilled desire for children, significantly impacting quality of life. (1-3) Fasting is known to positively impact various health-related outcomes. (4, 5) This study investigated subjective fasting experiences of women fasting during their fertility treatments and how fasting as an intervention was received at the fertility clinics themselves.

**Method:** Semi-structured interviews were conducted with female study participants to assess feasibility of a fasting intervention. Additionally, the staff of the recruiting fertility centres were interviewed on their perspectives regarding implementing fasting in fertility care. The interviews were analyzed using the methods of Kuckartz and Brown and Clarke, with regular discussions in the research group to ensure consistency.

**Results:** We observed differences in perceptions of fasting between fertility centre staff and fasting participants. Staff perceived fasting as a radical approach that might be too challenging for most patients. They assumed beneficial fasting effects would apply primarily to overweight patients. In contrast, participants found fasting to be feasible, although reporting different challenges such as fatigue or cravings for food. Those were overcome by themselves or through the close accompaniment by the study team. Additionally, participants felt empowered by actively participating in their treatment, independent of their body weight. Also, regarding psychological and mental effects, fasting proved transformative: Some reported increased hope for successful fertility outcomes through fasting, while others made peace with the possibility that their desire for children might never be fulfilled.

**Conclusion:** Participants perceived fasting as feasible and beneficial, although the close fasting accompaniment by the professional study team seemed important. In contrast, staff seemed to be more doubtful, suggesting fasting at most for weight loss. We therefore suggest further studies to evaluate possible medical and psychological effects of fasting in fertility care, independent of body weight.

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### Effects of prolonged fasting during an inpatient nature-based treatment on pain and quality of life in rheumatoid arthritis.

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**Objective:** Preliminary experimental and clinical data suggest anti-inflammatory and pain-reducing properties of therapeutic fasting. This uncontrolled, observational study investigated effects of prolonged fasting on patients with rheumatoid arthritis (RA).

**Methods:** Patients admitted to the Immanuel Hospital Berlin between 02/02/2018 and 12/03/2020 completed disease-related questionnaires at the beginning and end of their inpatient stay as well as 3, 6, and 12 months after hospital discharge. Therapeutic fasting (daily caloric intake <600 kcal) was part of a multimodal integrative treatment program.

**Results:** 152 patients with RA fasted for an average of 7.6 ( $\pm 1.9$ ) days. Pain decreased from 5.8 to 3.0 on an NRS of 0 to 10, while the need for analgesics and corticosteroids decreased. Well-being measured using the WHO-5 questionnaire increased from 10.1 ( $\pm 4.56$ ) at the start of the study to 15.8 ( $\pm 4.35$ ;  $T = 13.6$ ,  $p < 0.0001$ ) and remained at an elevated level until the last visit after 12 months. An effect to reduce depression and anxiety (HADS-D,  $-2.8 \pm 3.3$ ,  $p < 0.0001$  and HADS-A,  $-2.9 \pm 3.5$ ,  $p < 0.0001$ ) was observed until 6 months after inpatient treatment.

**Conclusion:** Prolonged therapeutic fasting may be beneficial for patients with RA as part of a multimodal integrative treatment approach in terms of quality of life and pain. Further randomized controlled trials are needed to confirm these results.

**Keywords:** fasting, rheumatoid arthritis, calorie reduction

### Wellness or medicine? Use and perception of Ayurveda in Germany: data from an online-representative cross-sectional study

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**Introduction:** Ayurveda, South Asia's largest and most relevant system of Traditional Medicine, holds a legal status akin to conventional Western medicine in India and elsewhere. There is an almost complete lack of data on the use of Ayurveda in Germany. The aim of this study was to investigate Ayurveda's utilization patterns, entry points, and factors influencing its use and the perception of Ayurveda among the German population.

**Methods:** Basis of this manuscript was an online-representative survey which involved 4,065 participants aged 18–75 about the use and acceptance of Traditional, Complementary and Integrative Medicine (TCIM) in Germany. The survey was conducted online using Computer Assisted Web Interview (CAWI) in 2022. The dataset was analyzed descriptively and inferentially.

**Results:** Altogether 9.3% (n = 377) of all survey participants (n = 4,065) had already used Ayurveda somehow, either more often (1.7%) or at least once in a lifetime (7.6%). Responders associated Ayurveda primarily with Indian Medicine (27.7%) and wellness (18%). Commonly used Ayurvedic services included nonmedical treatments at wellness resorts/spas (48.3%), in outpatient practices (27.1%), and hotels (23.6%). 30.2% of the participants believe in Ayurveda's therapeutic potential. 76.7% of Ayurveda users find healthy nutrition important or very important. Nine predictors were found to classify Ayurveda users vs. non-users with spirituality and belief in Ayurveda's therapeutic efficacy as the most relevant ones. Ayurveda seems to be primarily used by well-educated and female individuals, often from higher-income groups and with a rather modern social milieu-orientation.

**Conclusion:** Study results suggest that about every tenth German citizen has used Ayurveda in the past and about one third believes in its therapeutic potential. Because Ayurvedic therapies are often not evidence-based, there is an urgent need to perform high quality randomized controlled trials to investigate potential effects and safety of Ayurveda and how evidence-based Ayurveda treatments can be integrated into the German healthcare system.

### Getting kids well under water?

#### Efficacy of Kneipp Concept on health promotion in Berlin daycares.

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**Background and Objective:** Kneipp Concept (KC) is a 200-year-old German holistic health promotion concept with five elements: cold water applications, exercise, healthy nutrition, herbal plants, and mind-body approaches. Demonstrated beneficial health effects of KC has been insufficiently studied in children. The Kita Kneipp Study sought to evaluate the effects of KC on sick days with on kindergarten children in the area of Berlin, Germany.

**Methods:** A mixed-method, two-arm waitlist randomized controlled trial was conducted to evaluate an age-appropriate kindergarten KC on sick days and common childhood infection symptoms in children (2-6 years). The primary outcome was the change in kindergarten sickdays over one year. Baseline data, including socio-demographics, sick days, and infection symptoms, were collected from kindergarten and parents over sick weeks during the cold season. Following this, educators in the intervention kindergartens were trained in KC, performed it throughout the entire year, and reported their activities weekly over a year.

After one year, sick day and infection symptom data were collected again from kindergarten and parents over another six-week period.

**Results:** In 9 kindergartens, 252 children were recruited and clustered into 4 socio-demographically similar groupings, then randomized to the intervention or control groups. The per protocol analysis using a negative binomial generalized linear model (GLM) showed a significant reduction in sick days for the intervention kindergartens compared to the control group. The control group coefficient was 0.753 (95% CI: 0.129 to 1.378,  $p=0.0181$ ), indicating that children in the control group had 2.12 times more sick days than those in the intervention group after controlling for baseline sick days. The model confirmed overdispersion with a dispersion parameter ( $\theta$ ) of 0.365 (SE: 0.068). Intervention kindergartens most frequently practiced water application, air bath, and arm bath. The KC was not found to have a spillover effect on educator sick days. Qualitative investigation found the concept well adapted to the kindergarten setting and generally enjoyed by participating children.

**Conclusion:** While a scaled up setting should evaluate the health promotion on a larger population, the KC intervention demonstrated a significant reduction of sick days during the period evaluated and are promising.

### EURYTHMY THERAPY DELIVERED ONLINE CAN IMPROVE CANCER-RELATED FATIGUE: AN OBSERVATIONAL REPEATED-MEASURES STUDY

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**Background and objective:** Cancer is a debilitating disease with an often chronic course. One of the most taxing and prevalent sequelae in this context is cancer-related fatigue (CRF) resulting from the disease and/or associated treatments. Over the last years mindfulness-based interventions such as eurythmy therapy (ERYT), a mindful movement therapy from anthroposophic medicine, have emerged as promising adjunct therapies in oncology to address associated sequelae. This study aimed to investigate an online adaptation of ERYT for CRF using a single arm repeated-measures design, assessing changes in fatigue, perceived stress, and mindfulness as outcomes.

**Method:** After a pilot run in 2022 the intervention was held in 2023 extending over 8 weeks. It featured weekly 90min-long sessions, instructions for self-practice between sessions, videos demonstrating exercises, and an exchange forum. Participants who enrolled in the intervention and agreed to participate in the study completed online questionnaires at the beginning, middle, end of the intervention, and at follow-up (8 weeks later). Outcomes were assessed using the *Functional Assessment of Chronic Illness Therapy-Fatigue Scale* (FACIT-Fatigue), *Perceived Stress Scale* (PSS), and *Mindful Attention Awareness Scale* (MAAS). We performed Linear Mixed-Effect Models for the outcomes. All models were adjusted for age, gender, and language.

**Results:** Of the 369 individuals that initially registered in the intervention, 125 participated in the evaluation, of which 60 (48%) filled in at least 2 questionnaires. Scores on the MAAS showed a highly significant time-dependent increase in mindfulness ( $F(3,128)=24.323$ ,  $p<.001$ ), while stress ( $F(3,129)=22.414$ ,  $p<.001$ ) and fatigue showed a highly significant reduction over time ( $F(3,119)=23.618$ ,  $p<.001$ ).

**Conclusion:** This is the first study assessing an online adaptation of ERYT to address CRF. We found significantly improved CRF, stress, and mindfulness scores in conjunction with the intervention, which were maintained also 8 weeks after completion. Further studies including control subjects to confirm our results are warranted. The online format and group setting are especially advantageous as they are low in cost, and, along with the modularity and adaptability of exercises, may be especially suited for individuals with high symptom severity or who are bedridden.

### Differentiating Intermittent, Short-term and Long-term Fasting

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**Background and objective:** Fasting regimens of varying durations are investigated and applied, particularly for their potential benefits in inflammatory, cardiovascular, neurodegenerative, and metabolic conditions. These regimens include methods such as intermittent fasting, time-restricted eating, alternate-day fasting, Buchinger therapeutic fasting, and fasting-mimicking diets. To date, no clear distinction has been established between fasting regimens of shorter and longer duration. As a result, the same fasting regimen may be classified as short-term fasting or long-term fasting in different articles, complicating literature searches and comparisons of study results across these fasting types.

**Method:** A modified Delphi consensus process was conducted, involving 38 frequently cited researchers as well as clinicians with a minimum of 5 years of clinical experience in fasting. Following five online surveys, an online consensus conference, and a brief survey during the peer review process, cut-offs were established to distinguish between intermittent, short-term and long-term fasting regimens.

**Results:** The experts collectively defined intermittent fasting (IF) as repetitive fasting periods of up to 48 hours each. Short-term fasting (STF) encompasses fasting regimens lasting 2-3 days, while prolonged fasting (PF), also referred to as long-term fasting (LTF), includes regimens lasting 4 or more consecutive days. The threshold distinguishing STF from LTF was determined based primarily on expert opinion, due to the limited data available on the differential effects of fasting durations between 2 and 5 days.

**Conclusion:** While future research should examine individual differences based on BMI, physical activity level and age and assess the physiological mechanisms involved in shorter and longer fasts to establish a clear cut-off point based on scientific data, the current temporal divisions of fasting regimens could facilitate a systematic categorization. It is hoped this will provide better comparability of different fasting regimens of specific durations within each category. In a future revision of this terminology, it is recommended to set a maximum duration for long-term fasting, potentially taking into account physiological aspects that limit the fasting time to a maximum period during which the fat tissue stores are not completely emptied.

### Keeping the baby and the bathwater? Qualitative findings from the Kita Kneipp Study based on kindergarten interviews and observations of a health promotion concept with young children

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**Background and Objective:** The Kneipp concept (KC) is a holistic health concept with roots in Germany consisting of five elements: cold (and warm) water applications, exercise, healthy nutrition, herbal plants, and mind-body approaches, used for health promotion. Despite its popularity, research into the impacts on children and educators is limited. The Kita Kneipp Study is a mixed-method, two-armed waitlist cluster RCT with a primary outcome measuring the number of kindergarten sick days in children aged 2-6 years. The qualitative part of this study, reported here, focused on experiences with the KC within intervention kindergartens.

**Methods:** Implementation, experiences and changes among children and educators using the KC in the kindergarten were explored using expert interviews (1) and focused ethnographies (2). Expert interviews with educators were audio recorded, then auto transcribed, while focused ethnography fieldnotes of kindergarten Kneipp activities were written. Transcripts and ethnography fieldnotes were then analyzed thematically according to Kuckartz (3).

**Results:** Kindergarten educator's voiced initial concerns about the time burden of implementing Kneipp subsequently outweighed by benefits. Focused ethnographies emphasized increased enthusiasm towards the KC over time. Educator interviews highlighted that children practicing Kneipp activities helped them learn to support each other while doing a new activity as a group. Educators also perceived an increased tolerance of the children to cold weather and water and increased awareness of bodily sensations. Further, newfound curiosity, confidence and expertise in addition to acceptability of children participating in Kneipp could be observed.

**Conclusion:** KC can be easily integrated into facilities not only as a method of health promotion, but also for teaching children how to be mindful with their own bodies. The qualitative findings of the Kita Kneipp Study highlight the benefits of implementing a holistic health and wellness concept in the kindergarten and demonstrate high acceptability on the part of young children.

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### Exploring the Effectiveness of Acupuncture and Receptive Music Therapy in Alleviating Sleep Disorders among Elderly: A Randomized Controlled Trial - ELAMUS

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**Background and objective:** The global demographic trend towards an aging population introduces substantial challenges for healthcare systems, particularly due to the rising prevalence of multimorbidity, which frequently leads to polypharmacy among the elderly. Concurrently, sleep disorders are a common burden within this demographic group. First-line Cognitive Behavioral Therapy is not available in many cases, whereas pharmacological interventions for these disorders often have adverse side effects and a considerable potential for dependency. Consequently, there is an imperative need to explore further non-pharmacological therapeutic options. This study aims to evaluate the effectiveness of acupuncture and music therapy, both individually and in combination as a multimodal treatment, for sleep disorders in individuals aged 70 years and older.

**Method:** We are conducting a confirmatory randomized controlled trial utilizing a two-factorial study design. A total of n=100 elderly participants receive evidence-based standard care information for age-related sleep disorders. Participants are then randomly assigned to one of four groups to receive eight sessions over a period of 3 months, either of acupuncture, receptive music therapy with a monochord, a combination of both acupuncture and music therapy, or no additional therapy. The primary outcome measure is the improvement in sleep quality, assessed by the global score on the Pittsburgh Sleep Quality Index (PSQI) at the end of the intervention. Secondary outcomes include depression scores (Geriatric Depression Scale), health-related quality of life (Short-Form Health Survey-12), neurovegetative activity measured by heart rate variability, and safety data. A mixed-methods approach will be employed, incorporating a qualitative process evaluation as well as bodily sensation drawings and ratings (Phenomenology of Consciousness Inventory) to complement the quantitative data.

**Results:** The study is ongoing, with the last patient out expected to be in July 2024. The results will be presented at the congress.

**Conclusion:** The findings will provide valuable insights into the effectiveness of non-pharmacological interventions for sleep disorders in the elderly, contributing to a more personalized and holistic approach in geriatric healthcare.

### Predictors of fatigue improvement in multimodal, multimodal-aerobic and aerobic exercise intervention studies in breast cancer survivors with cancer-related fatigue

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**Background and Objectives:** Cancer-related fatigue (CRF) is a common and distressing symptom in breast cancer (BC) and even in BC-survivors. Evidence-based approaches include aerobic training (AT), psychoeducation (PE), sleep education/restriction (SE) and mindfulness-based therapies. We examine the results of two studies (CRF-1, CRF-2). In CRF-1 we conducted a 10-week multimodal intervention (MT) consisting of PE, SE, eurythmy and painting therapy and compared it with aerobic training (AT). In CRF-2 we included a combination treatment arm (CT: MT and AT). In the context of these interventions, we investigated the influence of hygiogenetic/salutogenetic concepts and other psychometric measures on CRF. **Methods:** In CRF-1 BC-patients with chronic CRF were assigned by preference to a treatment arm; in CRF-2 by preference or randomization. Questionnaires measuring hygiogenetic/salutogenetic concepts i.e. autonomic regulation (aR), self-regulation (SRS), internal coherence (ICS) and sleep-quality (Pittsburgh Sleep Quality Index) and quality of life (European Organization of Research and Treatment in Cancer, EORTC QLQ-C30) were recorded at baseline. The Cancer Fatigue Scale-German version (CFS-D) was assessed at baseline, after 10 weeks of intervention (T0, T1: CRF-1 and CRF-2); and six months and four years later (T2, T3: CRF-2 only). The predictive strengths of the different scales at baseline on subsequent CFS-D values and their respective changes from concurrent baseline associations were compared by their regression coefficients estimated from uni- und multivariate models. **Results:** 97 (CRF-1: 36, CRF-2: 61) and 65 BC-patients were allocated by preference or randomized to the treatment arms, respectively. A repeated-measures multivariate regression model which simultaneously analyzed all assessment times of both studies revealed aR and ICS to be the only relevant predictors with statistically significant regression coefficients (aR:  $\beta=-0.36$  (SE =0.123), ICS:  $\beta=-0.51$  (SE =0.172; all  $p<0.01$ ). Separate analyses of the different times of measurement showed the late assessments at T2 and T3 to be mostly responsible for this outcome.

**Conclusion:** In this contribution, we report on predictive factors influencing CRF, including two studies of multimodal, aerobic and combined CRF treatment. It highlights that hygiogenetic and salutogenetic measures - autonomic regulation (aR) and internal coherence (ICS) - were predictors of CRF in BC even after four years.

### Evidence maps on the clinical effectiveness of Traditional, Complementary and Integrative Medicine: Brazilian experience to promote public policies informed by evidence

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**Introduction:** Following a request from the Brazilian Ministry of Health in 2019 for the systematization of evidence in Traditional, Complementary and Integrative Medicines (TCIM) to support the implementation of the National Policy on Integrative Practices, the BIREME Virtual Health Library in TCIM (VHL TCIM/ PAHO/WHO) and the Brazilian Academic Consortium for Integrative Health (CABSIN), launched in 2018, joined forces to develop a series of evidence maps. Method: Evidence maps based on the International Initiative for Impact Evaluation - 3iE, including systematic reviews and evaluating the effect of specific complementary interventions on various clinical outcomes, as well as assessing the quality of studies. To select the included studies, peer review of the studies was used by researchers using the Rayan platform. The AMSTAR2 tool was used to classify the level of confidence in the reported evidence. Result: 26 Evidence Maps were developed from 2,138 Systematic Reviews, including around 460 specific Interventions with 320 Outcomes. The main outcomes were Mental health, Hypertension, Pain, Cancer, Diabetes and Quality of Life, and around 75% of the effect were positive and potentially positive. The main interventions in terms of number of systematic reviews (SR) were medicinal plants, with 554 SR grouped into 6 maps, with an emphasis on 194 studies in the medicinal Cannabis map. Secondly, 5 maps dedicated to Traditional Chinese Medicine grouping 468 SR, of which 175 in acupuncture, 164 in mind and body practices, 38 in auriculotherapy, 27 in cupping therapy and 64 in moxibustion. Other important maps with more than 100 reviews refer to Meditation with 191 SR, Aromatherapy/ Essential Oils with 183 and Yoga with 150 SR. Further research, especially with a higher level of confidence, is needed to strengthen the evidence base and provide more definitive conclusions on the effectiveness of TCIM for specific health outcomes.

**Keywords:** Integrative Medicine, Evidence map, Health outcomes, Systematic review

### Feasibility of a custom tailored, evidence-based, theory-informed intervention with mind-body medicine to prevent burnout in healthcare professionals: a mixed-methods single-arm trial

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**Background and objective:** Healthcare professionals (HCPs) confront elevated levels of occupational stress, rendering them highly susceptible to burnout and negatively impacting quality of care and patient safety (1, 2). Considering high individual and societal burden and costs, feasible and effective approaches incorporating both individual and organizational aspects to prevent burnout are urgently needed. Mind-body medicine (MBM) can contribute significantly in antagonizing the multidimensional construct of burnout. Yet, integrative approaches are scarce (3, 4). This single-arm, multicenter, mixed-methods study investigated the acceptability and feasibility of a 9-week program (LAGOM: **L**ongterm **A**pproach and **G**uidelines for **O**ccupational Mental Health with **MBM**) designed to mitigate burnout among HCPs in preparation for a randomized controlled trial (RCT).

**Method:** Participants included HCPs working at the Charité – Universitätsmedizin Berlin, and the Immanuel Hospital, Berlin. Program development and evaluation followed an intervention mapping approach (5). Individual prevention was complemented by weekly organization-directed aspects. Study records were descriptively analyzed to assess recruitment, adherence, attrition, completeness of data collection and safety. Pre to post changes in burnout symptoms and work-related self-efficacy measured online with validated questionnaires were exploratively analyzed with paired sample t-tests. Semi-structured interviews were conducted and qualitatively analyzed. Further, the feasibility of electrophysiological measures was assessed.

**Results:**  $N=24$  HCPs (91.3% females, 65.2% nurses, 26.1% physicians) were included. The drop-out rate was 8%, intervention adherence was 79%. Of training completers, 86% filled out the questionnaires at post assessment. Pre-post exploratory analyses revealed improvement on burnout scales emotional exhaustion ( $\Delta\pm SD=-2.79\pm 5.63$ , Cohen's  $d=0.5$ , 95% Confidence Interval (CI) [0.01;0.97]), depersonalization ( $\Delta\pm SD=-1.47\pm 3.20$ ,  $d=0.46$ , 95%CI[-0.02;0.93]), personal accomplishment ( $\Delta\pm SD=0.16\pm 3.93$ ,  $d=0.04$ , 95%CI[-0.41;0.49]) and work-related self-efficacy ( $\Delta\pm SD=0.17\pm 0.39$ ,  $d=0.43$ , 95%CI[-.05;.90]). Interviews ( $n=4$ ) showed that most HCPs engaged well in the program, enjoyed the group sessions and found the offered activities meaningful. Interdisciplinary and collegial exchange was regarded as one of the most valuable aspects. Electrophysiological measures ( $n=14$ ) were rated as feasible and acceptable.

**Conclusion:** Findings provide evidence for the acceptability and feasibility of LAGOM in the healthcare setting and serve as a sound basis for a consecutive RCT. MBM presents a promising approach to add effective prevention measures to this field if based on rigorous scientific evidence.

**Trial Registration:** German Clinical Trials Register: DRKS00032014, registered 17th October 2023, <https://drks.de/search/de/trial/DRKS00032014>.

**Funding:** This work is part of a project funded by a German health insurance company (Techniker Krankenkasse) on burnout prevention among healthcare professionals at Charité – Universitätsmedizin Berlin. The funder has no influence on the contents and results of the present work.

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### Tangoing Through Treatment: The Impact of Tango Argentino on Quality of Life and Medication Adherence in Breast Cancer Patients

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**Introduction:** Breast cancer diagnosis and treatment are associated with psychological and physiological challenges. In addition, complex treatment regimens, side effects, and psychological distress have an impact on the medication adherence in these patients. Dance movement therapies, such as a six-week Tango Argentino (TA) course significantly improved fatigue and health-related quality of life (HRQL) of breast cancer patients. In the present study we evaluated the impact of an eight-week Tango Argentino course on the HRQL and the medication adherence among breast cancer patients undergoing therapy.

**Methods:** Primary Stage I-III breast cancer patients (ECOG 0-1) with first diagnosis at least six months before enrolment were eligible. The primary aim was to assess the improvement in self-reported HRQL after an eight-week Tango Argentino course. The secondary aim was to measure the self-reported standard medication adherence using the MARS-5 questionnaire. Statistical analyses were performed with R (version 4.1.3). Study's registration number: DRKS00013335.

**Result:** Of 225 women screened, 29 patients (12.9%) were suitable and willing to participate, with 27 (93.1%) receiving TA lessons. Significant clinical improvements were observed: over 30-point improvement in role functioning ( $p < 0.001$ ), over 15-point improvement in social functioning ( $p < 0.01$ ), and over 10-point improvements in sleep disturbance ( $p = 0.03$ ), as measured with the EORTC-QLQ-C30 questionnaire. The global health and quality of life dimension also improved ( $p = 0.01$ ). The MARS-5 score remained consistently high, greater than 23, indicating high medication adherence both at baseline and post-Tango. Further comparisons with a control group from the Network Oncology registry, an accredited oncological registry, who did not receive tango dance lessons, will be performed.

**Conclusions:** The study suggests that an eight-week Tango Argentino course significantly enhances the HRQL and maintains high medication adherence among breast cancer patients undergoing standard oncological treatment. With notable improvements in role and social functioning, sleep quality, and overall global health, Tango Argentino emerges as a promising dance movement therapy. These encouraging results pave the way for a multicentre study to further explore integrating TA into the routine care at other certified breast cancer centres, potentially offering a holistic approach to improving patient outcomes and well-being.

**Disclosure Statement:** FS reports grants from AstraZeneca, Abnoba GmbH, Iscador AG, and Helixor Heilmittel GmbH outside the submitted work. P.G. reports grants from Ipsen Pharma and Helixor Heilmittel GmbH outside the submitted work. The other authors declare no conflict of interest.

**Duncan LJ, Essery R, Johnson R, \*Huntley AL on behalf of the HAPPY team.**

### Heart failure and Participation in Physical activity (The HAPPY programme) -a focus on the role of mind-body therapies for people with heart failure.

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**Background and Introduction:** Our previous research identified the importance of self-management and empowerment for patients with advanced heart failure (HF) in terms of their physical symptoms, mental health, and quality of life. (DOI: 10.1136/openhrt-2020-001258). Our HAPPY patient advisory group endorse a holistic approach with a focus on support from professionals 'that know them'. The aim of the HAPPY programme is to design, implement, and test a novel intervention to support people with heart failure (PWHF) in being physically active, and to improve their wellbeing.

**Methods:** The HAPPY research programme works with health professionals, patients, and charity representatives. We will present part of this evidence that focuses on mind-body therapies (MBT) and a behavioural approach to intervention.

- An update of our previously conducted systematic review that included MBT for HF-related fatigue. (<https://doi.org/10.3310/nihropenres.13333.1>)
- An unpublished meta-aggregation and logic model based on the experiences of PWHF and their participation in physical activity including MBT.

**Results:** Systematic review evidence for MBT for HF-related fatigue comprises ten studies: 7 RCTs and 3 controlled trials: Individual trial data shows some positive impact of MBT on fatigue including Qigong, progressive muscle relaxation, mindfulness, and Cognitive Behavioural Therapy (CBT). Heterogeneity across intervention type, delivery and outcome measures prevented meta-analysis. Updating searches in June 2024 suggests potential further data is emerging around CBT, mindfulness, and yoga which may add to the evidence-base of MBT for HF-related fatigue.

A meta-aggregation & logic model of qualitative evidence with multidisciplinary stakeholder input has identified the behavioural determinants (e.g. physical issues, emotional response) that underlie the actions of PWHF around physical activity, and potential intervention components (e.g. tailored activity, advice & support).

**Conclusions:** The evidence for the efficacy of MBT for HF-related fatigue is modest. Yet MBT present a choice of promising, safe strategies, that could empower PWHF, and potentially help them with their fatigue. Coupled with an understanding of the behavioural determinants involved in physical activity participation, and the knowledge of potential component interventions, this could help us identify novel interventions for PWHF. An overview and update on this programme of work from a MBT perspective will be presented.

### Effectiveness of stress management and relaxation interventions for the management of hypertension and pre-hypertension: a systematic review and network meta-analysis

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**Background and objective:** Hypertension is a major risk factor for cardiovascular, cerebrovascular and peripheral arterial disease, and is estimated to affect more than a billion people worldwide<sup>1</sup>. Although medication is typically the mainstay of treatment, most international guidelines also recommend a number of lifestyle and behavioural modifications (such as advice on diet, physical exercise and smoking cessation)<sup>2</sup>. Historically, stress management and relaxation techniques have been used for blood pressure control. However, these techniques are not currently recommended in most clinical guidelines<sup>2</sup>. We aimed to summarise and compare the effectiveness of different relaxation techniques for individuals with hypertension and pre-hypertension.

**Method:** We conducted a systematic review of stress management and relaxation interventions for people with hypertension (BP  $\geq$ 140/90mmHg) and pre-hypertension (BP >120/80mmHg). We included interventions such as yoga, tai chi, mindfulness, meditation, and breathing control. The primary outcomes were systolic and diastolic blood pressure, assessed after at least four weeks of follow-up. Studies at high risk of bias were excluded from the primary analysis. Where possible, we synthesised the results using network meta-analysis – a technique which allows the comparative effectiveness of interventions to be estimated relative to every other intervention in the network, even in the absence of direct head-to-head studies.

**Results:** We included 182 studies. However, many studies were assessed to be at high risk of bias and were excluded from the primary analysis. At up to three months follow up, the majority of relaxation techniques were found to reduce blood pressure for people with hypertension. This effect appears to wane with time, although fewer studies conducted long term follow-up. Results for people with pre-hypertension were similar. Overall, the evidence was considered to be very-low certainty, due to concerns over a risk of bias in the included studies, and imprecision in the effect estimates.

**Conclusion:** Many stress management and relaxation techniques may have short-term beneficial effects on blood pressure for people with hypertension or pre-hypertension. However, the evidence is uncertain due to concerns over bias in the included studies. Future studies in this area should be carefully planned and conducted to reduce the risk of bias in the results.

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### Experience of nature is the moderator of the positive link between pausing in wondering awe and gratitude and psychological wellbeing

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**Background:** Pausing in wondering awe can be regarded as an indicator of non-religious spirituality related to the mindful experience of nature. These moments are more easily perceived in green and blue spaces than in urban environments areas. However, the impact of experiencing nature on psychological wellbeing, rather than only cognitively relating to nature to distance from daily life stressors, is unclear.

**Methods:** Cross-sectional survey among 521 participants (74% women; mean age 51± 13 years) with standardized instruments (i.e., Nature-relatedness (NR-6), Experience of Nature (ENS), Gratitude / Awe (GrAw-7), WHO-5 wellbeing index).

**Results:** ENS with its three subconstructs (Detachment/Relaxation, Fascination/Wondering, Responsibility), NR-6 and GrAw-7 scored altogether high in the sample and significantly ( $p < 0.001$ ) higher in women (ENS:  $\eta^2 = 0.055$ ; NR6:  $\eta^2 = 0.043$ ; GrAw-7:  $\eta^2 = .031$ ) and people of higher age (ENS:  $\eta^2 = 0.039$ ; NR6:  $\eta^2 = 0.051$ ; GrAw-7:  $\eta^2 = .035$ ). ENS and NR-6 are strongly related to Awe/Gratitude (GrAw-7:  $r = .55$  and  $r = .56$ ), but only the Awe/Gratitude is moderately related to wellbeing ( $r = .42$ ), while nature relatedness ( $r = .16$ ) and nature experiences ( $r = .19$ ) are only marginally related to wellbeing. Moderator analyses revealed that wellbeing is explained by Awe/Gratitude directly ( $\beta = 0.12$ ,  $p < 0.001$ ) and by Experiencing Nature ( $\beta = -0.88$ ,  $p = 0.05$ ), having approximately 29% of the variance explained ( $R^2 = .29$ ). The relationship between Nature Experience and Wellbeing is significantly mediated by Awe/Gratitude ( $\beta = 2.28$ ,  $p < 0.001$ ); the total effect of Nature Experience on Wellbeing is  $\beta = 1.40$  ( $p < 0.001$ ).

**Conclusion:** Being in nature and cognitively relating to nature alone has no relevant effect on wellbeing. Required is a mindful perception and resonance with nature as a space of encounter that triggers feelings of wondering awe and gratitude, which in turn has a positive effect on wellbeing.

### Development of an interdisciplinary, mind-body-medicine, self-help group program for post-COVID-19 syndrome: study design and feasibility of the NASH randomized controlled trial

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**Background and objective:** Patients suffering from post-COVID-19 syndrome often struggle to find effective treatments for persisting or newly developed symptoms after their acute COVID-19 infection. This is complicated by a still unknown and highly individual, multi-factorial pathogenesis. In such cases, extending pathogenic approaches by salutogenic ones that focus on mindfulness and complementary self-help strategies may be promising. Thus, we designed a mind-body-medicine group program and tested it for feasibility.

**Methods:** Based on the established MICOM program (Mind-Body Medicine in Integrative and Complementary Medicine), we developed a 10-week group concept combining elements of mind-body-medicine, Self-Help strategies from NATuropathy (NASH) and Traditional European Medicine as well as ear-acupuncture. The program lasted 6 hours/week and included medical group visits, behavioral change processes and self-help units by a specially trained nurse. It focused on following therapy pillars: nature-based/complementary stimulus-regulatory therapy and pacing, plant-based/wholefood nutrition and herbs, mindful relaxation and breathing as well as self-help techniques such as: Kneipp hydrotherapy, aromatherapy, cupping and compresses. We tested this program in addition to treatment as usual against treatment as usual alone within a randomized controlled trial.

**Results:** The NASH-study started in April 2023. With currently N=83 randomized of N=86 initially calculated patients (age:  $50.9 \pm 12.9$ , 20.5% male), recruitment of patients was feasible. The overall high attendance of  $7.5 \pm 3.3$  days of N=52 patients who finished the intervention also ensure the execution of the intervention according to protocol. With regular breaks, patients were very well able to complete all treatment modules and stay for the full 6-hour day. Dropout rates (N=4 versus N=3) as well as reasons for drop-out were comparable between groups and not associated with the respective study intervention. Beside the social support within a group of equally affected people, effective treatment mechanisms reported by the study patients included: pacing, mindful stress regulation, hydrotherapy, plant-based nutrition, and ear acupuncture

**Conclusion:** In patients suffering from post-COVID-19 syndrome, the NASH protocol is feasible and well accepted. Final data of the randomized trial will reveal, whether the developed intervention will be effective in reducing symptom burden associated with post-COVID-19.

**Trial registration:** NCT05798221

**Key words:** MICOM, Mind-Body-Medicine, Post-COVID, Traditional European Medicine, self-help strategies, self-efficacy

### A Systematic Review and Meta-Analysis of Yoga for Arterial Hypertension

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**Background and objective:** This systematic review and meta-analysis is an update to prior research to evaluate the quality of evidence for yoga as a therapeutic means in the management of prehypertension and hypertension.

**Method:** A database search for randomized controlled trials (RCTs) was performed. Medline/ PubMed, Scopus and the Cochrane Central Register of Controlled Trials (CENTRAL) were searched from their inception until April 5th 2024. We included RCTs that compared yoga to any control intervention in participants with diagnosed prehypertension (120–139/80–89 mmHg) or hypertension ( $\geq 140/\geq 90$  mmHg). Mean differences (MD) and 95% confidence intervals (CI) were calculated. Risk of Bias was assessed using the Cochrane tool. Quality of evidence was assessed according to the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach.

**Results:** 30 RCTs with 2283 participants were included. Very low quality of evidence was found for positive effects of yoga on systolic blood pressure (SBP) (26 RCTs,  $n=2007$ ; MD=-7.95 mmHg, 95% CI=-10.24 to -5.66,  $p<0.01$ ; heterogeneity:  $I^2=90\%$ ,  $\chi^2=253.38$ ,  $\tau^2=26.74$ ,  $P<0.01$ ), diastolic blood pressure (DBP) (23 RCTs,  $n=1836$ ; MD=-4.93 mmHg, 95% CI=-6.25 to -3.60,  $p<0.01$ ; heterogeneity:  $I^2=92\%$ ,  $\chi^2=273.31$ ,  $\tau^2=7.29$ ,  $P<0.01$ ) and heart rate (HR) (14 RCTs,  $n=1118$ ; MD=-4.43 mmHg, 95% CI=-7.36 to -1.50,  $p<0.01$ ; heterogeneity:  $I^2=88\%$ ,  $\chi^2=85.69$ ,  $\tau^2=16.82$ ,  $P<0.01$ ) compared to waitlist control. Compared to active control, very low quality of evidence was found for positive effects of yoga on SBP (5 RCTs,  $n=306$ ; MD=-4.16 mmHg, 95% CI=-10.76 to 2.44,  $p=0.22$ ; heterogeneity:  $I^2=87\%$ ,  $\chi^2=31.88$ ,  $\tau^2=47.55$ ,  $P<0.01$ ), DBP (5 RCTs,  $n=306$ ; MD=-1.88 mmHg, 95% CI=-3.41 to -0.36,  $p=0.02$ ; heterogeneity:  $I^2=0\%$ ,  $\chi^2=1.96$ ,  $\tau^2=0.00$ ,  $P=0.74$ ) and HR (2 RCT,  $n=128$ ; MD=-5.16 mmHg, 95% CI=-8.39 to -1.92,  $p<0.01$ ; heterogeneity:  $I^2=0\%$ ,  $\chi^2=0.01$ ,  $\tau^2=0.00$ ,  $P=0.94$ ). Overall, the studies showed a high degree of heterogeneity. The effects found were robust against selection, detection and attrition bias. Ten RCTs reported safety data.

**Conclusion:** Yoga may be a useful therapeutic means in the management of prehypertension and hypertension. Although the number of studies available has been growing throughout the last decade, more and larger high-quality studies are required to substantiate our findings.

### PATIENT SATISFACTION ON TRADITIONAL CHINESE MEDICINE TELEMEDICINE SERVICE DURING THE COVID-19 PANDEMIC: A CROSS-SECTIONAL STUDY

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**Background and objective:** Telemedicine appeared as a promising model for traditional Chinese medicine (TCM) services during the COVID-19 pandemic, for both COVID-19 and non-COVID patients. This study aimed to evaluate both types of patients' satisfaction with TCM telemedicine during the pandemic in Hong Kong.

**Method:** A cross-sectional study of 122 COVID-19 patients and 90 non-COVID patients who utilized a TCM telemedicine service during March–April 2022 was conducted. Telemedicine Satisfaction Questionnaire, consisting factors of Information Exchange and Patient Comfort, was administered via an online survey after video consultations. Patients' satisfaction on these aspects of satisfaction was assessed. Subgroup and linear regression analyses were conducted to explore patient characteristics associated with satisfaction with telemedicine.

**Results:** Overall patient satisfaction on Information Exchange was high ( $28.05 \pm 3.66$  out of 35), but rating on Patient Comfort was only mediocre ( $20.58 \pm 4.02$  out of 35), with a clear preference for face-to-face consultation. Compared to non-COVID patients, the total score for Information Exchange was slightly lower amongst those consulted for COVID-19, as a majority of them are new patients without per-existing relationship with the clinician. Satisfaction tends to be higher among patients who are younger, female, better-educated, employed, and had complete COVID-19 vaccinations.

**Conclusion:** Despite being fairly satisfied with the TCM telemedicine service, both COVID-19 and non-COVID patients expressed a preference for face-to-face consultation. While improving clinician-patient interaction during video consultation is expected to improve communication quality, it is expected that demand for face-to-face TCM services will rebound in the post-COVID era.

### **A novel didactical approach to university education regarding nutrition and fasting**

Daniela Koppold, Gonza Ngoumou, Carolin Breinlinger, Wiebke Stritter, Georg Seifert, Christian Kessler

Nutrition being of high significance for both individual and planetary health, and holding enormous potential for health systems worldwide, it seems to be carelessly neglected by most medical faculties globally. An interdisciplinary elective course was designed and conducted for medical students in the 8th semester to address this gap in our faculty at Charité - Universitätsmedizin Berlin. Developed iteratively following the Kern cycle for medical curricula, the module took into account modern teaching theories as well as feedback from students and teachers to advance methods and contents over the semesters, and underwent evaluation over two consecutive academic semesters using a mixed-methods approach in 2022 and 2023. Evaluation methods included quantitative questionnaires and qualitative interviews, with the primary outcome measure being the overall module rating. The two-week course (37.5 hours) aimed at participatively enhancing competencies in four main areas: understanding the role of nutrition in prevention and disease, exploring socioeconomical contexts of food production and consumption, motivational communication on healthy nutrition, and culinary medicine. Contemporary teaching methodologies such as the flipped classroom concept, multimedial station learning, quizzes, games including physical movement, patient interviews and problem-based learning as well as a simulation game on sociopolitical implication of nutritional strategies were employed. Feedback from participants positive, with 48.2% rating the course as "very good" and 29.6% as "good" (n=27). Moreover, there was a notable increase in the belief that nutrition influences health and disease, rising from 41.2% before the course to 74.1% after. In qualitative interviews with a subset of participants (n=8), the course content, structure, diversity, and positive group experience were appreciated. Overall, the course successfully addressed a critical gap in medical education and was met with enthusiasm by the majority of participants. Moving forward, there is a need to further refine and assess the implementation of skills and competencies related to nutrition within medical education.

### The Use of non-pharmacological Complementary Therapies in the German National Cohort Study (NAKO)

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**Background and objective:** For decades there has been a high use of complementary therapies (CT) for prevention and treatment purposes in Germany, in both, medical and non-medical settings. Recent surveys indicate a consistently high interest in CT use among patients suffering from psychological and chronic health problems. We aimed to find the patterns of CT use in the German National Cohort (NAKO), and to describe these distinct CT user groups in terms of their socio-demographic and disease characteristics.

**Method:** CT use was assessed during the NAKO baseline assessment at Berlin Mitte Study Center between 2016-2019. The assessment included an interview, self-completed questionnaires, and medical examinations. Additionally, the frequency of seven CT modalities (acupuncture, neural therapy, yoga, tai chi/qigong, meditation/mindful breathing, osteopathic manipulation, manual therapy/ chiropractic treatment) was assessed by questionnaire. Five distinct CT user groups were then defined based on the type and frequency of used CT modalities. The CT user groups were described and compared in terms of their demographics, socio-economic characteristics, and medical history.

**Results:** In total 1.970 NAKO study participants were included in the analysis (48.3% female). The 5 user groups consisted of 1) CT never users (N=941; 47.8%), 2) single CT rare (< monthly) users (N=283; 14.4%), 3) rare users of multiple CT (N=121; 6.1%), 4) frequent ( $\geq$  monthly) users of a single CT (N=199; 10.1%), and 5) frequent users of multiple CT (N=426; 21.6%). Most CT users (groups 2-5) were female (63.5%) and had completed university education (65%). CT users reported a higher percentage of mental health problems (7.5%-15.0% vs. 6.1%), including a history of depression, panic attacks, and anxiety compared to non-users (group 1). They also suffered at a higher rate from chronic back pain (19.8-31.7% vs 16.0%). We observed no relevant differences between the groups in terms of nephrological, gastro-intestinal, and tumor disorders.

**Conclusion:** These results confirm the health and demographic characteristics of CT users observed in other surveys. This is the first study to describe the health and demographic characteristics of a German population as part of a national cohort, showing differences in medical conditions between users of complementary therapies and non-users.

### Use and Acceptance of Traditional, Complementary and Integrative Medicine (TCIM) in Germany—an Online Representative Cross-sectional Study

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**Background and objective:** Older representative surveys show that Traditional, Complementary and Integrative Medicine (TCIM) is used by about 60% of the German population. However, no data exists for the current nationwide situation. The main aim of this cross-sectional study is to investigate the current use and acceptance of TCIM in Germany.

**Method:** This study is based on a representative sample of the German population aged 18-75 years. Participants were asked about the use and acceptance of TCIM. The survey was conducted online using Computer Assisted Web Interview (CAWI) in 2022 by three renowned German market research institutes on behalf of and in close coordination with the working group. The data set was analyzed descriptively and inferentially.

**Results:** In total, 4,065 participants (52% female, 48% male, 0.4% diverse) responded completely (response rate: 21.5%). Among participants, 70% stated that they had used TCIM at some point in their lives, with 32% doing so in the last 12 months and 18% currently. The most common reason given (17%) was musculoskeletal pain. For their own health, 39% stated that TCIM is important. Traditional European Medicine was rated as very/mainly effective by 27% of participants and as partly effective by 44% (conventional medicine: 69% very/mainly effective, 19% partly effective). As a complementary treatment strategy to conventional medicine, 35% considered TCIM to be optimal ("Complementary Medicine"), 33% in combination with conventional medicine ("Integrative Medicine") and 5% without conventional medicine ("Alternative Medicine"). The majority of the participants were in favor of more research on TCIM and stated that the costs of TCIM services should be covered by health insurance companies (71% and 69%, respectively).

**Conclusion:** These results from a representative online-population suggest that the use of TCIM in Germany remains at a high level. The nationwide relevance of TCIM should be given greater consideration in German health care policy making. TCIM should be systematically investigated using appropriate study designs and methods including high quality randomized clinical trials to investigate their effectiveness, efficacy, therapeutic safety and costs in the future.

### PROSPECTIVE OBSERVATIONAL STUDY OF ADVANCED OR METASTATIC LUNG CANCER PATIENTS TREATED WITH VISCUM ALBUM L. THERAPY IN COMBINATION WITH IMMUNE CHECKPOINT INHIBITORS

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**Background and objective:** Clinical experience with the addition of *Viscum album L.* extract (VA) suggests a positive effect in patients with advanced or metastatic non-small cell lung cancer (NSCLC). Recently was published that the addition of VA to immune checkpoint inhibitors (ICIs) correlates with improved survival in NSCLC (1). The primary objective of this study was to evaluate the tolerability, safety and efficacy profile of the combination therapy with VA and ICIs in NSCLC patients.

**Method:** A prospective longitudinal observational study was conducted with advanced or metastatic NSCLC, treated at a German lung cancer center. Patients were selected to receive a combined ICI and VA therapy according to oncology guidelines and tumor board recommendations. Clinical progression, tumor response rates, adverse events and overall survival were followed for at least six months and evaluated using descriptive statistics.

**Results:** A total of 104 patients with advanced or metastatic NSCLC were enrolled between 7/2016 and 1/2022 and 87 (86%) of the entire study cohort were treated with a combination therapy of ICIs and VA therapy. In a sub-analysis, 45 patients with programmed death ligand-1 (PD-L1) expression > 50% (median age = 69 years, 58% male, 13% ECOG: 2) who were treated with pembrolizumab in combination with VA as first-line therapy were evaluated. Adverse events of any grade were observed in 40 (89%) patients during treatment, including grade 3, 4 or 5 immune-related adverse drug reactions (iADRs) in 6 (13%) patients. At 6 months, 32 (71%) patients were alive, 25 (56%) patients had at least a partial remission at 3 months, and one (2%) patient had a complete remission at 6 months.

**Conclusion:** The feasibility analysis revealed that 86% of the entire cohort could be treated with a combination therapy of ICIs and VA. There was no increase in ADR rates in the study cohort; however, the incidence of irAEs in the subcohort treated with pembrolizumab in combination with VA appears to be lower and also the tumor response rate (56%) is higher than in comparable NSCLC studies treated with ICIs without VA (2, 3).

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**Discloser:** C.G. reports honoraria from AstraZeneca, Novartis, Chiesi, the German Society of Pneumology, Takeda, the German S3-Guideline on Complementary Medicine in the Treatment of Oncological Patients, the Brandenburgian Cancer Society, and outside the submitted work as well as grants from Wala AG, Iscador AG, and outside the submitted work. C.G. is a member of the European Respiratory Society, the German Society of Pneumology, the Health Care without Harm, the German Alliance for Climate Change and Health, and the Society of Anthroposophic Physicians. M.R. is an employee of the company Iscador AG. H.W. reports honoraria from AstraZeneca and Berlin-Chemie. H.M. has an endowed professorship at the Charité-University Hospital Berlin in Integrative and Anthroposophical Medicine, is a member of the board of directors at Weleda AG, a member of the board of the Hufelandgesellschaft e. V., and the president of the German Academy for Integrative Medicine. T.W. reports honoraria from AstraZeneca, Chiesi, Berlin Chemie, Boehringer Ingelheim, Stallergenes Greer, GSK. T. W. is a member of the European Respiratory Society, the German Society of Pneumology, the German Society of Allergology and Clinical Immunology, the European Society of Clinical Microbiology and Infectious Diseases, the German Society of Infectiology and the International Union against Tuberculosis and Lung Disease. The other authors declare that they have no competing interests.

### Non-invasive diagnostics of physiological networks in the field of integrative medicine

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**Background and objective:** Recent advances in biosignal processing for time series analysis, such as non-linear dynamics, information theory and network theory, are leading to a new sophisticated knowledge of network pathways and have provided new insights into changes in physiological networks under various physiological and pathological conditions, thus providing additional prognostic information.

**Method:** Several linear/non-linear univariate and multivariate approaches are available for the quantitative analysis of network pathways and their integrated interacting subsystems, such as the cardiovascular and cardiorespiratory systems. These approaches focus on the analysis of heart rate, blood pressure, pulse, respiration, electrodermal activity and central activity. In addition to linear approaches to heart rate variability (HRV) analysis in the time and frequency domains, a number of studies have suggested that non-linear dynamics approaches may be useful in the identification and differentiation of various cardiovascular disorders, and have suggested that they may prove clinically useful in differentiating disease progression. The importance of HRV as a tool for assessing autonomic nervous system activity in many different diseases and conditions has been steadily increasing. Autonomic imbalance towards sympathetic predominance has been shown to facilitate the onset of heart disease. Reduced vagally modulated HRV has been shown to be associated with increased cardiovascular morbidity and mortality.

**Results:** Exemplary results from different studies in the field of integrative medicine are presented and discussed. Here we present the effects of three different warming chest compresses on cardiovascular regulation in healthy subjects, the effects of yoga and mindfulness practices on the autonomic nervous system in primary school children, and the impact of meditation-based lifestyle modification in outpatients with mild to moderate depression by analyzing HRV.

**Conclusion:** We have demonstrated the usefulness of non-invasive diagnostics in various applications of cardiovascular time series analysis and have shown that this resource can make a significant contribution to better representation of integrative medicine.

### The Global Exposome: Compassionate Science, Sustainable Planet

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Exposomics and epigenetics are relatively new concepts in western science, but Traditional Chinese Medicine (TCM) practitioners have been investigating these areas for thousands of years.

In both new and ancient terms, health and disease are the result of equilibrium or disharmony within our body or between our bodies and the environment.

Regardless the terms we choose, there is no doubt that the health of our planet is intimately linked to our health and activities. Climate emergency, pandemics and pollution of our natural resources have an anthropogenic source.

In the presentation we will introduce the the Global Exposome, a project that provides a holistic view on the profound impact that our daily activities have on our health and the health our planet.

We'll talk about the ethical and sustainability issues derived from the current healthcare and economic model, intensive farming, animal experimentation in biomedical research and pharmaceutical industry as examples.

The Global Exposome focuses on compassion, respect, education and collaboration as the main pillars and building blocks for a modern, empathetic society. As scientists and integrative medicine practitioners, transmitting those virtues to our patients are therapeutic at both individual and collective levels.

We will finish the presentation with current examples of alternative, ethical, human relevant methods in biomedical research, the importance of open science, open access and collaboration within the scientific community. From organ-on-a-chip in cancer and dementia research, to projects that foster social inclusion and mental health in our societies.

### A SYSTEMATIC REVIEW OF TURMERIC /CUCURMIN FOR ORAL MUCOSITIS DUE TO RADIOTHERAPY AND/OR CHEMOTHERAPY FOR HEAD AND NECK CANCER

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**Background and objective:** Oral mucositis (OM) is oral mucosal damage caused by cancer treatment including radiotherapy and chemotherapy. It is a frequent, long-lasting adverse effect which causes pain, secondary infection, reduced oral intake and weight loss, reduced quality of life and increased healthcare utilisation. Various specific treatments are recommended in guidelines [1,2], but there is an urgent need for research into other effective, cost-effective and safe treatments, including phytotherapy.

Turmeric (*Cucurma longa*) is a rhizomatous herb whose main active component is curcumin, a mixture of several curcuminoids with antioxidant, anti-inflammatory, antimicrobial and wound healing properties [3]. This systematic review investigates its potential to reduce OM and secondary effects to inform future research.

**Method:** The databases Medline, PUBMED and CINAHL were searched using the terms curcumin AND cancer (neoplasms) AND mucositis (with no restrictions on publication date or language). Randomised clinical trials (RCTs) of any size were included. Previous systematic reviews were also checked. The Cochrane Risk of Bias method [4] was used to assess the quality of included trials, with two independent assessments and resolution of differences by consensus.

**Results:** Ten RCTs were identified, involving 553 participants (289 active, 264 control). In four RCTs, radiotherapy was the only treatment, whereas six involved a combination of radiotherapy and/or chemotherapy. Four RCTs used oral formulations (113 active, 93 placebo) with a maximum dose of 500mg three times daily. Six RCTs employed a topical mouthwash or gel (176 active, 171 control), given from three to six times daily (up to 3g daily), versus benzydamine, chlorhexidine, povidone-iodine and placebo controls. All RCTs appeared to suggest superiority of turmeric/cucurmin in outcomes such as severity and onset of OM, pain, dysphagia, weight loss, hospitalisation for OM and requirement for PEG feeding. Reporting of adverse effects was poor but no severe AEs were documented. Quality assessment identified six RCTs as “low risk” (including three of the four oral studies), two with “some concerns” and two as “high risk”.

**Conclusion:** Turmeric and cucurmin formulations, both topical and oral, appear to show promise for OM. Further research is needed to confirm effectiveness, optimal formulation and dose.

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### Effects of homeopathic dilutions on immunomodulation of the tumor microenvironment - Study in a multicellular 3D model

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**Introduction:** Some dynamized dilutions are prescribed in homeopathic medical practice to boost immunity. The immune system is a major component of the tumor microenvironment (TME) in which all cellular and non-cellular elements create a permissive environment for tumor progression. Endothelial cells, fibroblasts that synthesize the extracellular matrix, and cells of innate and adaptive immunity are all integral parts of the TME.

Our aim is therefore to evaluate the modulation of the immune components of the TME by using homeopathic dilutions, and an original multicellular spheroid model.

**Methodology:** In order to mimic the TME as closely as possible, we have developed a complex three-dimensional model involving three of its major players. In the first place, the spheroid is formed from colorectal cancer cells (HCT-116 or HT-29) and fibroblasts (Ccd18co), which synthesize the extracellular matrix. In a second step, the introduction of Peripheral Blood Mononuclear Cells (PBMC), purified from healthy donors, adds complexity to the model and provides the immune component. PBMCs are treated with homeopathic dilutions or with control. Then they are pre-activated for 24 hours with anti-CD3/anti-CD28, before being added to the spheroid. Using this model, we aim to measure the impact of homeopathic dilutions selected for their potential immunomodulatory properties on the immune components of the TME.

**Results:** By applying double-blind screening strategies, such as the assay of cytokines released by PBMC into the supernatant, or glycolytic activity of PBMC, we were able to identify 2 dynamized dilutions (3C and 9C) of the same homeopathic strain related to immunity in scientific literature, including inflammation and T-cell maturation. We were able to demonstrate the immunomodulatory effects of these 2 homeopathic dilutions, by measuring the activation rate of PBMCs populations and the modification of the 3D model organization induced by cell death from immune cells in the TME.

**Conclusion:** For the first time, these results have demonstrated a relation between known homeopathic dilutions in the modulation of immunity and their effects on innate and adaptive responses measured in a biological 3D multicellular tumoroid model.

### Premenstrual Syndrome: Design and Pilot Study of a Survey on the Use and Acceptance of Naturopathic and Complementary Medicine Approaches

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**Background and objective:** Premenstrual syndrome (PMS) affects up to 30% of women of reproductive age and can significantly impair their well-being, quality of life, and performance at work. These symptoms, both physical and psychological, occur in the second half of the menstrual cycle and end with the onset of menstruation. It is estimated that approximately 95% of women experience PMS at some point in their lives, with about 5% developing severe symptoms known as premenstrual dysphoric disorder (PMDD). The aim of this study is to evaluate the acceptance and use of naturopathic and complementary medicine approaches among women in Germany with PMS, to understand their preferences and experiences, and to improve the provision of future therapies.

**Method:** This study used a semi-standardized online survey method, characterized by a combination of predominantly quantitative and some open-ended questions. Before the main survey, a pretest was conducted with 32 affected women to verify the clarity and comprehensibility of the questions and response options. Subsequently, an anonymous, cross-sectional online survey was conducted among women suffering from PMS, mainly in self-help groups. The survey included questions about the therapies used, their perceived benefits, and the specific impacts of the symptoms on the participants' daily lives. The data are being analyzed using inclusion and exclusion criteria.

**Results:** A total of 271 women participated in the survey. The results provide detailed insights into the frequency and combinations of used naturopathic and complementary medicine approaches. Preliminary analyses suggest that certain naturopathic and complementary medicine methods are used more frequently and are perceived as particularly helpful by the respondents. The exact distribution of the used therapies and their perceived benefits will be presented in the final analysis (which will be completed by mid-July 2024).

**Conclusion:** The preliminary results of this study indicate that naturopathic and complementary medicine approaches play a significant role in managing PMS symptoms. The detailed analysis of the survey data is expected to provide valuable insights into the preferences and experiences of women with PMS in Germany, contributing to the improvement and development of future therapy options. The final results will be presented at the congress.

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### Use of traditional, complementary and integrative medicine for different diseases in Germany: a cross-sectional survey

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**Background and Objective:** For a health system to be responsive to its population's expectations, a detailed understanding of people's preferences for Traditional, Complementary and Integrative Medicine (TCIM) is needed. We aimed to assess TCIM use and usage patterns for different diseases from an online-representative sample of the German population.

**Method:** An online, cross-sectional survey of a representative sample of the German population aged 18–75 years was conducted using the Computer Assisted Web Interview (CAWI) method. Data were analyzed descriptively and inferentially.

**Results:** A total of 4,065 individuals (52% female) responded (response rate 21.5%). Seventy percent had used TCIM at some point in their lives, 32% in the last 12 months, and 18% used it currently. Over half (52%) had a mostly or very positive attitude towards TCIM.

The highest rates of TCIM use were reported for current or past acute respiratory illness (55.9%), chronic gastrointestinal illness (51.4%), acute gastrointestinal illness (49.2%), headaches (49.1%), and musculoskeletal pain (48.9%). Lowest rates of TCIM use were reported for mental illness (16.2%), cardiovascular illness (20.9%), childhood illness, and cancer (23.6% each).

A mean of 74.2% of those using TCIM for any illness reported benefit from it. Reported TCIM benefit was highest for current or past childhood illness (91.4%), acute gastrointestinal illness (85.4%), acute respiratory illness (84.5%), thyroid illness (78.9%), and cancer (76.9%). The highest likelihood of TCIM use for future illness was indicated for headache (58.4%), allergy (57.5%), skin affections (57.7%), musculoskeletal pain (55.2%), and acute gastrointestinal illness (51.8%); the lowest for cancer (29.0%), thyroid illness (32.8%), neurological illness (32.4%), and diabetes (39.1%).

**Conclusion:** These findings suggest that TCIM use for specific illnesses varied widely within an overall high use in the German population. Furthermore,

- TCIM is not only widely used and perceived beneficial for chronic conditions but also for acute illnesses, especially acute respiratory and acute gastrointestinal illnesses.
- TCIM use among cancer patients was lower than expected, but caution is needed in interpreting this due to the limited number of respondents with cancer (165).
- Participants' expectations of when they would use TCIM corresponded relatively well with what patients actually used it for.

### Evaluating the Efficacy of Multimodal Integrative Inpatient Therapy Incorporating Whole-Body Hyperthermia in Post-Covid Syndrome Patients: A Case Series Analysis

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**Background and objective:** Post-Covid syndrome (PCS) has posed a significant challenge since the onset of the COVID-19 pandemic. Numerous therapeutic strategies have been proposed and partially evaluated to address this complex condition. However, the effects of integrative therapy methods including Anthroposophic Medicine and whole-body hyperthermia (WBH), in the treatment of PCS are not well-documented. Understanding the potential benefits of these integrative approaches is crucial for improving patient outcomes.

**Method:** This retrospective study analyzed data from PCS patients who received inpatient treatment with a multimodal integrative therapy approach that included WBH. The primary outcome was the change in the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F) score between T0 (hospital admission) and T2 (four weeks post-discharge). Secondary outcomes included changes in the Fatigue Impact Scale (FIS-D), Multidimensional Dyspnea Profile (MDP), and Covid-Associated Symptoms (CAS) scores between T0 and T1 (at discharge) and T0 and T2.

**Results:** The study found a significant improvement in FACIT-F scores, with an increase from  $19.1 \pm 8.4$  at T0 to  $29.9 \pm 13.0$  at T2 ( $p < 0.001$ ), indicating a notable enhancement in health status. Additionally, significant improvements were observed in FIS-D and CAS scores between T0 and T2. However, improvements in dyspnea parameters were only significant between T0 and T1. Importantly, 61.3% of respondents reported WBH as an effective component of their treatment.

**Conclusion:** The findings from this study provide preliminary evidence supporting the potential positive effects of a multimodal integrative therapy approach, including WBH, for treating PCS. These encouraging results suggest that such integrative therapies may improve health outcomes in PCS patients. Nevertheless, future randomized controlled trials (RCTs) are necessary to validate these findings and identify the specific contributions of each therapy component to the overall treatment efficacy.

### Evaluation of mindfulness training by 247 medical students

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**Background and objective:** Objective: Evaluation of the quality of different variations of mindfulness training in medical students at the University Hospital of Ulm (Germany). In addition, qualitative post-course reflections will be shared.

"It is not without reason that the burnout risks and turnover rates and intentions of physicians and nurses are among the most frequently reported challenges and studied outcomes in healthcare and hospital settings. Both stress reactions, burnout and leaving the organization or profession, pose major challenges to the healthcare system." (Hämming et al., 2018, p.2)

**Method:** Based on the course evaluation at the medical faculty of the University of Ulm, the results of according questionnaires - respecting 4 dimensions surveyed over 11 items, as well as additional prosaic quality feedback and an overall rating - were analyzed.

**Results:** Out of 597 medical students - a total who were trained in integrative medicine within 12 semesters (49.75 medical students/semester) - 323 medical students (15.1 participants/course) were trained in the method of Mindfulness-Based-Stress-reduction (MBSR) - according to Jon Kabat-Zinn, whereby students' response of 247 participants (76%) could be consecutively evaluated. The evaluation of one of those courses - Mindfulness-based Stress Reduction (N=61) - over seven semesters, considering a maximum of 6 achievable points, resulted in a mean value in terms of organization and structure ( $5.7 \pm 0.7$ ), teaching engagement ( $5.8 \pm 0.6$ ), teaching goals and contents ( $5.7 \pm 0.8$ ), and didactical implementation ( $5.8 \pm 0.7$ ). The assessment of this entire course by the participants using a numerical rating scale (1 = very good and 6 = failed) was very good ( $1.2 \pm 0.5$ ).

**Conclusion:** Thus, the course evaluation and qualitative feedback of 247 participating medical students on MBSR was very good. Quality feedback based on individual prosaic statements regarding the training of mindfulness was experienced enormous essential, as stress reducing, and supported the experience of "being accepted as I am." Therefore, further evaluation regarding the potential of stress reduction, reducing burn out rate and increasing the rate of adherence to the medical students training should be focused on future research.

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### Yoga and pranayama as health tools, a systematic review

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**Background and objective:** The health benefits of yoga are widely commented and discussed. Taking into account that it is a complex and ancient discipline, we can think that personalized yoga training by professionals can have a positive impact on health and even be a key tool. The objective of this systematic review is to analyze the state of the art regarding yoga as therapy and to analyze in which pathologies its therapeutic potential is most evaluated and demonstrated.

**Method:** A bibliographic search is performed for articles in PubMed in the last 10 years that include the words “yoga” and “pranayama”. In total, 25 articles were analyzed, including: clinical trials, meta-analysis, randomized controlled trials and systematic reviews.

**Results:** Health benefits of yoga practice are found in all selected articles.

The health conditions addressed in the literature analyzed are very heterogeneous, including: hypothyroidism, cardiovascular health, cognitive functions and mood, sleep disorders, menopause symptoms, menstrual disorders, prenatal depression, respiratory problems, chronic obstructive pulmonary disease (COPD), bronchial asthma, nausea and vomiting in patients undergoing chemotherapy, multiple sclerosis, glaucoma, mental health, professional burnout, diabetes prevention, stress and cognition.

One of the articles reports a significant improvement in inflammatory markers (IL-6, Cortisol, and TNF- $\alpha$ ) (1).

A pilot randomized controlled trial finds significant reduction in levels of interleukin (IL)-1 $\beta$ , IL-8, and monocyte chemoattractant protein -1 (MCP-1) in Yoga Breath group when compared to Attention Control group, using saliva to measure changes (2).

**Conclusion:** Yet the available studies are heterogeneous. There is little scientific literature to evaluate the impact of yoga on health for each specific pathology.

More studies are necessary to understand the true potential of yoga for health. With current scientific evidence, personalized yoga applied by professionals could be truly useful and enriching.

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### The effectiveness of group and individual training in Emotional Freedom Techniques for patients in remission from melanoma

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**Background:** The wellbeing of melanoma patients may be compromised by disease management, fear of cancer recurrence, medical follow-up regimens, and adherence to sun exposure practices. Developing positive coping strategies is of particular importance in melanoma patients since they remain at risk of cancer recurrence for extended periods following treatment.

**Objectives:** To test the benefits of an evidence-based self-help stress reduction method, Emotional Freedom Techniques (EFT) in survivors of cutaneous melanoma, and to contrast its effects on well-being and perceptions of cancer recurrence when delivered in group format versus individual instruction.

**Methods:** Fifty-three patients (72% female, mean age  $62\pm 12$ ) diagnosed with melanoma at least 6 months prior were recruited from a private skin cancer clinic. Participants were randomized into three conditions: group EFT (G-EFT;  $n=16$ ), individual EFT (I-EFT;  $n=18$ ), both provided in four weekly sessions, and a wait list control (CC;  $n=19$ ). Measures including perceptions of cancer recurrence, affect, wellbeing and fear of recurrence were obtained pre-post and at 3 month follow-up. Subjective units of distress (SUD) were recorded at the beginning and end of each session. At posttest and follow-up, participants answered open-ended questions about their experience and satisfaction with EFT training.

**Results:** Clinically and statistically significant decreases in SUD scores were observed in both EFT groups. Two-way repeated measures ANOVAs revealed significant improvements from pre to post in both EFT groups in participants' understanding of how to prevent recurrence, and in spiritual well-being. Statistically nonsignificant effects were found for fear of recurrence, illness perception and affect. Open-ended responses showed that 81% of the G-EFT and 89% of the I-EFT group reported positive changes and satisfaction posttest, while at follow-up, 97% recommended the intervention for other melanoma patients.

**Conclusions:** The findings provide support for offering EFT instruction as a nonpharmacological and noninvasive self-help method, preferably shortly after diagnosis. Results also indicate that EFT is effective when delivered in either group or individual format

### Unveiling the Potential of Hyperthermia: A Therapeutic Approach for Longevity and Cellular Resilience

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Hyperthermia, the controlled elevation of body temperature, is gaining attention as a potential medical intervention due to its ability to activate cellular stress responses relevant to longevity and disease prevention. Our investigation explores the scientific basis for considering hyperthermia as a therapeutic approach, focusing on its effects on mitochondria, the immune system, and its potential benefits for healthy aging.

Firstly, hyperthermia shows promise in mimicking the benefits of exercise [1]. Studies show that mild hyperthermia can engage similar cellular stress response pathways as physical activity, enhancing cellular repair mechanisms and promoting mitochondrial health. Mitochondria play a crucial role in various aging processes, and by promoting mitochondrial biogenesis and improving function, hyperthermia may enhance cellular resilience and extend health span.

Moreover, hyperthermia therapies have been shown to stimulate the immune system [2]. Research indicates that hyperthermia induces the production of heat shock proteins (HSPs) within cells, which assist in protein folding and repair, thereby strengthening the immune response. Given the importance of a robust immune system in maintaining health throughout life, the immunomodulatory effects of hyperthermia are particularly relevant in the context of healthy aging.

Additionally, some studies suggest that hyperthermia may offer benefits in neurodegenerative diseases by improving cognitive function and promoting neurogenesis [3]. Although not directly linked to lifespan, these findings are significant in longevity research as they suggest that hyperthermia could enhance cognitive health during aging.

In summary, hyperthermia's ability to mimic exercise benefits, enhance mitochondrial function, and modulate the immune system highlights its potential as a therapeutic intervention for promoting longevity and cellular resilience. While further research is needed to fully understand its mechanisms and potential applications, current evidence suggests that hyperthermia could be a valuable approach to supporting healthy aging and mitigating age-related diseases.

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### Concentrated Growth Factor Application via Acupuncture Points for Effective Cosmetic Application

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In recent studies, it has been determined that acupuncture points, when evaluated histologically and electrically, are dense with sensory receptors and capillaries, especially noci receptors, with low electrical resistance and high conductivity, and with a higher potential compared to normal skin. Due to these features of acupuncture points, I think it would be very appropriate to inject concentrated growth factor through these points. All of the acupuncture points I use on the face in this application are points used in cosmetic acupuncture. The application is performed by injecting the plasma rich in growth factors, obtained by centrifuging the blood taken from the person to be treated, into the acupuncture points determined on the face with a special technique. Plasma rich in growth factors contains tissue repairing factors such as platelet-derived growth factor, vascular endothelial growth factor and basic fibroblast growth factor. With plasma injection rich in growth factors applied through acupuncture points on the face, it strengthens skin tone, it gives elasticity to the skin, increases blood supply to the skin, eliminates small wrinkles. I think that the injection of growth factor-rich plasma accelerates and strengthens this skin regeneration. I think that when only cosmetic acupuncture is applied to people, it will be an effective treatment in at least 10 sessions. However, when both cosmetic acupuncture and CGF are applied on acupuncture points, I think that the number of sessions can be reduced to 4 and the effect will be stronger.

**Keywords:** Cosmetic Applications, Acupuncture Point, Growth Factors, Regeneration, Skin

### Acupuncture vs Sham acupuncture in the treatment of cellulitis in hospitalized patients: Preliminary results of a randomized controlled trial

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**Introduction:** Cellulitis is an acute infection of the skin. Although antibiotics are effective, the response to treatment in hospitalized people is often slow and associated with prolonged pain and reduced mobility. Acupuncture has been investigated in both infectious and dermatologic diseases with positive results. However, to our knowledge, the efficacy and safety of acupuncture in the treatment of cellulitis have not yet been investigated. We aimed to evaluate the efficacy of the addition of acupuncture to standard-of-care (SOC) for treatment of cellulitis in patients hospitalized in internal medicine departments.

**Methods:** In this randomized sham-controlled trial, patients hospitalized with cellulitis in internal medicine departments at Bnai Zion Medical Center, were randomized to sham acupuncture with SOC or acupuncture with SOC. The true acupuncture treatment was performed by needling acupoints according to Traditional Chinese Medicine (TCM). The sham treatment included placing plasters on ear-points that have no relevance to skin conditions. The treatment protocol included three consecutive daily sessions in both groups. The primary outcome was change in the size of the inflamed area, and the cellulitis score (combination of heat, redness, and tenderness etc.) at day 4 of hospitalization. Secondary outcomes included systemic effects of cellulitis (e.g. vitals signs, inflammation markers), length of hospital stay, pain, and rate of improvement along hospitalization.

**Results:** 32 patients participated in the study: 18 were treated with acupuncture while 14 received sham procedure. In the acupuncture arm, the size of the inflamed area and pain improved significantly ( $p=0.015$ ;  $p=0.0125$  respectively). There were no differences in leukocytes change or days of hospitalization. CRP and cellulitis index showed a positive tendency without significance ( $p$ -value= $0.09$ , and  $0.15$  respectively).

**Conclusion:** Interim analysis indicates that acupuncture may positively impact the resolution of cellulitis signs and symptoms. However, final confirmation of these findings requires the completion of the study.

### Association of healthy lifestyle behaviours with incident irritable bowel syndrome: a large population-based prospective cohort study

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**Background and objective:** Currently, there is no established primary prevention strategy for irritable bowel syndrome (IBS). Modifiable healthy lifestyle behaviours may also protect against the occurrence of IBS. However, their combined association with the incidence of IBS is currently unknown. The aim of this study was to evaluate the association of healthy lifestyle behaviours with the incidence of IBS.

**Method:** This was a population-based prospective cohort study using data from the UK Biobank. 64,268 participants aged 37 to 73 years who had no IBS diagnosis at baseline were enrolled between 2006 and 2010 and followed up to 2022. The five healthy lifestyle behaviours studied were never smoking, optimal sleep, high level of vigorous physical activity, high dietary quality, and moderate alcohol intake. The outcome was the incidence of IBS. Cox proportional hazards regression model was used to estimate the hazard ratios (HR) and 95% confidence interval (CI) for their associations.

**Results:** During a mean follow-up of 12.6 years, 961 (1.5%) incident IBS cases were recorded. Among the 64,268 participants (mean age 55.9 years, 35 342 (55.0%) female, 7604 (11.8%) reported none of the five healthy lifestyle behaviours, 20,662 (32.1%) reported 1 behaviour, 21,901 (34.1%) reported 2 behaviours and 14,101 (21.9%) reported 3 to 5 behaviours at baseline. The multivariable adjusted HRs associated with having 1, 2, and 3 to 5 behaviours for IBS incidence were 0.79 (95% CI 0.65-0.96), 0.64 (95% CI 0.53-0.78), and 0.58 (95% CI 0.46-0.72), respectively (P for trend<0.001). Never smoking (0.86, 95% CI 0.76-0.98, P=0.02), high level of vigorous physical activity (0.83, 95% CI 0.73-0.95, P=0.006), and optimal sleep (0.73, 95% CI 0.60-0.88, P=0.001) demonstrated significant independent inverse associations with IBS incidence. No significant interactions were observed between these associations and age, sex, employment status, geographic location, gastrointestinal infection, endometriosis, family history of IBS or lifestyle behaviours.

**Conclusion:** Adhering to a higher number of healthy lifestyle behaviours is significantly associated with a lower IBS incidence in the general population. Our findings suggest the potential of lifestyle modifications as a primary prevention strategy for IBS.

### The Impact of Traditional, Complementary and Integrative Medicine use on the Health-Related Quality of Life – Results from a large Cross-Sectional Representative Online Survey in Germany

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**Background and Objective:** Traditional, Complementary and Integrative Medicine (TCIM) is widely prevalent in Germany. A recent cross-sectional study explored among other the relationship between TCIM use, health-related quality of life (HrQoL), burden of disease, social milieus (Sinus-Milieu®) and sociodemographic characteristics. The survey was conducted in 2022 in a population-representative sample of German adults.

**Methods:** This study utilized online computer assisted web interview (CAWI) and included 4,065 German-speaking participants (age 18-75years). HrQoL was assessed by the EuroQol five-level five-dimensional questionnaire (EQ-5D-5L), which provides an index score anchored between 0 (dead) and 1 (full health). Descriptive and inferential analyses were performed on the dataset.

**Results:** 70% of the respondents stated to have used TCIM at some point in their lives. Within the last 12 months, 32% had used TCIM, and 18% were current users. The mean EQ-5D-5L index score (EQ-Index) for the total sample was  $0.85 \pm 0.21$ . The overall mean EQ-Visual Analog Scale (EQ-VAS) score was  $68.2 \pm 22.3$ . Female gender (52%) and increasing age were associated with a significantly lower EQ-Index. Higher education and total income were significantly associated with a higher EQ-Index. The Precarious Milieu was the Sinus milieu® with the lowest EQ-Index score ( $0.75 \pm 0.27$ ) while the Performer Milieu had the highest EQ-Index score ( $0.91 \pm 0.17$ ). Patients with neurological diseases (n=172) had the lowest EQ-Index score ( $0.69 \pm 0.30$ ). If patients had several diseases, the combination of painful disorders of the musculoskeletal system, mental illness and diabetes mellitus (n=63) gives the absolute lowest value ( $0.48 \pm 0.34$ ). Participants who used TCIM within the last 12 months had a higher disease burden and a significantly lower EQ-Index compared to non-users ( $0.82 \pm 0.23$  vs.  $0.87 \pm 0.19$ ;  $p < 0.001$ ; percentage of diseases 19.8% vs 15.9%).

**Conclusion:** The study highlights that socioeconomic and sociodemographic factors (total income, age, gender, and Sinus milieu® affiliation) and burden of disease significantly influence HrQoL. The observed association between lower HrQoL and higher TCIM use aligns with previous research and suggests an additional need for unconventional medical care beyond conventional practices. The implications from this results should explored by further studies.

### ASSESSING HOW COMPLEMENTARY AND INTEGRATIVE HEALTHCARE COUNSELLING AFFECTS THE PERCEIVED SEVERITY OF SELF-REPORTED UNMET NEEDS IN CANCER PATIENTS

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**Background and objective:** Effective and targeted communication between patients and healthcare providers is more important than ever. However, patient-centered discussions about unmet needs are scarce, so standardized assessment of patient's unmet needs becomes essential for care planning and treatment. Within the CCC-Integrativ project<sup>[1]</sup> patients received interprofessional counselling about the potential use of complementary and integrative healthcare (CIH) and self-reported unmet needs were systematically assessed over time using the Measure Yourself Concerns and Wellbeing (MYCaW)<sup>[2]</sup> questionnaire. The MYCaW was developed expressly to measure unmet needs in patients undergoing cancer care with complementary therapies. The aim of this study is to examine how counselling on CIH affects perceived severity of self-reported unmet needs over time.

**Method:** The MYCaW was applied during the CCC Integrativ study at three time points. At baseline, patients reported their one or two most prominent unmet needs and rated the severity of those concerns at this and subsequent time points (T1: baseline; T2: midline; T3: 6-month follow-up). Generalized estimating equations (GEEs) with exchangeable correlation structure were performed to determine the evolution of perceived severity of these unmet needs over time in the control and intervention groups. Another GEE was performed to assess whether these effects differed significantly in the control versus intervention groups.

**Results:** A total of 668 participants (intervention 485; control 183) were included in the analysis. Of these, 209 participants (intervention 126; control 83) reported only one major unmet need, the rest reported two. The GEEs revealed that perceived severity of unmet needs sank significantly in both groups and across all time points ( $p < .003$ ), with the largest effects in the intervention group ( $t = 168.245$ ;  $p < .001$ ). An additional GEE determined that the perceived severity of unmet needs sank significantly more in the intervention group compared to the control group while the intervention was taking place (from T1 to T2;  $p < .001$ ).

**Conclusion:** Interprofessional counselling on CIH enhances the overall well-being of cancer patients by effectively mitigating the severity of their unmet needs. Addressing patient's concerns and open provider-instigated dialogue about the use of CIH in cancer care should be promoted and integrated into the current healthcare system.

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### Reasons for Encounter and recommended Complementary Interventions in Breast Cancer Patients within an Interprofessional Evidence-Based Counseling Program for Complementary and Integrative Healthcare ('CCC-Integrativ')

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**Background and Objective:** Up to 80% of breast cancer patients (BCP) use or wish to use complementary and integrative healthcare (CIH). However, evidence-based CIH-consultations are rarely implemented. We conducted a controlled implementation study for an interprofessional evidence-based counseling program for CIH in outpatient care (CCC-Integrativ). A total of n=1,128 oncology patients (control group=443, intervention group=685 with n=300 BCP) at four university hospitals in Baden-Württemberg, Germany, were advised. The main objective was to increase patient activation. Within the present analysis we investigate the reasons for encounter (RfE) and which CIH-interventions were recommended to the BCP.

**Method:** Prior to the study, 20 common symptoms experienced by cancer patients were defined. A multi-stage Delphi process was used to define specific CIH interventions for their treatment, based on available evidence from trials and expert knowledge. Criteria for selection included efficacy, safety, ease of use and cost-effectiveness. Every patient received three counselings from a trained interprofessional team with a variety of CIH-Interventions. The consultation letters of each counselling were analyzed using qualitative and quantitative content analysis and classified with the International Classification of Primary Care.

**Results:** 828 consultation letters of 276 BCP in the intervention group were included (drop-out n=24 (8%)). 2036 RfE were documented (7/pat). The most frequent RfE was fatigue (61%), followed by polyneuropathy (47%), skin reactions (45%), sleep disorders (43%) and others.

A total of 4,122 CIH interventions were recommended (15/patient). The recommendations covered lifestyle topics (diet (94% of patients), exercise (91%) and relaxation techniques (80%)). In addition, all patients received a variety of specific CIH recommendations adapted to their specific RfE: non-pharmacological interventions (99%) and external applications (98%) were the most frequent, followed by acupressure (82%) and medicines & teas (79%).

**Conclusion:** Interprofessional, evidence-based counselling on CIH interventions covers a wide range of frequent RfE for BCP in outpatient care. It integrates medical and nursing aspects into a comprehensive treatment concept. The recommended CIH interventions range from lifestyle recommendations to specific complementary interventions which can be used for common side effects of oncological therapy in BCP. Most of the CIH-Interventions can be carried out independently by patients, promoting patient activation.

### Evaluation of complementary and integrative medicine (CIM) in undergraduate medical education - A systematic review to identify evaluation instruments

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**Background and objective:** Different complementary and integrative medicine (CIM) curricula – both internationally and in German-speaking countries – can lead to considerable differences in the level of knowledge and attitudes towards CIM among medical students.(1,2) Evaluation of the current courses is necessary for the further development and continuous improvement of the CIM courses for medical students. Such evaluations help to identify suitable framework conditions and to refine content and teaching methods. The aim of the systematic review was to identify evaluation instruments for teaching CIM to medical students. Moreover, the quality of the validated instruments was assessed.

**Method:** A systematic review was conducted to identify CIM teaching evaluation tools in the databases PubMed/MEDLINE, LIVIVO, CINAHL, Scopus, Web of Science and Ovid/Embase. At least two researchers per record screened the titles/s and the full texts in blinded mode using the online tool Rayyan. The instruments extracted from the studies were classified according to the Kirkpatrick (3) learning-outcome model, extended by the aspect of needs analysis (motivation, expectations, exposure). A second instrument was used to assess the quality of the validated instruments on the basis of nine criteria (including design, methods and results of the studies).(4)

**Results:** A total of 2,329 publications were identified, 263 publications were included in the full-text screening, whereof 100 publications were included in this review. 15 validated instruments were used in 27 studies; seven further instruments suitable for qualitative research were identified. In addition, we found 66 non-validated instruments, (mainly for quantitative research), often with free text options. Most of the included studies were cross-sectional studies, but 38 studies were intervention studies. Measured against the nine quality criteria, the analyzed, validated questionnaires achieved less than half (7-9) of the maximum achievable score of 18. None of the instruments is suitable to assess the Kirkpatrick level 4.

**Conclusion:** This systematic review of evaluation instruments that have been developed and/or used to evaluate teaching CIM for medical students shows a lack of validated high-quality evaluation instruments. Further questionnaires for evaluating CIM teaching in medical students which also enable to assess the Kirkpatrick level 4 should be developed and validated.

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### PSYCHOMETRICS OF A GERMAN VERSION OF THE NEEDS EVALUATION QUESTIONNAIRE (NEQ-25-G) FOR OUTPATIENT CANCER PATIENTS

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**Background and objective:** Cancer patients often turn towards complementary methods which they perceive to address needs that are not being met by the health care system. The Needs evaluation Questionnaire (NEQ) has been used in clinical practice and research to evaluate the unmet needs of hospitalized cancer patients. It consists of 23 items with dichotomous values (Yes / No).<sup>1</sup> Previous psychometric analysis of the NEQ identified five latent factors measured by the questionnaire.<sup>2</sup> To date, the NEQ has been used in Italy and Poland.<sup>3</sup> A German version was not available. The aim of this study was to investigate the psychometric properties of the German version of the NEQ in an outpatient setting.

**Methods:** For the purposes of the CCC-Integrativ study in the state of Baden-Württemberg, Germany, the NEQ was translated into German (forward-backward translation) and four new items were added to represent the outpatient setting.<sup>4</sup> The dataset included baseline data from 888 outpatients with cancer, who received interprofessional counselling on complementary and integrative healthcare (CIH).

760 complete cases were included in the analysis. One item was excluded from the analysis due to item-values and identified limitations in use for outpatients. Tests for sphericity were performed. The sample was randomly split into two subsamples. The first subsample was used for exploratory factor analysis (EFA). The second subsample was used for confirmatory factor analysis (CFA) on a model emerging from the EFA. Internal consistency was measured with McDonald's Omega.

**Results:** The EFA suggested a five-factor structure within the German NEQ. One more item was excluded after inspection of modification indices. The EFA-based model showed good fit indices in CFA (CFI = 0.986; TLI = 0.984; RMSEA = 0.042; SRMR = 0.057). All four additional items were successfully integrated in the factor structure. McDonald's omega within the factors ranged between 0.88 - 0.54. The latent factors being measured were labeled "Informative and communicational needs", "Needs of financial and daily life management", "Needs related to assistance / care", "Relational needs" and "Needs for psychoemotional support".

**Conclusion:** The German NEQ-25-G shows adequate psychometrics to evaluate the unmet needs of cancer patients in an outpatient setting.

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### Internal Coherence Scale: concept and clinical application – a useful questionnaire for research in integrative medicine?

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**Background:** In the context of epidemiological and clinical studies there is emerging interest in the assessment of health resources and salutogenesis research. Therefore, the concept of Sense of Coherence (SOC) has attracted growing scientific interest in recent years. Antonovsky described SOC as three factors (comprehensibility, meaningfulness and manageability) which could not be confirmed through factor analysis of SOC-questionnaires. A further limitation for clinical application is the measurement of past states. Hence, the Internal Coherence Scale (ICS) was developed as clinical instrument for cancer patients, other conditions and healthy individuals.

**Methods:** In this narrative review, we provide an overview of the current evidence of ICS in terms of reliability, validity and clinical application.

**Results:** The ICS is a compact two-factorial 10-item inventory with the subscales 'Inner Resilience and Coherence' and 'Thermo-coherence' with robust reliability (internal consistency:  $r_{\alpha} = 0.91$ , test-retest reliability:  $r_{rt} = 0.80$ ) and validity. Validation studies in the field of further medical indications have demonstrated sufficient reliability for groups aged 19 to 96 years. In addition, an English version has been validated and a Dutch validation study is currently being conducted. Healthy individuals report higher ICS-scores than diabetes-, breast cancer (BC)-, or cancer patients. However, older long-term cancer survivors reveal high ICS-scores. In addition, in cancer patients undergoing chemotherapy (indicating reduced ICS-values) and mistletoe therapy sensitivity for change has been found for ICS. Patients with BC who display higher ICS-scores are more likely to decide to undergo recommended adjuvant chemotherapy. Additionally, thermo-coherence is high in BC-patients treated with mistletoe therapy. BC-patients with cancer-related fatigue show a better long-term ICS-improvement under a multimodal/combination therapy when compared to aerobic training, indicating improved self-management skills. mindfulness-oriented treatments improve ICS-scores in patients with chronic lower back pain. Furthermore, ICS shows correlations with higher autonomic regulation, quality of life, thermoregulation, personality- and health markers.

**Conclusions:** The Internal Coherence Scale is a two-factor, resource-oriented salutogenetic questionnaire with robust reliability, validity and responsiveness to change in patients with cancer and other chronic conditions under different treatment modalities.

### Enhancing Patient Activation: Impact of an Interprofessional Counseling Program on Complementary and Integrative Healthcare (CIH) at Comprehensive Cancer Centers (CCC-Integrativ Study)

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**Background and objective:** Complementary and integrative healthcare (CIH) presents an opportunity to empower and activate cancer patients. Research indicates that higher patient activation correlates with enhanced quality of life, better health outcomes, and lower healthcare costs. The CCC-Integrativ study developed and evaluated a patient-centered, interprofessional and evidence-based CIH counseling program at four Comprehensive Cancer Centers (CCC) in Baden-Wuerttemberg, Germany.

**Method:** CCC-Integrativ was a controlled implementation study that involved three tailored CIH consultations for cancer patients within three months, delivered by specially trained teams of physicians and nurses. Data were collected before the counseling sessions (baseline, T1), and after three (T2) and six months (follow-up). The primary endpoint was patient activation measured by PAM-13 at T2. Secondary endpoints included quality of life (EQ-5D), self-efficacy (SES6G), Fatigue (EORTC-QLQ-FA12) and Depression-Scores (PHQ-9). The control group (CO) was a convenience sample of matching cancer patients and received routine care.

**Results:** The study included 1,128 oncology patients (CO=443, IG=685) with various tumor types and stages in an outpatient setting. The overall mean baseline PAM-13 score was 69.74 (SD=14.24) (n=959, 85%). A significant between-group difference in PAM-13 scores at T2 was found ( $F_{\text{group}(1, 1866.82)}=8.634, p=0.003$ ), with an adjusted mean difference of 2.22 PAM points. Age, gender, tumor entity, disease stage, or CCC study site did not significantly predict PAM-13 scores at T2. The difference-in-differences (DiD) of the secondary outcomes between the intervention group (IG) and the control group (CO) from T1 to T2 was statistically significant, favoring the IG.

**Conclusion:** The CCC-Integrativ Study, to our knowledge, is the largest cohort of cancer patients assessed with PAM-13 in a pre-post design. Tailored CIH counseling provided by specially trained interprofessional teams can improve patient activation. Given the positive effects of patient activation, the implementation of such an interprofessional counseling program in cancer centers could benefit both patients and the healthcare system.

### Use of and attitudes toward integrative medicine and nursing among employees of a German university HOSPITAL

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**Background and objective:** The relevance of complementary and integrative medicine (CIM) at German university hospitals from the patients' perspective has been demonstrated [1]. In contrast, there is limited research on the knowledge, attitudes, and use of CIM among German hospital staff [2, 3]. Staff acceptance is essential for meeting patient needs and integrating CIM into daily clinical practice. In light of the aforementioned considerations, the objective of this study was to assess the utilization and attitudes towards CIM, with a particular focus on the implementation of integrative nursing (IN) among employees of a German university hospital.

**Method:** A cross-sectional study was conducted in 2022 among employees of a university hospital using an online survey. The attitudes of the respondents toward CIM were evaluated using a self-developed questionnaire comprising three sections: demographics, CIM, and IN for inpatient care. Univariate analysis of frequencies and cross-tables with Chi-Square tests were performed using IBM SPSS Statistics 28.0.

**Results:** A total of 244 employees were included in the analysis. 80.7% were female. The mean age was  $38.3 \pm 12.3$  years. Half of the participants (49.3%) were nurses. The majority were aware of CIM procedures (87.3%), had personal experience with them (82.6%), and had used or recommended them to others (73.6%). The benefits of CIM were rated as high by 63.2%. The results of the study indicated a correlation between age groups and knowledge of CIM ( $\chi^2(2)=6.493$ ;  $p=0.039$ ;  $n=205$ ), personal experience with CIM ( $\chi^2(2)=7.968$ ;  $p=0.019$ ;  $n=178$ ) and evaluation of the benefit of CIM (Fisher's exact test;  $p=0.009$ ;  $n=204$ ). No statistically significant correlation was observed in the subgroups of gender and profession. A quarter of respondents (26.1%) indicated that IN as part of CIM had been implemented in their own work setting. Nearly all (91.4%) expressed a desire for more IN on their ward. A total of 52.4% of respondents indicated that they were pursuing further IN education.

**Conclusion:** The findings demonstrate positive experiences and attitudes towards CIM among hospital employees, highlighting a substantial need for further CIM training. However, the limitations of the survey, such as possible bias, must also be considered when discussing the results.

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### Complementary medicine use and uptake of COVID-19 vaccination among US adults: a nationally representative survey

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**Background and objective:** Previous studies have shown lower flu vaccination rates among patients who visit certain complementary medicine (CM) practitioners, but applicability these findings are directly applicable to the uptake of the novel mRNA COVID-19 vaccination is unclear. Using data from the 2022 National Health Interview Survey (NHIS), we examined associations between the use of various CM modalities and the uptake of COVID-19 vaccination, and compared these with associations with flu vaccination uptake.

**Method:** The NHIS is an annual nationally representative survey of the US civilian non-institutionalized adult population (n=27,651). We used weights hierarchical logistic regression to predict uptake of COVID-19 and flu vaccination in the past 12 months based on CM use, while also controlling for demographic and clinical characteristics associated with potential flu- and COVID-19-related complications.

**Results:** After controlling for potential confounders, the overall use of any CM did not significantly predict uptake of the COVID-19 (p=0.726) or the flu vaccination (p=0.139). Regarding specific CM modalities, individuals who visited a chiropractor (ps<0.001) or a naturopath (p=0.002, p=0.016) were less likely to receive the COVID-19 or the flu vaccine. Individuals who visited an acupuncturist were more likely to get both vaccines (p=0.002, p=0.012). Individuals who used mind-body medicine were more likely to receive the COVID-19 vaccine (p=0.002), and those visiting an art and/or music therapist were more likely to receive the flu vaccine (p=0.047). The remaining CM-related predictors were not significant.

**Conclusion:** The pattern of associations of CM use with COVID-19 vaccination uptake was comparable to that of flu vaccination uptake. This suggests that vaccination hesitancy or advocacy are not specific to the novel mRNA vaccines but more likely represent fundamental vaccination-related beliefs.

**Keywords:** COVID-19 vaccination, flu vaccination, complementary medicine

### CURRICULUM OF NURSING DEGREE IN SPAIN IN RELATION TO THE INTEGRATIVE APPROACH. IS IT COHERENT WITH SOCIAL REALITY?

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**Background and objective:** To evaluate/ analyze the present-day curricula of Nursing education in Spain, in relation to the integrative approach, complementary therapies and professional competencies that define the professional profile of Nurses. In this sense, the definition of health – inherently open to varied interpretations in reference to the context, cultural and sociopolitical realities, should include wider perspectives and focus on aspects far beyond our conventional understanding of the human beings.

**Method:** A review of all nursing schools in Spain is carried out, taking into account as variables specific training in integrative nursing, complementary therapies and subject content where related content could be included. Additionally, training in the current integrative approach is related to the specific competencies defined by the National Agency for Quality Assessment and Accreditation (ANECA).

**Results:** Results obtained demonstrate the scarce training in the integrative approach in the nursing degree curricula in Spain, highlighting the inconsistency between professional competencies defined in the Degree and the formative training contents.

**Conclusion:** The lack of training content in an integrative approach at the university level, together with greater social demand, demonstrates the need to realize an in-depth reflection on the design of the current nursing degree model. Consequently, the results direct towards the development of a new professional profile where the Comprehensive Health Care Model should be materialized.

**Keywords:** Nursing degree, integrative nursing

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### BIOETHICS AND INTEGRATIVE PEDIATRIC ONCOLOGY. REGARDING THE CARE MODEL OF A COMPREHENSIVE PEDIATRIC CANCER CENTER

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The increasing demand for non-conventional treatments by patients and their caregivers has intensified the search for answers to bioethical dilemmas in the application of Complementary and Integrative Medicine (CIM). The high level of acceptance of CIM among the general population presents a significant challenge for health professionals across all disciplines, raising a series of ethical questions(1).

Integrative oncology provides a framework for integrating safe and effective CIM alongside conventional cancer treatments. Additionally, rigorous research, can help bridge gaps in medical care by offering evidence-based, patient-centered care (2).

In its continuous pursuit of excellent care and humanization, a pediatric hospital in Barcelona committed in 2019 to the creation and development of a Pediatric Integrative Oncology Unit, being the first integrative oncology unit to offer non-conventional treatments within the therapeutic plan for pediatric cancer patients in all stages of the disease, regardless of prognosis. Currently is a transversal unit within a comprehensive cancer center. This patient-centered approach ensures patient safety by providing complementary treatments based on evidence and coordinated with the entire oncology team, aiming to enhance quality of life and well-being throughout the disease process. The approach encourages autonomous decision-making by patients and families based on honest and comprehensive information.

Through these efforts, the principles of beneficence, non-maleficence, and autonomy are guaranteed, but this is not enough. A coherent and complete moral system in biomedical sciences cannot be built if we only apply these three principles. The principle of justice must also be included. (3)

The principle of responsibility should challenge us to provide maximum care throughout the entire disease process and subsequent follow up. The principle of prudence applied to each decision has been an integral part of the pediatric integrative oncology unit DNA since its inception.

Integrating the hospital's values into clinical practice enhances the humanization of care, focusing on the overall well-being of individuals. Interdisciplinary collaboration is crucial for effectively meeting the needs of patients, involving both individual ethical practices and collective interprofessional practices rooted in shared values.

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### Models towards incorporation of TCIM interventions within the UK healthcare: findings from a qualitative study

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**Background:** Due to public demand and the change in the NICE (National Institute for Health and Care Excellence) guidelines, several Traditional, Complementary, and Integrative Medicine (TCIM) interventions were incorporated into the National Health Service (NHS) in the UK. However, there is no systematic TCIM integration in place. The present study explored different practical models of cooperation between TCIM practitioners and healthcare professionals leading to the integration of TCIM within the NHS.

**Aim of the study:** This qualitative study explored professionals' experiences with the incorporation of TCIM interventions within clinical settings of the NHS. The main aim was to find out what cooperation models currently work in practice and the mechanisms and circumstances of their setup according to professionals based in the UK.

**Methods:** Semi-structured interviews were conducted with participants. Interviews were audio recorded, and field notes were taken. Audio recordings were transcribed verbatim. Transcripts were analysed thematically using framework methodology.

**Results:** A total number of 21 participants took place in the study, identified as researchers/ academics, TCIM practitioners, and medical doctors. The study described several unique cooperation models between TCIM practitioners and healthcare professionals in practice incorporating several TCIM interventions within conventional healthcare, e.g. an acupuncturist working in a multidisciplinary GP surgery; an herbalist providing services and educating medical students within a hospital setting; a spiritual healer collaborating with a medical doctor on research within a hospital setting, etc. The cooperation models are mainly led by enthusiastic individuals who can establish and build contacts with other stakeholders in healthcare. Interpersonal relationships, openness towards other approaches, and knowledge of the possible use of the TCIM interventions are also important.

**Conclusions:** Cooperation models in primary and secondary care are presented, enabling the incorporation of certain TCIM interventions within and outside the current NICE guidelines, in the NHS. Further research is needed to explore whether such models could be expanded and used as a blueprint for systematic integration nationwide or applied in other countries.

**Keywords:** traditional medicine; complementary medicine; integrative medicine; integration; National Health Service

### THE E-KIDS-PROJECT: SUBJECTIVE PERCEPTION OF FOOD AND FOOD ENVIRONMENT AMONG YOUNG PEOPLE FROM LOW-INCOME HOUSEHOLDS FROM BERLIN

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**Background and objective:** Over one child in five in Germany grows up in poverty. (1). The heterogeneous social structure of Berlin has a significantly higher poverty rate than Germany as a whole (2). Poverty, health and nutrition are interrelated, however, knowledge about how children and young people themselves perceive their diet and food environment are lacking.

To address this gap, the E- Kids project explores the complex and multifaceted experiences of nutrition among young people aged 14-17 from low- income families in Berlin with a mixed-method design.

**Method:** Perceptions of food and the eating environment of adolescents were explored using interviews and ethnographies of family dinners and grocery shopping. Experts in youth work were interviewed to provide additional context. The interviews were audio recorded and written notes were taken. Transcripts and ethnographic field notes were analyzed thematically according to Kuckartz (3). Qualitative data was complemented by standardised questionnaires on self-efficacy and financial literacy among adolescents and their parents.

**Results:** Preliminary findings of this ongoing study indicate that adolescents from families affected by poverty have a fundamental understanding of their family's financial situation, which leads them to refrain from purchasing personally favored products while grocery shopping. The adolescents' preferences for discretionary food products are largely influenced by their peer group and social media. Despite this, the majority of young people interviewed eat at home with their families at least once a day and list traditional meals prepared by their relatives as their preferred foods. The provision of school lunches as a regular, inexpensive, warm meal was found to be an unpopular alternative among all participating adolescents. Cultural and religious dietary preferences were found to influence food choices in more than half of the participants,.

**Conclusion:** The E-Kids project is a unique study that maps the complex life and nutritional realities of young people from families affected by poverty in Berlin. The study has the potential to identify resources and barriers to reduce food poverty, complementing the existing programs offered by the Berlin Senate administration. Lessons learned for further research highlight the difficulty of recruiting young people from low-income families.

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### MOLECULAR MECHANISMS UNDERLYING THE MODULATION OF GLIOMA BY ENDOCANNABINOIDS AND THE ROLE OF MICROGLIA

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**Background and objective:** Glioblastoma multiforme (GBM) is the most diffuse and aggressive malignancy of the nervous system with few therapeutic options. The growth of GBM is supported by a tumor microenvironment (TME) that hampers an effective immune reaction against glioma cells. Among the non-neoplastic cells in the TME, Glioblastoma-Associated Microglia (GAM) plays a crucial role in the creation of an immunosuppressive ground.<sup>1,2</sup> Given the ability of cannabinoids to modulate key functions of immune system and tumor growth, we focused to unravel their role in microglia-glioma cell communication.<sup>3-5</sup>

**Methods:** C8-B4 microglial cell line was used. CT-2A and GL-261 mouse GBM cell lines and U87, T98 and U251 human GBM cell lines were treated with the endocannabinoid anandamide (N-arachidonylethanolamide, AEA) and the novel endogenous mediator, N-oleoyldopamine (OLDA). In particular, we focused our attention on OLDA and/or AEA-induced cannabinoid receptor CB1 activation in co-cultures of microglia and GBM cells.

**Results:** All cancer cell lines analyzed have been shown to express CB1, although at different levels, and this allowed us to evaluate the antitumor effects of CB1 receptor ligands. Structural, functional and molecular aspect were also taken into account to evaluate how the specific molecules OLDA and AEA interfere with the microglia-glioma bidirectional signaling and communication.

**Conclusion:** Our goal was to evaluate the possibility to use cannabinoids as new therapeutic anti-tumor agents able to modulate glioma cells-brain parenchyma communication, and reducing tumor growth.

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### Acupressure as a Tool to Enhance Patient Activation in Cancer Patients

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**Background and objective:** Complementary and integrative healthcare (CIH) is becoming increasingly common in oncology, with up to 82% of patients using CIH methods (e.g. yoga, aromatherapy, acupressure). In light of this, the controlled CCC Integrative Study provided patients with counseling by an interprofessional team of physicians and nurses to increase patient activation with CIH. Patients in the intervention group received counselling letters. All CIH interventions selected for the study were classified as low-threshold, simple, cost-effective and based on growing evidence. The purpose of this study is to analyze the recommendations of the CIHs methods in the counseling letters in context of the CCC integrative study.

**Methods:** We conducted a qualitative and quantitative content analysis of all counseling letters. Using a deductive approach, CIH methods were categorized into three categories (non-pharmacological interventions, external applications, medications and tea) and linked to n=18 symptoms/phenomena (chemotherapy induced polyneuropathy CIPN, digestive disorders, mucositis, anxiety, sleep disorders etc.).

**Results:** In total, n=603 patients were counseled and their counseling letters were analyzed. In the main categories, n=588 (98%) non-pharmacological interventions, n=583 (97%) external applications and n=475 (79%) medications and teas were proposed. In the category of non-pharmacological interventions, acupressure was suggested most frequently with n=475 (79%). The most commonly recommended acupressure points were Ex-UE-22 for CIPN (n=165), Pe-6 for nausea/vomiting (n=153), Yin Tang and Pe-6 for anxiety (n=97), He-7 and Yin Tang for sleep disorders (n=84), and Le-3, Pe-6 and Ma-36 for fatigue (n=73).

**Conclusion:** Non-pharmacological interventions and external applications were the most frequently suggested CIH interventions within the counseling letters. Acupressure as a low-threshold approach was recommended most and has been broadly accepted by patients. It can be used for a wide range of symptoms and makes an important contribution to strengthening patients' self-responsibility and activation. More research is needed to further strengthen the available evidence.

**Keywords:** Cancer, Patient Activation, Acupressure

### Stress associated with type 1 diabetes – a scoping review

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**Background:** The burden of type 1 diabetes (T1D) is vast and expected to increase rapidly. Most cases are adults with about 8·4 (8·1-8·8) million individuals worldwide. T1D as a multifactorial autoimmune disorder involves genetic, epigenetic, and environmental factors characterized by an inappropriate immune response toward self-antigens. The current treatment based on lifelong insulin substitution. An inappropriate stress response ability as one of the causing factors has only rarely been considered in detail as one causing factor but might complicate daily treatment.

**Objective:** Providing an overview of the current state of research on stress as a possible contributor to type 1 diabetes. **Methods:** A scoping review was realized according to the current JBI methodology (PRISMA-ScR) on the topic of stress as a contributory cause. Inclusion criteria: interventional, observational studies, case-control studies and RCTs between 2000 and 2023, Exclusion criteria: systematic reviews, basic research, single case studies, studies before 2000. Systematic literature research has been done in PubMed, using the following search strategy: „diabetes mellitus, type 1“[MeSH Terms] OR „type 1 diabetes mellitus“[All Fields] OR „diabetes mellitus type 1“[All Fields] AND „chronic stress“[Journal] OR („chronic“[All Fields] AND „stress“[All Fields]) OR „chronic stress“[All Fields]. Finally, 1755 studies were found, and 31 studies were preselected as relevant to the question under consideration. Ultimately, 19 studies and 8 reference studies were considered. **Results:** A heterogeneous picture emerges of different aspects of the question. Stress was examined in the form of stressful life events, PTSD / severe (war) trauma as the maximum form of stressful life events, parental stress and impaired attachment, and other aspects such as the influence of socioeconomic status and the role of stress as a mediator of other pathophysiological processes.

**Conclusion:** There is clear evidence of an influence of stress on T1D. Surprisingly, stress as causing factor is only rarely considered and included in treatment approaches. Several interventions of integrative medicine, mainly in mind body medicine, could address this field, but until today T1D-patients are only very seldom regarded as a target group of integrative medicine and programs aiming at this target groups should be developed.

### Evaluating Mobile HRV Biofeedback for Employee Stress Management: Impact of Digital vs. Live Instruction in a Non-Randomized Controlled Trial

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**Background and objective:** Work-related stress is a significant health concern in many developed nations. Heart rate variability biofeedback (HRV-BfB) can enhance stress adaptation and resilience. Implementing mobile HRV-BfB at the workplace might help prevent stress. However, it is unclear if the effectiveness of the training is influenced by the mode of instruction, whether digital or live. This study examines the psychophysiological impacts of a four-week workplace resilience training program using mobile HRV-BfB technology and investigates how the mode of instruction affects the training's effectiveness.

**Method:** A prospective, three-arm, non-randomized controlled trial with a parallel group design was utilized. Seventy-three employees from a bearing and seal company participated in HRV-BfB resilience training. Of the participants, 58.9% were male, 86.3% worked full-time, and 67.1% worked in office settings. The training was delivered either live (n=24) or digitally (n=19). Additionally, 30 individuals were assigned to a waitlist control group. The four-week HRV-BfB training involved using visual biofeedback to enhance heart rate variability (HRV). Measurements were taken at baseline (T0), post-intervention (T1), and four weeks post-intervention (T2). The primary measure was the Burnout scale of the Copenhagen Psychosocial Questionnaire (COPSOQ) at T1. Secondary measures included other COPSOQ scales, sleep quality (Pittsburgh Sleep Quality Index, PSQI), and HRV measurements.

**Results:** Burnout metrics significantly decreased in both HRV-BfB and waitlist groups, with HRV-BfB showing larger effect sizes ( $0.63 \geq \text{Cohen's } d \geq 0.69$ ) compared to the waitlist group ( $0.27 \geq d \geq 0.36$ ). Sleep quality improved in the HRV-BfB group with small effect sizes, but no changes were observed in the waitlist group. HRV metrics (SDNN and RMSSD) increased in the HRV-BfB group from T0 to T1 ( $0.23 \geq d \geq 0.25$ ). Digital methods were slightly more effective in reducing burnout ( $0.87 \geq d \geq 0.92$ ) and improving sleep quality ( $0.59 \geq d \geq 0.64$ ) compared to live methods (burnout:  $0.43 \geq d \geq 0.51$ ; sleep quality:  $0.22 \geq d \geq 0.28$ ). HRV analysis showed no significant differences among subgroups.

**Conclusion:** A four-week mobile HRV-BfB training program effectively reduced stress and burnout among employees. No significant differences were found between digital and live HRV-BfB. Organizations should choose the format that best fits their profile or offer both to meet diverse employee needs. However, the results were inconsistent and further research is needed for confirmation

### The Holistic Solution to Fatigue: The Synergistic Effects of Detoxification, Personalized Supplementation, Physical activities, and Dietary Changes

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**Background and Objective:** The causes of fatigue are varied, including lack of physical activity, insufficient sleep, being overweight or obese, periods of emotional stress, certain medications, excessive alcohol or caffeine intake, and poor diet. Additionally, health conditions such as anemia, arthritis, fibromyalgia, infections, Addison's disease, hypothyroidism, hyperthyroidism, sleep and eating disorders, autoimmune disorders, cancer, and diabetes can also cause fatigue.

**Method:** The 11-Item Chalder Fatigue Questionnaire (CFQ) was used, containing 11 items: 7 related to physical fatigue (PF) and 4 to mental fatigue (MF). Responses were rated on a scale of "better than usual," "no more than usual," "worse than usual," and "much worse than usual." The Likert scoring system (0, 1, 2, 3) was applied, with a maximum score of 33 indicating the highest fatigue level. Patients completed the CFQ during their first visit and again during the first check-up (2-3 weeks after the protocol commenced). The treatment protocol included diet changes, a detoxification program, personalized supplementation, adequate water intake, sufficient sleep, and programmed physical activities. Statistical analysis was performed using the Student T-test for paired samples via the Statistical Package for Social Sciences (SPSS).

**Results:** The study included 200 subjects (95 males – 47.5%, 105 females – 52.5%). The mean age was  $41.7 \pm 11.5$  years (range: 17-80). The mean age for males was  $40.75 \pm 11.3$  years, and for females, it was  $42.57 \pm 11.6$  years. Results were presented before and 2-3 weeks after the protocol commenced. PF scores were  $12.02 \pm 4.02$  vs.  $3.87 \pm 2.7$  ( $p=0.000$ ;  $t=25.56$ ,  $df=199$ , CI: 7.517-8.773), MF scores were  $5.13 \pm 3.06$  vs.  $2.47 \pm 1.9$  ( $p=0.000$ ;  $t=12.982$ ,  $df=199$ , CI: 2.256-3.064). The overall fatigue score was  $17.22 \pm 6.15$  vs.  $6.35 \pm 3.8$  ( $p=0.000$ ;  $t=24.238$ ,  $df=199$ , CI: 9.986-11.754).

**Conclusion:** A personalized and holistic approach significantly reduces the level of self-reported fatigue in a short period. Further research with a larger study group is needed to provide more precise results on the protocol's efficacy.



### Exploring the Therapeutic Potential of Nux Vomica in Gastritis Using a Traditional Chinese Medicine Network Pharmacology Approach

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Nux vomica (NV), a widely used homeopathic remedy, is traditionally prescribed for various gastrointestinal disorders, including gastritis. Despite its historical use, the underlying molecular mechanisms of NV remain poorly understood, particularly at homeopathic dilution levels. This study leverages a network pharmacology approach, inspired by methodologies in Traditional Chinese Medicine (TCM), to explore the potential therapeutic effects of NV on gastritis.

Using the Traditional Chinese Medicine Systems Pharmacology (TCMSP) database, we identified the bioactive compounds within NV, some of which were mapped to relevant biological targets involved in gastritis. The targets were derived from a comprehensive keyword search that included "Gastritis," "Acid Reflux," "Gastric Inflammation," "Gastric Ulcer," and related conditions. We constructed a protein-protein interaction (PPI) network to elucidate the interaction landscape and identify key nodes with significant connectivity.

Our analysis highlighted several critical pathways, including the PI3K-Akt signaling pathway, the MAPK signaling pathway, and neuroactive ligand-receptor interactions, all of which are involved in the pathogenesis of gastritis. The enrichment of these pathways suggests that NV may exert therapeutic effects by modulating key molecular processes associated with gastric inflammation and epithelial integrity.

This approach demonstrates that combining the TCMSP database with network pharmacology and homeopathic Materia Medica can effectively bridge the gap between traditional homeopathic practices and modern scientific research. This methodology provides a framework for designing in vitro and in vivo studies that could validate the beneficial effects of homeopathic remedies like Nuxvomica. Moreover, it offers a novel way to integrate the principles of TCM with homeopathy, creating a bridge between these two medical approaches.

In conclusion, this work serves as an example of how modern scientific tools can be utilized to support and potentially validate traditional homeopathic remedies. By adopting this integrated approach, researchers can better design studies that align with both TCM and homeopathic principles, paving the way for a new era of evidence-based research in homeopathy.

**Keywords:** Network Pharmacology, Homeopathy, Nux vomica, Traditional Chinese Medicine(TCM), Gastritis

## Could fasting improve symptoms of aromatase inhibitor therapy? A study protocol of a pilot study

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**Background and objective:** Aromatase inhibitor-induced musculoskeletal symptoms (AIMSS) or aromatase inhibitor-induced arthralgia (AIA) are common side effects of long-term remission-maintaining therapy for breast cancer patients. Preliminary clinical data suggest that fasting can reduce musculoskeletal pain and disease activity as well as fatigue while improving quality of life in fibromyalgia or rheumatoid arthritis. This study will evaluate the transferability of this type of nutritional therapy to AIMSS/AIA and its feasibility in this context. Moreover, in preparation for a larger multicenter study, it will identify adequate validated tools for the assessment of possible effects of fasting on AIMSS/AIA.

**Methods:** This is a bicentric, single-arm, prospective intervention pilot study. We plan to include 54 participants who will receive the following intervention: 7-day online accompanied prolonged therapeutic fasting (max. 350 kcal/day). The primary endpoints are the feasibility of therapeutic fasting during endocrine therapy with aromatase inhibitors and improvement in AIMSS/AIA, which will be assessed using the following measurement instruments: NRS, VAS, BPI, FIQ, HAQ-DI. Secondary endpoints include improvement in quality of life, mindfulness and awareness as well as stress caused by other symptoms (“Please name the 3 symptoms that bother you the most”) and quality of sleep. Following scales will be used: WHO-5, MAAS, BFI, PSQI and VAS. Possible alleviation of cancer-related fatigue, change in eating habits and anthropometric data will also be assessed. An accompanying N-of-1 trial using a mobile application (StudyU) and qualitative interviews will give more insight into individual and subjective changes during the study period.

**Discussion and planned outcomes:** This is the first study to investigate fasting for AIMSS/AIA in breast-cancer patients. If this pilot study shows a positive effect, we aim to conduct a confirmatory follow-up study.

**Trial registration** ClinicalTrials.gov NCT06172088. Registered on December 15, 2023

### Mixed apocrine carcinoma in a heifer treated with homeopathic *Viscum album*

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**Background and objective:** Mixed apocrine adenocarcinoma is an uncommon intertegumentary neoplasm in humans and domestic animals. Adult animals are more predisposed to developing this neoplasm, and so far there is no established sex or breed predisposition<sup>[1,2,3]</sup>. *Viscum album* has been successfully administered to cancer patients in various animal species and its cytotoxic action has been described "in vitro"<sup>[5]</sup>.

**Method:** A skin mass in the calf area of an 8-month-old heifer was punctured after unsuccessful treatment with the conventional model, antibiotics and corticosteroids. Fine needle aspiration cytology (FNA) concluded that it was a mixed apocrine carcinoma. The mass suddenly grew and homeopathic *Viscum album* was chosen 3x a week intramuscularly with potencies D3, D6 and D9<sup>[4,5]</sup> near the mass for 11 months.

**Results:** The results appeared after 50 days of treatment with compaction and reduction of the mass with remission after 11 months of therapy.

**Conclusion:** *Viscum album* D3, D6 and D9 promoted remission of mixed apocrine carcinoma, giving the animal longevity and it is still alive after 12 years.

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### The Differential Impacts of Non-Caloric Sweeteners and Sugar on Brain Function and Metabolism: A Comparative Review Across Ethnic Groups

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**Abstract:** The increasing prevalence of metabolic disorders such as obesity, diabetes, and cardiovascular diseases has heightened concerns over excessive sugar consumption. Non-caloric sweeteners (NCS) have emerged as popular substitutes for sugar, offering the sweetness without the calories. However, the long-term health effects of NCS remain controversial. This review examines the differential impacts of NCS and sugar on brain function and metabolism, with a particular focus on ethnic variations between German and South Korean populations. The “sweet uncoupling hypothesis” suggests a mismatch between the perceived sweetness of NCS and the body’s metabolic response, potentially leading to metabolic disorders such as glucose intolerance and altered energy processing. Studies have shown that NCS, such as sucralose and aspartame, can impair insulin sensitivity, alter brain responses to sweet tastes, and disrupt glucose metabolism. Moreover, chronic NCS consumption may interfere with the brain’s reward pathways, leading to increased appetite and altered eating behaviors. Ethnic differences play a significant role in the physiological and neurological outcomes associated with NCS intake. East Asians, for instance, are more susceptible to developing type 2 diabetes at lower body mass indices compared to Europeans, due to genetic and dietary factors. This review highlights the importance of considering ethnic-specific responses when evaluating the health impacts of NCS and developing dietary guidelines. In conclusion, while NCS offer a low-calorie alternative to sugar, their potential to disrupt metabolic and neurological functions necessitates further research. Understanding the ethnic variations in response to NCS can inform public health policies and dietary recommendations aimed at mitigating the risks associated with excessive NCS and sugar consumption. Future studies should focus on long-term health outcomes and the underlying mechanisms driving these effects to provide comprehensive dietary strategies for diverse populations.

**Keywords:** Non-Caloric Sweeteners (NCS); Metabolic Disorders; Brain Function; Ethnic Differences; Glucose Metabolism

### Thiamine Deficiency associated with Medication Use

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**Background and objective:** Many commonly prescribed and used medications are associated with micronutrient deficiencies, though some are more widely known than others. Detection and prediction of micronutrient deficiencies with correction has the potential to reduce the risk of symptomatic and/or clinically meaningful deficiency states. Thiamine deficiency is the focus of this subset assessment from a larger medication associated micronutrient deficiency review.

**Method:** We performed a systematic review of the top 300 medications prescribed in the US to assess for associated micronutrient deficiency. This systematic review was performed with a medical librarian and sources were reviewed by a multidisciplinary team. We identified 5382 recent references, of which 120 were relevant to the overall project. We selected 5 references featuring less well-known thiamine deficiencies with medications.

**Results (will appear as table on poster):**

- Furosemide(1, 2) Thiamine deficiency has been reported as high as 50% in outpatients and >90% in patients with heart failure.
  - In a prospective trial (61 hospitalized patients ) worse thiamine deficiency seen in heart failure but not in renal failure when hypervolemia was treated with intravenous furosemide.
  - A cross sectional study of patients with stable heart failure on oral loop diuretic tested for whole blood thiamine levels found <11.6% to be deficient.
- Metformin(3) Cobalamin deficiency is well known with metformin.
  - Metformin inhibits thiamine transporter ThTR-2 increasing risk of thiamine deficiency which potentially increases risk of lactic acidosis with this medication, especially in vulnerable populations (such as alcoholics, HIV).
- Fluorouracil (4):
  - In cancer patients treated with chemotherapy, decreased thiamine levels were a statistically significant risk factor in those who had neurologic symptoms compared to asymptomatic patients.
- Insulin(5)
  - In a prospective cohort study, intensive insulin therapy was not found to cause or worsen thiamine deficiency in hospitalized patients.

**Conclusion:** Thiamine deficiency should be considered and monitored in patients with heart failure, on metformin and on chemotherapy including fluorouracil. Detection and correction may be clinically meaningful.

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### The Effect of Oil Pulling for the Treatment of Gingivitis - A Randomized Controlled Trial

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**Background and objective:** Gingivitis is an inflammatory condition of the gums caused by plaque accumulation. Symptoms include redness, swelling, and bleeding. Risk factors include poor oral hygiene, smoking, diabetes, and certain medications. Over 50% of German adults are affected (3). Oil pulling is an Ayurvedic practice for oral health. It uses antibacterial oils to combat oral microorganisms and prevent cavities, bad breath, and gum issues. Studies confirm the effectiveness of oil pulling in reducing plaque and gum inflammation (1).

This study aimed to investigate the effectiveness of oil pulling as an adjunct therapy and its impact on healing duration.

**Method:** After thorough examination and diagnosis of gingivitis, and a prophylaxis session, a total of 36 patients were randomly divided into two groups. Patients were unaware of their group assignment. Group A (the control group) followed conventional oral hygiene methods, while Group B (the intervention group) additionally performed daily oil pulling with olive oil. Over 30 days, clinical parameters including Quigley-Hein Index (QHI), Bleeding on Probing (BOP), and Periodontal Screening Index (PSI) were measured and evaluated weekly. A questionnaire also captured patients' subjective perceptions.

**Results:** The intervention group (Group B) showed significantly better results in all measured parameters. After one month, Group B demonstrated an improvement in QHI by 81.24%, BOP by 91.63%, and PSI by 59.09%, whereas Group A showed increases of only 49.49%, 50.10%, and 27.52%, respectively. Questionnaire analysis indicated higher patient satisfaction and improved perception of oral hygiene in the group which performed the oil pulling.

**Conclusion:** The findings align with similar studies highlighting the effectiveness of natural oils such as coconut, sesame, olive, and Arimedadi oils in reducing plaque and gingivitis. These studies also demonstrated significant improvements in clinical parameters and confirmed the anti-inflammatory and antimicrobial properties of the oils used (2) (4). Oil pulling is an effective and cost-effective adjunct for treating gingivitis. Further long-term studies are necessary to explore the long-term effects and mechanisms of this method.

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### High-dose Omega-3 in the management of chronic low back pain: a service evaluation

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**Background and Objective:** Low back pain is the biggest cause of disability globally, with a significant socioeconomic impact on healthcare systems and society. There is no single effective intervention for non-specific low back pain, and in view of demographic trends, the incidence of chronic musculoskeletal pain conditions is set to rise. This is the first service evaluation evaluating the role of high-dose Omega-3 in the management of chronic low back pain (CLBP).

**Method:** 23 patients with CLBP received a 2-month course of high-dose Omega-3 supplements (4000mg/day). Validated pain and quality of life (QOL) scores were measured at baseline and post-intervention, as well qualitative outcomes.

**Results:** 21 patients completed the evaluation, with an average improvement in VAS pain score of 29.8% ( $p=0.001$ ), and MSK-HQ score of 22.8% ( $p<0.001$ ). VAS QOL scores improved on average by 43.3% ( $p<0.001$ ). Participants also reported a 22% improvement in joint stiffness and generalised flexibility, as well as a 30% reduction in the need for breakthrough and regular analgesia.

**Conclusion:** High-dose Omega-3 appears to confer significant quantitative and qualitative health benefits in patients with CLBP. This small evaluation opens new therapeutic options in the management of low back pain and should encourage further studies to evaluate the role of Omega-3 in musculoskeletal medicine.

### Designing the nutritional environment in a School Setting: An Exploratory Pilot Project Introducing Dietary Change and Nutrition Education

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**Introduction:** Changing nutrition habits towards a Planetary Health Diet (PHD) bears great potential for a more sustainable food system, human and planetary health (1). This project sought to implement PHD recommendations in a Brandenburger school, accompanied by educational units on nutrition. A mixed-methods evaluation was used to analyse feasibility and practicality alongside exploratory measurements.

**Methods:** The project involved three work packages: developing the PHD lunch menu, creating educational units on nutrition for school lessons and parental education, and collecting data to assess potential impacts. The evaluation followed an exploratory mixed-methods design collecting quantitative and qualitative data. The development of the menu line focused on plant-centred versions of popular children's dishes, incorporating sustainability aspects like regionality, seasonality, and food waste reduction. Educational units were developed through a multi-stage process with interdisciplinary expert participation, ensuring adaptation to 7th-grade curriculum. The evaluation consisted of assessing the menu, the educational units, and potential effects on healthier eating behaviour. Additionally self-efficacy (Jeusalem&Schwarzer), sports performance (Deutsche Motorik Test-DMT) and cognitive performance (Stroop test) were assessed before and after the intervention period. Finally, teachers were asked to appraise the educational units in a short semi-qualitative interview.

**Results:** Participants included 7th-grade students, with data collected before (n=13) and after (n=12) an implementation phase of 4 months. The menu line was rated positively by 6/12 students. Ratings of taste (9/12), quantity (7/12), and appearance (8/12) were mainly favourable. The vegetarian burger was the preferred dish. Six educational units for school lessons were developed and mainly well-received. The module on centenarians' dietary habits was the most appreciated, with 9/12 rating positively. An increasing trend in a healthy eating mindset score after the intervention was observed. No significant changes in eating behaviour, physical and cognitive performance were observed.

**Discussion and conclusion:** Challenges included difficulties in understanding the complex school setting and in recruiting participants. The limited sample size and absence of a control group limited interpretability of the results. Future studies with larger sample sizes and control groups are needed to validate these findings and better understand the long-term potential of such initiatives.

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### Evaluation of Use, Attitudes, Beliefs, and Expectations towards Reflexology among Hospitalized Patients Using the IBEAR-16 Questionnaire: A Cross-Sectional Study

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**Background:** This study aimed to examine hospitalized patients' attitudes, beliefs, and expectations towards reflexology using the validated IBEAR-16 (Inpatient Beliefs, Expectations and Attitudes toward Reflexology) questionnaire.

**Methods:** A prospective cross-sectional study was conducted across 10 inpatient wards at the Bnei Zion Medical Center. The IBEAR-16 questionnaire was administered to patients, and statistical analyses were performed to examine sociodemographic characteristics, reflexology use, and correlations between these factors and patients' attitudes, beliefs, and expectations towards reflexology.

**Results:** The study included 709 hospitalized participants, of whom 31% had previously used reflexology. Among these, 74% were women, 66% were secular, and 59% had a high school education. Reflexology users gave high ratings (on a scale from 1 = agree to a small extent to 7 = agree to a large extent) for aspects such as the connection between body and mind [7, (6.44 ± 1.061)], scientific evidence supporting reflexology's effectiveness [5, (4.87 ± 1.758)], and belief in relief from reflexology during hospitalization [6, (5.41 ± 1.642)]. Regarding treatment expectations, 52% expected reflexology to reduce common symptoms, 53.4% anticipated relaxation, and 62.8% **expected general body strengthening.**

**Conclusions:** Reflexology use among hospitalized patients is high, particularly among women, those with higher socioeconomic status, and those reporting higher morbidity levels. The findings suggest a strong belief in the therapeutic benefits of reflexology during hospitalization.

## A Comparative Study of Complex and Simple Chuna Manual Therapy for Low Back Pain Patients with Pelvic Misalignment: Safety and Effectiveness

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**Background and objective:** Health insurance limits for Chuna manual therapy(CMT) have increased its demand, yet current insurance policies and diagnostic methods by Korean medicine practitioners are insufficient, restricting complex CMT to specific diseases, which may not address a broader range of lower back pain issues effectively.

**Method:** This study recruited adults aged 19-65 years suffering from non-acute lower back pain, where diagnoses were established through a combination of X-ray imaging, manual physical examination, and 3D body shape analysis for enhanced precision in detecting pelvic misalignment. Participants were randomized into two groups to receive either simple or complex CMT. The interventions spanned four weeks, with subsequent evaluations conducted at the fifth, twelfth, and twenty-fourth weeks. The study's design aimed to assess the relative therapeutic efficacy of the two CMT approaches, with a specific focus on their impact on pelvic alignment and symptom relief in the context of lower back pain management.

**Results:** 3D analysis provided objective pelvic misalignment indicators, and complex CMT outperformed simple therapy in pain reduction in NRS (Numeric Rating Scale) ( $p<0.001$ ) and functional recovery, with sustained effects during follow-up as per ODI (Oswestry Disability Index) ( $p<0.05$ ) and PGIC (Patients' Global Impression of Change) scores ( $p<0.001$ ).

**Conclusion:** In this study, we utilized a 3D imaging technique to develop and apply diagnostic criteria for pelvic misalignment in patients with lower back pain. We conducted a randomized comparison of the efficacy of simple CMT versus complex CMT. Preliminary findings indicate that complex CMT may be more effective than simple CMT in treating non-acute lower back pain. These observations contribute to establishing objective diagnostic criteria for pelvic misalignment and underscore the necessity for expanding insurance coverage based on the effectiveness of therapy. Future research will further evaluate these findings to enhance the clinical applicability and improve treatment methodologies for lower back pain.

### Exploring Somatoemotional Responses in Craniosacral Therapy: A Qualitative Study

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**Background and Objective:** This research endeavors to elucidate potential somatoemotional responses within the context of a standard 10-step craniosacral therapy protocol.

**Method:** Conducted as a qualitative, cross-sectional, and descriptive study, the research enlisted 32 healthy volunteers (17 women and 15 men). Motion capture was employed using two video cameras—one focused on the patient's face and the other on the body below the neck—and ultrasensitive microphones, after marking anatomical points with reflective material. Two therapists were randomly assigned to each patient, executing a pre-established 10-step protocol. Subsequently, three psychologists, randomly selected, conducted interviews based on images eliciting the therapy experience. A total of 62 hermeneutical units were constructed from 27 videos and 32 interviews, analyzed using AtlasTi8 software.

**Results:** In terms of qualitative perceptions, 35% of men and 30% of women reported relaxation, while 8% of men and 5% of women admitted to falling asleep. Notably, only 1% of both sexes perceived changes in neck tension. Head movements were noted in 4.5% of women and 2.3% of men, while movements in the extremities were observed in 5.7% of men and 4.5% of women, with abdominal area movements at 2.3% across genders.

Internal visual responses varied, with 7% of men and 25% of women describing seeing colors. Visual perception without specific imagery was reported by 16% of men and 13% of women, while moving shapes were visualized by 10% of both sexes. Human figures were reported by 10% of men and 6% of women, with visions of activities observed in 8% of men and 4% of women.

Through videography, 342 somatoemotional events were identified, including eye movements (102 times), involuntary sounds (86 times), and movements in the chest and upper extremities (54 times), with stopping point technique at the beginning, and dural tube decompression techniques showing higher frequencies events.

**Conclusion:** Somatoemotional events manifest during craniosacral therapy, with eye movements possibly linked to transitional sleep-wake states. All participants reported a sense of well-being. The dream effect suggests associations with both negative and positive allostatic charges.

### Effects of EMMETT lymphatic drainage on sleep behaviour, cognitive function and quality of life in mild and moderate dementia – A randomised controlled pilot study

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**Background:** Dementia is on the rise worldwide. The modern lifestyle seems to be one of the reasons.

A key role player are neuroinflammatory processes and the accumulation of misfolded proteins. Accumulations of amyloid beta and tau fibrils disrupt communication and the supply of nutrients to brain cells, ultimately leading to irreversible cell loss.

In 2012, a group of researchers discovered the glymphatic clearance system. It is linked to the lymphatic system and promotes the removal of metabolic substances from the brain. Activating this system could therefore be a potential therapeutic benefit in the treatment of dementia.

**Methods:** In this pilot study, 26 patients aged above 65 years with mild and moderate dementia are randomly assigned to an intervention or a control group. While the people in the control group continue to receive their previous care unchanged, the participants in the intervention group receive a 30-minute manual EMMETT-treatment twice a week for four weeks, which activates lymphatic drainage through soft stroking and pumping movements.

The effects of this therapy on the patients' sleep behaviour, cognitive functions and quality of life are measured using the Mini-Mental Status Test, the Short Form-12 and a non-standardised questionnaire based on the Insomnia Severity Index before the start and after the end of the intervention. The statistical analysis is carried out with SPSS.

**Results:** The 13 people in the intervention group show a mild improvement in falling asleep, sleeping during extended periods of time, daily performance, memory ability and physical well-being immediately during / after the intervention period. For example, the average MMST total score in the intervention group improved from 17.08 to 19.31, while the control group showed a slight deterioration from 18.85 to 18.31. Other parameters such as emotional well-being show no clear trend. The 13 patients in the control group show either no changes or slight deterioration in the functions tested.

**Conclusions:** The results of this study suggest that EMMETT lymphatic drainage could be a promising treatment method for early-stage dementia. However, further larger, and more comprehensive studies are needed to confirm these results and to assess long-term efficacy.

**Keywords:** dementia, lymphatic drainage, EMMETT-Technique

### Manual and physical therapies in Cancer Related Fatigue Syndrome: the rationale that allows for better understanding and application

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Cancer Related Fatigue Syndrome (CRFS) is one of the most common disorders in the population both affected by cancer and survivors of it.

Fatigue can be considered a complex pathological picture which can be seen both as an integral part of the symptoms of the underlying disease and as a side effect of oncological therapy: surgical, radiotherapy, chemotherapy, hormonal, immunological.

In cancer patients it represents a critical event which, both in acute and chronic form for years after the completion of treatment, influences daily and working life activities, social and family relationships, compliance with therapy and can be a risk factor for reduced survival.

The US National Cancer Institute for Health has stated the need to “search for a treatment that can be defined as the most ecological possible”.

This has led to greater attention towards the so-called integrative or non-conventional or complementary therapies including Manual Therapies.

Oncology patients often use forms of Integrative Medicine and clinical experiences of various levels have long been reported also in the field of Manual Therapies.

Unfortunately, the evidence that supports them is still limited, as is the knowledge and diffusion of the rationale that explains their mechanisms of action.

The aim of this review is to provide the currently most accredited rationale to allow a better understanding of the basic mechanisms specifically of Osteopathic Medicine applied to CRFS and, by logical extension, of Manual Therapies in general.

This rationale is the result of an updated epistemology on the complexity of living systems and health, useful for a modern systemic and transdisciplinary approach.

Osteopathic Medicine, integrating the holistic approach with the reductionist one, best demonstrates the concept of Complexity in Medicine, that is to say the need to explain how the behaviors of cells and tissues emerge from the totality of interactions within complex biomolecular and biophysical networks.

Furthermore, the broader objective is to support a more effective presentation of rigorous research projects necessary for the formation of the evidence that finally allows the recommendation of these forms of Integrative Medicine.

### EFFECTIVENESS OF HYDROTHERAPY APPLIED AT HOME ON ARTERIAL HYPERTENSION – A PROSPECTIVE, MONOCENTRIC, RANDOMISED, CONTROLLED TRAIL STUDY

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**Background and objective:** Arterial hypertension is the disease with the highest prevalence and incidence worldwide (1). A reduction in systolic blood pressure by 10 mmHg is associated with a relative risk reduction of 20% for cardiovascular events, 17% for CHD, 27% for stroke, 28% for heart failure and 13% for mortality (2). Standard drug therapies are used in accordance with guidelines at a blood pressure of higher than 130/85 mmHg. High-normal blood pressure and grade 1 is a grey area in treatment, which is treated both with medication and lifestyle changes (2). Jacob and Volger et al have shown that elevated blood pressure can be reduced significantly as part of a three-week inpatient treatment programme using Kneipp hydrotherapy (3). This prospective, monocentric, randomised, controlled trail study was conducted to assess whether this could also be achieved in a home setting with a 6-week hydrotherapy treatment phase.

**Method:** The subjects who met the inclusion criteria were randomly assigned to the control group (n=54) with healthy lifestyle counselling or to the intervention group (n=56) with healthy lifestyle counselling and additional instruction on regular hydrotherapy treatments according to Kneipp. Blood pressure control was quantified by a 24-hour long-term blood pressure measurement. Mann-Whitney-U test was used for group comparison.

**Results:** In all, 66 women (60%) and 44 men took part, mean age was 60.3 ( $\pm$  7.7) years. The control group showed an average systolic RR of 140.7 ( $\pm$  13.2) mmHg at enrolment, the corresponding average systolic RR of the intervention group was 142.7 ( $\pm$  8.2) mmHg. After 6 weeks of hydrotherapy the average systolic RR of the intervention group dropped by 7.5 ( $\pm$  8.4) mmHg compared to an average value increased by 2.9 ( $\pm$  8.8) mmHg of the control group (p <.001). Further results will be analysed in the coming weeks and presented in November.

**Conclusion:** Regular use of hydrotherapy in the home setting is effective in reducing the systolic RR within six weeks.

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### THE CHIROPRACTIC CARE OF WOMEN IN THE PERINATAL PERIOD: A CLUSTER ANALYSIS TO DETECT SIMILARITIES AMONG CHIROPRACTOR RESPONDENTS.

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**Background and objective:** Patient characteristics and practitioner characteristics influence the clinical interaction between patients and their healthcare providers. Among alternative therapy practitioners, chiropractors comprise the most established healthcare system in the world and third only to medicine and dentistry.<sup>1</sup> It's estimated that 5% -11% of pregnant women with LBP seek chiropractic care.<sup>2</sup> Despite the popularity of chiropractic for women in the prenatal period, the literature on chiropractic perinatal care has been described as emergent.<sup>3</sup>

Towards exploratory analysis and contribute to the literature, we describe the findings of a cluster analysis based on the response of chiropractors versed in pregnancy care to a survey examining practitioner and patient characteristics, practice characteristics, the clinical protocols employed in pregnancy care, collaborative efforts with other healthcare providers, and safety attitudes to pregnancy chiropractic care.

**Method:** Professional members of the International Chiropractic Pediatric Association with postgraduate training and clinical experience in the care of women in the perinatal period completed a 136-item questionnaire to characterize practitioners and their patients, their practices and management protocols and safety attitudes on pregnancy and postpartum care. In addition to using descriptive statistics, we performed a hierarchical clustering analysis to understand similarities and differences among chiropractors in their clinical management of pregnant women.<sup>4,5</sup>

**Results:** Cluster 1 was characterized with chiropractors as mid-career females and males with 6-20 years of experience while Cluster 2 had a substantially higher proportion of early career females (i.e., 2-5 years) and late career males (+21 years). Approximately 50% of practitioners in Clusters 1 and 2 disclosed that the Webster Technique was their primary chiropractic technique when caring for pregnant women, and approximately 25% in both clusters disclosed that their secondary chiropractic technique was Diversified Technique (i.e., described as a combination of techniques).

**Conclusion:** Our cluster analysis found similarities and differences in the response of chiropractors to a 136-items questionnaire on perinatal care. We hope that our characterization of chiropractors will inform the safety and effectiveness, chiropractic education and research, practice and policy in the care of women in the antenatal and perinatal period.

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### FOOT REFLEXOLOGY IN PEOPLE WITH MENTAL HEALTH PROBLEMS, A LEARNING AND SERVICE EXPERIENCE.

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**Introduction:** In this Learning and Service (LS) project, a nursing intervention is developed through Foot Reflexology (FR) to address the prevention and health promotion of people with Mental Health (MH) problems, who receive support from the Via Guasp Foundation. The benefits of FR in people with MH problems are studied within the final degree project of 4 nursing students.

**General objective:** To learn and analyze the effects of FR from a nursing intervention, through a service to users with different MH problems.

**Specific objectives:** To evaluate the influence of FR on the reduction of stress and anxiety levels. To evaluate the effects of FR on vital signs.

To list the patient's subjective sensations after receiving FR sessions.

To assess the degree of patient satisfaction through the final post-procedure questionnaire.

To describe the physical and emotional changes through the collection of data from the record sheets of the FR sessions.

Methodology Pre and post quasi-experimental study.

Conduction of six sessions of FR to four nursing students with MH problems from the Via Guasp Foundation who want to reduce anxiety, stress or smoking. Probabilistic sampling by convenience. With recording of vital signs, Hamilton, Richmond, Golberg and Fagerstrom rating scales. Expectation and satisfaction surveys. And reflexive diary for nursing students.

**Results:** Comparison and individual reports of the participants:

Slight improvement of vital signs after massages.

Improvement of well-being and anxiety, depressive state and motivation to quit smoking after the intervention. Tobacco dependence is maintained.

**Questionnaires:** positive evaluation of users, personal growth, higher self-esteem, better rest and relaxation.

**Conclusions:** This project has made it possible to offer a service to a community with special needs, generating benefits for users and nursing students. Transformation of the educational approach into experiential learning.

Acquisition of skills to apply nursing intervention with FR and personal and professional growth.

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### The role of Integrative Reproductive Medicine in the Management of RPL.

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**Background and objective:** Presently, an increasing number of patients are gravitating towards holistic fertility treatments. Integrative fertility care has gained prominence in addressing various infertility issues like low ovarian reserve, endometriosis, PCOS, and RPL. This poster aims to underscore the significance of bio-energetic factors and integrative reproductive strategies concerning RPL, which we deem crucial. The combination of integrative therapy methods, particularly incorporating WS-TCM and naturopathy alongside conventional reproductive techniques, significantly enhances the probability of achieving a successful pregnancy resulting in a healthy baby taken home.

**Method:** Non-interventional, retrospective clinical study (NIS). This presentation includes a patient-related observational single case study of a woman aged 43 with recurrent pregnancy loss. She had 6 miscarriages between weeks 6 and 7 in the last 4 years. Treatment was performed in a private integrative fertility clinic in Barcelona between May 2013 and May 2014. The following therapeutic tools were used in her treatment approach: WS-TCM, which includes Chinese Herbology, Acupuncture, Dietetics, Moxibustion, as well as a naturopathic approach, including Nutrition, Quality of Life aspects (lifestyle), Nutritional Supplements. Besides, conventional reproductive medical analyses were conducted to exclude any potential immunological or hematological concerns.

**Results:** A new pregnancy without assisted reproductive technology (ART) was achieved in March 2014. The patient delivered a healthy baby boy on the 10th of November 2014. A first follow-up consultation was made in March 2018, which confirmed a completely healthy 3-year-old boy.

**Conclusion:** Patients dealing with infertility due to recurrent pregnancy loss may benefit from an integrative reproductive approach including WS-TCM and naturopathy, thus potentially increasing the likelihood of achieving a live birth. More research is required to determine whether this integrative approach can be helpful in the management of recurrent pregnancy loss.

### Trends in the Development of Acupuncture-Related Technologies Based on Patents in South Korea

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**Background and objective:** Acupuncture is among the most commonly used alternate medicine treatments worldwide. Although several studies have reviewed the safety and efficacy of acupuncture, no study has conducted a review of the patent trends related to acupuncture as an intervention. Analyzing patent trends in acupuncture will highlight the current advances in the development of acupuncture-related technologies and may facilitate the innovation of novel acupuncture techniques. This study aimed to analyze the trends in the development of acupuncture-related technologies based on patents in Korea.

**Method:** The electronic database of the Korea Intellectual Property Rights Information Service (KIPRIS) was searched for information on acupuncture-related patents registered from inception till May 2023. Only acupuncture and electroacupuncture were included in this review. The current status, contents, and technological characteristics of the relevant patents were analyzed systematically to identify the overall status of acupuncture-related patents.

**Results:** Overall, 130 patents were identified from the KIPRIS database, of which 97 were unrelated to the research topic and were excluded. Finally, 33 patents were assessed. Interest in the development of acupuncture technology increased steadily over the past decade. Patent application reached its peak in 2018 with six cases, while patent registration peaked in 2019 with seven cases. Twenty-two acupuncture-related patents were for acupuncture (66.6%) and 11 for electroacupuncture (33.3%). The technical specifications for the patents included acupuncture devices (30.3%), acupuncture manufacturing methods and equipment (36.4%), and electroacupuncture devices (33.3%). The development of acupuncture devices focused primarily on improving operator convenience during the procedure and providing a combined stimulation effect. Patents for acupuncture manufacturing methods and equipment included improvement of structural coupling for manufacturing and development of an automatic assembly for mass production. The primary objective of electroacupuncture-related patents was to ensure safety during electroacupuncture stimulation and provide stable electroacupuncture stimulation by improving the electric current supply method.

**Conclusion:** Acupuncture-related technology currently focuses on technological advancements for the safe and effective delivery of stimulation. The future development of new acupuncture-related technologies requires an approach that considers technological specialization and the overall tendency to ensure the novelty and innovation of patents.

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### Acupuncture for Spasticity after Stroke: A Systematic Review and Meta-Analysis

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**Background and objective:** Spasticity is the common complaint among patients with stroke. Acupuncture has increasingly been used for spasticity management after stroke. The aim of the present study was to summarize and evaluate evidence on the effectiveness of acupuncture in improving the spasticity after stroke.

**Method:** Six electronic databases, PubMed, EMBASE, the Cochrane Central Register of Controlled Trials, and three Korean medical databases, were searched from inception until December 2023. Randomized controlled trials (RCTs) were included if acupuncture was compared to placebo or other conventional therapy for treatment of spasticity after stroke. Assessments were performed primarily with Modified Ashworth Scale (MAS).

**Results:** A total of 398 possibly relevant articles were identified, of which 8 RCTs met the inclusion criteria. Meta-analysis showed that acupuncture is effective in reducing the spasticity after stroke, as assessed by MAS (weighted mean difference, 0.79; 95% confidence interval [CI], 0.38–1.20;  $P < 0.001$ ). Heterogeneity could be explained by the differences in control, acupoints, and the duration after stroke occurrence.

**Conclusion:** The results suggest that acupuncture could be effective for treating spasticity after stroke. However, larger scale and more rigorous clinical trials are needed to confirm the role of acupuncture in the treatment of this disorder.

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### Healing from Guillain Barre syndrome, progressive neuromuscular dystrophy with the naturopathic method of thermoregulation and supplementation with the use of non-invasive diagnostics by Anesa. Case report:

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**Background:** Patient RH, Idaho Falls, USA, 62 years old, male, top athlete in triathlon, has been suffering from Guillain-Barre syndrome for the past thirty years. Initially, this progressive neurological disease has mild symptoms. In the last three years, the situation has drastically worsened. He needs help from other people to carry out normal daily activities as the body loses its ability to control its muscles and sense its surroundings. The therapy is constantly supplemented with continuous oxygenation and physical therapy. He suffers severe pain. Respiratory function was reduced to 60%, and oxygenation to 34%

**Method:** Case report.

**Results:** In August 2023, a team of experts from the Center for Integrative Medicine, the European Center for Peace and Development (ECPD) of the UN University, consisting of naturopaths, a doctor, and a nutritionist, will be included in the treatment. The patient's condition and body function are monitored with the non-invasive diagnostics of Anesa. According to the results, the treatment is determined by the method of thermoregulation, applying only natural therapy through the skin and orally. The effect is monitored by Anesa and a type of dynamic therapy is applied according to the results twice a day. The therapy is based on psycho-immune-neuroendocrinology, the use of oils, bioelectrical conduction therapy of the skin with the aim of restoring body function, and raising the level of self-healing of the body. Pains and tingling gradually decrease. After two days, he gets up on his own and starts walking. He breathes more easily and on the third day, oxygenation is switched off. After 4 days, the pain and other symptoms disappear, he moves independently, breathes without oxygen, and at the request of the patient, after many years, he swims in the pool. After a month, he goes to the doctor to redo all the tests, nerve conduction and electromyography studies, systematic examination, and pulmonary tests. The conclusion of the clinical doctors is a dramatic and complete cure.

**Conclusion:** The patient fully recovered, leads a normal life and returned to all activities, under the watchful eye of his doctors and the team of integrative medicine and naturopathy.

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### PHQ-9 and HAM-A in Depression and Anxiety Improved Using Calligraphy Meditation and Chanting Mantra – A Randomized Controlled Blind Study

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**Background and Objective:** It is well documented that meditation itself and painting calligraphy can positively influence depression and anxiety. In the authors experience, not only painting calligraphy, but even simply tracing the lines with fingers can bring the practitioner into a mindfulness state, especially if it is combined with a chanting mantra. Authors have aimed to study the effect of combining mindfulness practice and art therapy on depression and anxiety.

**Method:** Twenty subjects were enrolled into a Randomized Controlled Blind Study that was IRB approved. Authors studied the effect of meditation by tracing calligraphy and chanting mantras using standard questionnaires including Patient Health Questionnaire (PHQ-9), Hamilton Anxiety Rating Scale (HAM-A) and Beck's Depression Inventory (BDI). Upon entry of the study, subjects received an energy transmission and were instructed to practice tracing Chinese Calligraphy together with a chanting mantra for 10 minutes a day at minimum, to participate in an online 30-minute group session 5x week, and to attend other meditation events. The PHQ-9, HAM-A and BDI questionnaires were administered at the start of the study, and at every end of the month until subjects completed the study.

**Results:** A two-way repeated measures ANOVA analysis showed statistically significant improvements in two of the indexes while one index had improved but not significantly. Specifically, PHQ-9 scores significantly differed over time,  $F(2,20)=4.262$ ,  $p=0.029$  with scores improving significantly between baseline and at the end of the 2<sup>nd</sup> month for both treatment and control groups ( $p=0.051$ ). HAM-A scores significantly differed over time,  $F(1.5,9)=5.092$ ,  $p=0.040$  where the combined scores of treatment and control groups showed significant improvement between the end of month 2 and month 3 ( $p=0.053$ ). BDI scores did not show a statistically significant difference over time,  $F(1.4,11.5)=0.812$ ,  $p=0.43$ .

**Conclusions:** Our results showed that meditation with Tao calligraphy tracing and mantra chanting is an effective modality that can be integrated into conventional treatment of depression. It is easy to learn and practice. We did not observe any significant side-effects.

### Ketogenic diet as a promising therapy for gastric tumor - case report

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**Objective:** This case report aims to detail the occurrence and treatment of gastric neoplasia in a fifteen-year-old mixed-breed female dog with chronic regurgitation and vomiting symptoms, highlighting the implementation of a ketogenic diet. The prevalence of gastric cancer in dogs is rare, and this case seeks to contribute to the understanding of the disease and its management.

**Method:** The dog underwent a series of examinations, including ultrasound, abdominal tomography, and histopathological examinations, which revealed a mass measuring 2.33 x 2.26 x 2.52cm in the cardia region of the stomach, with possible adrenal metastasis. The treatment consisted of surgery to remove the tumor; however, the location was difficult to access, making it impossible to completely remove the mass. Biopsy material was removed with a positive result for gastric sarcoma. The ketogenic diet was introduced, a nutritional therapy that restricts carbohydrates, emphasizing the intake of good fats and moderate proteins to induce the metabolic state of ketosis in the body.

**Result:** As surgery to completely remove the tumor was not successful and the patient was unable to undergo chemotherapy due to kidney and liver damage, the ketogenic diet was implemented as the only therapy to control tumor growth. The dog is alive and well 18 months after starting the diet, a period significantly longer than the average survival of 8 months for conventionally treated canines. No recurrences or deterioration in quality of life were observed during this period.

**Conclusion:** The ketogenic diet contributed to prolonged survival by reducing the availability of glucose and insulin, essential nutrients for tumor growth, and by promoting a metabolic state that potentially inhibits cancer progression and the inflammatory process. However, more research is needed to fully understand the impact of the ketogenic diet on treating gastric cancer in dogs.

### Evaluation of an integrative-anthroposophic guideline for acute gastroenteritis implemented in a German anthroposophic hospital

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**Background and objective:** A consensus-based integrative-anthroposophic guideline for gastroenteritis in children developed by us was implemented in a German anthroposophic children's hospital. Our aim was to evaluate the feasibility of such guideline in clinical routine and to report parents' as well as physicians' experience with the therapy concept.

**Method:** The here presented results are part of a prospective case series study conducted between April 2018 to April 2020 in a department for children and adolescent integrative medicine of a German anthroposophic hospital. Data regarding therapies was extracted from the hospital information system (ORBIS). Sociodemographic data, course of symptoms and parents' satisfaction was assessed by a parent's survey during hospital stay and 4 weeks after discharge. Additionally, physicians were surveyed regarding their assessment to feasibility and effectiveness.

**Results:** All patients received some form of anthroposophic therapy. The most frequently used remedies were Geum urbanum, Nux vomica and Bolus alba comp.. Compresses with fennel oil was the most used external application. Reduction of symptoms during hospital stay was shown. Parents assessed the effectivity of therapy as good ( $1.8 \pm 0.6$ ) and were highly satisfied ( $1.5 \pm 0.5$ ). Parents considered that rehydration therapy, the anthroposophic concept of the hospital and anthroposophic remedies have the most positive impact on the recovery of their child. Suitability for daily use and effectiveness in treating the main symptoms of aGE were highly scored by the physicians.

**Conclusion:** The guideline was very well accepted and implemented in clinical routine. Parents as well as physicians considered that the anthroposophic therapy concept has beneficial effects on disease course.

### Correlation of Autonomic Regulation with Selfregulation, Internal Coherence, Sleep Quality and Quality of life in Patients with Type-2 Diabetes

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**Background and objectiv:** Holistic medical systems, such as Anthroposophic Medicine, consider the human being to be multidimensional (e.g. body, soul, spirit). Health is therefore created as a physiological interplay and balance of different dimensions. Validated questionnaires describe aspects of these dimensions, e.g. on autonomic regulation (aR, physiological-regulation), self-regulation (SR, ability to adapt & well-being) and the Internal Coherence Scale (ICS). Several studies have demonstrated that patients with type 2 diabetes (T2DM) have a reduced aR. This analysis examines how the aR in T2DM relates to SR, ICS, as well as to health-related quality of life (SF-12), sleep quality (Pittsburgh Sleep Quality Index, PSQI) and distress (Hospital Anxiety and Depression Scale, HADS).

**Method:** The correlation of the questionnaire scores from the baseline examination of the AIM-DIABETES study, which investigated the feasibility of a multimodal intervention for lifestyle optimization in T2DM, are assessed using Spearman's rank correlation coefficient.

**Results:** Questionnaire scores from 33 T2DM patients (18 females, mean age 61.5 (SD 8.7) years) were analysed. Although patients were remarkably distressed with elevated HADS-scores, especially for anxiety (mean 12.2, SD 2.1), the aR (mean 43.5, SD 6.0) was noteworthy high in this T2DM population. With the exception of the HADS, we found relevant correlations between the investigated scales listed above. The strongest correlation of aR was found with better sleep quality (PSQI:  $r=0.76$ ), followed by self-regulation ( $r=0.682$ ), ICS ( $r=0.62$ ) and SF-12 physical sum scale ( $r=0.56$ ) (all  $p \leq 0.001$ ). The aR subscale rest/activity regulation correlates with ICS ( $r=0.69$ ) and SR ( $r=0.70$ ) at similarly high levels (both  $p < 0.001$ ).

**Conclusions:** We found strong correlations between aR and the other dimensions investigated. In this distressed T2DM population, these correlations were even stronger than in healthy people of previous studies. This may be explained by the fact that the diabetes patients investigated tended to overemphasise their answers compared to healthy people. This hypothesis should be investigated in further studies.

**Keywords:** Autonomic regulation, internal coherence, diabetes mellitus type 2, complementary and integrative medicine, holistic system

### Acupuncture for Hot Flashes in Cancer Patients: a single-center hospital study.

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**Background and objective:** Nearly 90% of breast cancer survivors experience one or more symptoms or side effects during or after endocrine therapy, hot flashes are the most common concurrent symptoms. Hot flashes are the common and debilitating symptom among prostate cancer (PCa) patients undergoing androgen deprivation therapy (ADT) too.

According to reports supplied to WHO by 129 countries regarding the acupuncture, 80% of them now recognize the use of acupuncture: 103 with acknowledged usage, 29 with regulations for providers and 18 with health insurance coverage. The mechanisms underlying the effects of acupuncture are complex and involve multiple systems. Objective of this study is to evaluate acupuncture's effectiveness in the treatment of hot flashes in cancer survivor patients.

**Method:** In our observational study from October 2022 to May 2024 we have enrolled 30 cancer survivors patients with hotflashes as side effect in breast cancer (23 woman) and in prostate cancer (7 men). Patients referred to the acupuncturist physician of the hospital by the oncologists of the Oncologic Department. During the initial acupuncture visit the acupuncturist obtained a symptom history from the patients and formulated TCM diagnoses with an individualized acupuncture treatment.

**Results:** Thirty cancer patients with hotflashes were evaluated 23 woman (77%) and 7 men (23%). Median age was: 56 years for women (range 41-77) and 61 for men (range 55-78). ECOG PS was: 1 (86%); 2 (14%).

Each patient takes about an average of 7 acupuncture sessions (range 2-12). Patients were also treated with 4 Hz cw electroacupuncture and TDP lamp.

At the end of the treatment cycle, a significant response in Hot Flashes scores was noted by using an hot flash diary containing 3 severity categories (conformed to FDA, NIH and EMEA) and in QoL too (measured by the QLQ-C30 QoL subscale). The feedback questionnaires highlighted an efficacy of the acupuncture procedure and improvement of QoL.

**Conclusion:** This single-center study offers a real-life experience of using acupuncture in cancer patients suffering for hot flashes. Acupuncture impacts on perceived well-being, improves QoL and reduce the number and the intensity of hot flashes, improving patient compliance to the antitumour treatments.

### Acupuncture in Trigeminal Neuralgia – the qualitative sub-study of the randomized, mixed methods ACUTRIG Trial

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**Background and objective:** Trigeminal neuralgia (TN), also known as “tic douloureux”, is an extremely painful and often chronic condition that significantly lowers quality of life, affecting mainly people in the 7th-8th decades of. Pain attacks are treated with a prophylactic permanent medication with antiepileptic drugs – often with insufficient effects or limiting side effects. Non-pharmaceutical therapeutic approaches such as acupuncture are therefore an interesting option. There is a lack of high quality, transparently reported RCTs and analysis of patient perspectives on disease and available treatments are missing. The purpose of this randomized controlled exploratory study was to investigate whether there is evidence for the efficacy of acupuncture in TN in terms of the impact on pain, anxiety and depression, quality of life and adverse events. The qualitative sub-study aimed to analyse the experiences, perceptions, and motivations of patients with TN, who received acupuncture treatments against the pain attacks of TN.

**Methods:** Semi-structured interviews were carried out with participants of a two-armed RCT as part of a mixed-methods study. The interviews were conducted via phone after 8 weeks of acupuncture treatments using a semi-structured interview guide with questions on living with TN, the medical care for TN prior to the study, the acupuncture treatments and the overall trial participation. In total, 6 patients participated in this study.

**Results:** Our patients managed TN related pain by medication or avoidance of trigger factors prior to participating in the RCT. Many felt dissatisfied with the side effects of antiepileptic medication for TN and wished to reduce medication. Except for one all of our patients described a reduction in pain attacks and severity of pain; they would pay for the acupuncture treatment by themselves in the future.

**Conclusion:** The qualitative study indicates a need for effective, safe and feasible therapies in patients suffering from TN pain. If acupuncture could be such a treatment option for TN patients should be evaluated in larger high-quality RCTs.

### Effect of Add-on Therapy with LTRA and CSBHT in Chronic Persistent Asthma Patients: A Protocol for a Randomised, Placebo-control, Parallel, Multi-center Trial

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**Background and objective:** Asthma is a chronic disease marked by airway inflammation and obstruction. Treatment aims to control symptoms with minimal medication, using disease-control and symptom-relieving drugs. Inhaled steroids and beta2-agonists are common treatments, but long-term use can cause side effects. Leukotriene receptor antagonists (LTRAs) are used with inhaled steroids to manage asthma due to their anti-inflammatory and bronchodilatory effects. Combining LTRAs with Chungsangboha-tang (CSBHT), a Korean medicine, could enhance their effectiveness. This study aims to evaluate the potential of CSBHT as an adjunctive therapy in asthma management through a randomized, placebo-controlled, double-blind, multi-centre clinical trial.

**Method:** A randomised, placebo-controlled, double-blind, parallel-group, multi-centre study aims to evaluate the efficacy and safety of CSBHT as an additional treatment for asthma patients, particularly those on LTRAs. A total of 198 participants will be randomly divided into intervention and control groups, with the former receiving CSBHT three times daily and the latter a placebo. Follow-ups at weeks 0, 4, and 8 will include outcome measurements, medication dispensation, and adverse reaction monitoring. The primary outcome is the mean change in forced expiratory volume in one second scores, with secondary outcomes including changes in peak expiratory flow, forced vital capacity, forced expiratory flow 25-75%, fractional exhaled nitric oxide, Asthma Control Test, Asthma Quality of Life Questionnaire, serum IgE, eosinophil count, c-reactive protein, rescue medication usage and a descriptive analysis of the questionnaire of asthma symptoms of Korean medicine. Safety assessments will be conducted through laboratory tests, vital signs, and monitoring of adverse events. Economic evaluations will be carried out either by a cost minimization analysis or a cost utility analysis.

**Ethics and dissemination:** The Institutional Review Board of Kyung Hee University Korean Medicine Hospital (KOMCIRB 2020-09-005) has granted approval for this study. The findings from this clinical trial will be disseminated to the public via academic symposiums and publications in peer-reviewed scientific journals.

Trial registration number: KCT0006005

#### Acknowledgements

This research was supported by a grant from the Korea Health Technology R&D Project through the Korea Health Industry Development Institute, funded by the Ministry of Health and Welfare, Republic of Korea (Grant No. HI20C120501)

### The integration of medicinal plants and essential oils in the practice of a comprehensive and ethical nurse in primary and community care

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**Background:** Primary health care encompasses a wide range of conditions, leading to the integration of complementary therapies to address the diverse needs of users in physical, psychological, emotional, and social health problems (1).

These therapies, distinct from conventional medicine, offer a holistic approach preferred by users seeking greater control over their health. The efficacy of medicinal plants and essential oils, supported by various types of evidence, presents opportunities to improve the quality of primary care and personalize treatment (2), primarily in nursing consultation, due to its comprehensive approach.

A comprehensive literature search has been conducted, including reliable databases and specific keywords (3). Evidence-based recommendations can be formulated to support user-centered nursing care based on scientific knowledge and clinical experience.

It is common to treat colds, vomiting, diarrhoea, odynophagia, vascular ulcers, pressure ulcers, depression, anxiety, insomnia in nursing consultation...

The most recommended medicinal plants and essential oils are: chamomile, tea, thyme, St. John's Wort, devil's claw, lavender, lime blossom...

The integration of these therapies faces challenges such as lack of professional training, regulatory barriers, and limited insurance coverage (4).

Overcoming these obstacles requires political reforms and educational initiatives. User needs and preferences must be prioritized, ensuring safety and efficacy based on a solid evaluation of the evidence (5).

In conclusion, the integration of herbal medicine and essential oils in primary care nursing practice promises to improve user outcomes and satisfaction. However, addressing key barriers and establishing evidence-based guidelines are essential for the successful integration of these therapies into conventional nursing care practice.

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### The Core Outcome Set for Acute Otitis Media (COS-OM) for TCIM Studies

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**Background and objective:** Acute Otitis Media (AOM) is important to children, parents and the health care system because: 1) AOM-causes pain/distress to both child and parents, 2) it often results in health service appointments, 3) it is the most common infection for which a child is given antibiotics. The heterogeneity of outcomes reported in AOM research hinders evidence accumulation. Therefore, identifying a core outcome set (COS) to report on in future RCTs in AOM is needed.

#### **Methods:**

**Phase 1:** To identify previously reported outcomes in published conventional and Traditional, Complementary and Integrative Medicine (TCIM) AOM research.

**Phase 2:** To rank the outcomes from different perspectives using an online 'card-sorting' methodology.

- A Patient and Public Involvement (PPI) meeting gathered parents' perspectives and feedback on the outcomes defined in Phase 1.
- At least 10 General Practitioners (GP), 10 pharmacists, and 10 TCIM Healthcare Professionals (HP), identified using network emails/newsletters, were invited to rank the 20 pre-defined outcomes.
- Kendall's coefficient of concordance W was calculated based on the ranks given for the 20 outcomes. The mean ranks for each outcome were analysed using regression analysis comparing the ranking from the three clinical groups.

**Phase 3:** An international expert meeting is planned to discuss the outcome ranking from the researchers' perspective (health economists and trialists) and finalise the COS for future TCIM studies in AOM.

**Results:** Eight parents participated in the PPI meeting. Twenty-eight participants (11 GPs, 6 Pharmacists, and 11 IM HPs) ranked the 20 outcomes. Kendall's W in all three clinical groups revealed moderate agreement, with the pharmacists showing the highest agreement (0.540) and the TCIM HPs the lowest agreement (0.421). Discordance between the three clinical groups in outcome ranking is noticeable; however, correlation coefficients between the mean ranks of the respective groups show a sufficiently high agreement. Additionally, the outcomes of the Expert meeting will be presented.

**Conclusion:** The proposed COS is a minimum set of outcomes that should be measured and reported in all TCIM clinical trials in AOM. Implementation of the COS will improve the quality of evidence-based knowledge worldwide, making it more useful to decision-makers.

### CASE STUDY OF AYURVEDIC TREATMENT OF FIBROMYALGIA.

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**Background and objective:** The purpose of this presentation is to show how Ayurvedic medicine was successfully used for the treatment of fibromyalgia (*amavata*) in a young woman.

**Method:** 21-year-old female with a history of hypermobility, paravertebral muscular spasms, tendonitis, and headaches since her teen years, recently diagnosed with fibromyalgia at the time of consultation. She suffered from severe pain and movement limitation. She was prescribed paracetamol, pregabalin, tramadol and CBD to help with her chronic pain.

Her daily routine (*dinacharya*) was evaluated thoroughly, including diet, activities, and sleep patterns. In addition to her clinical history, a physical examination that includes tongue observation and pulse reading, concluded that she had accumulated toxins (*ama*) in her body and an excess of air and ether (*vata*) in her body, thus arriving at the Ayurvedic diagnosis of *amavata*.

She did a purification diet for 3 days, that consisted of light soups with spices such as ginger, cumin, turmeric, and garlic and was suggested to continue an anti *ama* diet. This diet was rebuilt slowly and according to the patient's needs, body type, ailment, and digestive capacity, to prevent the formation of more toxins and inflammation.

Her rhythms of eating, sleeping and activity were reorganized.

She was given specific ayurvedic medicines to help her clear toxins, to support liver and digestive function and for anti-inflammatory purposes.

Regular *bastis* with medicated oils that are applied as enemas for the treatment of *vata* diseases, as per Ayurvedic traditional protocol, were also prescribed.

**Results:** 6 months into treatment she was able to stop taking tramadol as her pain decreased. After 18 months, she described feeling significantly better, with notably less pain, more level of activity and better sleep, and also she could resume her studies.

2 years later she was preparing for her surgical residency, only complaining of pain if she worked night shifts. The patient described that her digestion, biorhythms, and pain were remarkably better. Overall, she felt she could live a happy fulfilling life.

**Conclusion:** This case study shows how Ayurvedic medicine can be successfully used to treat a deep, chronic, multifactorial disease such as fibromyalgia.

**Keywords:** Fibromyalgia, Amavata, Ayurveda

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### Integrative Treatment of Chronic Sinusitis, Caused by Progressive Ethmoid Hematoma in Horses

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The treatment of equine sinusitis, particularly chronic sinusitis, can be challenging, with many cases not responding to more conservative measures, such as rest, antibiotic therapy and sinus lavage. Refractory cases require additional clinical and imaging exams to confirm the cause of sinusitis. Many cases of sinusitis will require surgical treatment, which may include sinusotomy, tooth extraction, or removal of intrasinus growth. Chronic equine sinusitis has been treated by osteotomy flaps under general anesthesia with high risks of morbidity, mortality and hemorrhage. Currently, these procedures are performed on standing horses under sedation. More recently, sinusitis has been investigated and treated using sinoscopic or transnasal approaches. (1,5) Progressive ethmoidal hematoma is a non-neoplastic mass that can affect horses. It is characterized by being angiomatous and encapsulated, which develops in the ethmoid labyrinth, or associated with the paranasal sinuses, most frequently the jaw and the sphenopalatine. (2,3)

The etiology is unknown, and this disease causes successive hemorrhages. The mass, when growing progressively and slowly, causes stretching and thickening of the submucosal layer, forming a fibrous pseudo-capsule. (4)

**Case Report.** A Mangalarga mare, age 20 years old, Pampa de Zaino coat, Lagoinha stud farm, was being treated through the conventional system, with the diagnosis of Progressive Ethmoidal Hematoma, through an X-ray examination and endoscopy showing a hyperemic and friable mass in the nasal turbinate. right and bulging of the left shells. Previous conventional treatment resulted in constant recurrence. A combination of Viscum D3, with Aurum and Hepar sulfur via subcutaneous and aerosol was used for approximately 8 months and 12 days, with a remission of secretions and the disease, however the Ethmoidal Hematoma remained stable.

**Conclusion:** Specifically in this case, the biological response to the stimuli of ultradiluted medications favored the remission of symptoms and the patient's homeostasis.

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### CASE STUDY. SIDE EFFECTS IN AN AYURVEDIC CURE OF LOW BACK PAIN

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**Background and objective:** The purpose of this presentation is to show how Ayurvedic medicine was successfully used to change the stress level, communication, perspective of life, in a patient with lumbar pain.

**Method:** A 34-year-old man presents with chronic low back pain, shoulders and neck pain, rhinitis, lack of motivation, decreased ability to concentrate, and fatigue. Ayurvedic diagnostic was udavarta (reverse movement of Vata Dosha) and Katigraha (lumbalgia)

Treatment included purification diet to digest toxins, improve metabolism through diet, increase daily water intake and use of spices such as ginger, curcuma, cumin. He was treated with specific ayurvedic medicines to detoxify, regulate vata direction, application of warm dashamool oil in lower back and neck, yoga and pranayama, along with philosophical readings.

**Results:** After 1-month, lower back, neck and shoulder pain disappears, digestion and intestinal rhythm improve. After 2 months the improvement is maintained, he doesn't feel tired, and maintains a good level of energy throughout the day.

He feels surprised by all the side effects of the treatment such as: increased ability to focus and concentrate, increased energy (at the end of the day he doesn't feel tired), and happiness. He's practicing meditation and yoga daily. Morning time, he wakes up with enthusiasm, without fear or stress from work. Communication, especially with his family, has been improved. For the first time in his life, he began to attend school parents' meetings and had the initiative to share and talk with others.

**Conclusion:** This case study shows how the therapeutic approach can produce great improvements in people's quality of lives, beyond the relief of symptoms.

**Keywords:** Chronic low back pain, Katigraha, Ayurvedic management

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### TREATMENT OF VITILIGO IN AYURVEDIC MEDICINE: A PRACTICAL CASE

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**Background and objective:** Vitiligo is a common dermatological disorder with an estimated prevalence of 0.5 to 2% of the global population. This disease, considered autoimmune in conventional medicine, is characterized by hypopigmentation of the skin due to the selective loss of melanocytes, leading to white macular patches (1). Due to its autoimmune nature, treatment in modern medicine is limited and often unsatisfactory.

In Ayurvedic Medicine, this pathology is known by the Sanskrit name Shwitra. Ayurveda classifies all skin diseases under the title Kushta Roga. Shwitra is caused by the imbalance of the doshas Vata, Pitta, and Kapha, with the involvement of the tissues Rasa, Rakta, Mamsa, Meda, and interstitial fluid (Kleda) (2). Ayurvedic therapy, with its comprehensive and personalized approach, offers alternatives for the management and improvement of vitiligo.

**Method:** A case of a 38 years old woman with vitiligo affecting 80% of her body. Diagnosis involved evaluating the imbalance of the *doshas*, the accumulation of toxins (*ama*) and the level of tissue involvement. Treatment was based on detoxification through a purification diet and *jala dhauti*, the use of medicinal plants such as ginger and triphala, as well as guduchi, neem, and turmeric, among others, to support liver function (3). Through dietary changes and regular daily routines, including the incorporation of meditation and yoga practice, it was possible to clear the blockages in the channels, balance the doshas, and improve tissue metabolism (4).

**Results:** Ayurvedic treatments have shown positive results in skin repigmentation and overall well-being improvement of the patient. However, results vary according to the individual's constitution and the degree of dosha imbalance.

**Conclusion:** The holistic approach of Ayurvedic medicine not only improves conditions but also involves the individual in their healing process, providing tools for managing their own health and reducing the likelihood of recurrences

**Keywords:** Shwitra, Ayurveda, Vitiligo

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### AYURVEDIC MANAGEMENT OF ECZEMA (VICHARCHIKA): A CASE REPORT

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**Background and objective:** Eczema is one of the most common inflammatory and chronic skin diseases and its recurrences are very frequent affecting the patient's psychological state and quality of life.

In Ayurvedic medicine eczema is known as Vicharchika and it is characterized by kandu (itching), pidika (vesicles), bahusrava (exudation), and aruna shyava varna (bluish-violaceous rash). It is having a buildup of toxins and the involvement of three doshas (vata, pitta, kapha), with kapha predominant, which contaminate different dhatus (tissues). The main treatment according to Ayurveda for vicharchika removes the root cause by eliminating the vitiated dosha, balancing the doshas and dhatus and bring them back to normalcy.

**Method:** A 27 year old male patient was presented with eczematous lesions on the scalp, beard, eyebrows and chest which were red at the base and developed a yellow crust with intense itching. The treatment included detoxification through a 4 day purification diet, increased daily water intake and use of spices such as ginger, curcuma, cumin, garlic and coriander. He was treated with specific ayurvedic medicines to detoxify, reduce inflammation and support the liver and topical application of licorice powder paste with aloe vera on the affected areas. Dietary intervention was made to adapt it to his digestive capacity and daily activity, as well as to prevent the further formation of new toxins along with individualized recommendations for daily routines and pranayama exercises.

**Results:** A significant improvement in the condition was observed after 2 months of treatment and after 3 months lesions resolved completely without recurrence.

**Conclusion:** This case study shows that Ayurvedic treatment is helpful in effective management of Vicharchika with diet management and proper medication improving patient's quality of life.

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### How to realize N-of-1 studies? Study protocol of the acupressure and hypnosis in arterial hypertension (ACUHyp) - a series of exploratory N-of-1 RCTs with a mixed methods design

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**Background:** Approximately 30 million people in Germany suffer from hypertension (HT). High blood pressure favors the development of secondary diseases, including cardiac, cerebrovascular and renal diseases. Non-pharmacological methods play an important role, and the importance of exercise, relaxation techniques and diet is emphasized in current treatment guidelines. The effectiveness of self-acupressure and hypnosis in the treatment of hypertension has hardly been researched to date.

**Methods:** The aim is to assess the effects of self-applied hypnosis or acupressure in addition to routine care in comparison to routine care alone on arterial blood pressure in patients with HT in N-of-1 RCTs including N=15 individuals. Secondly, aggregated in the series of N-of-1 studies the estimated effects will be evaluated in a meta-analysis of individual cases in order to investigate the homogeneity or heterogeneity of the individual results and to estimate the effects for the collective. Patients aged 30-65 years with essential HT will be included. After a training, acupressure or hypnosis will be self-applied daily in phases of 1 week. Patients undergo the acupressure, hypnosis and control phases twice in randomized sequence. Together with a 1 week baseline the N-of-1 study lasts 7 weeks. Routine care is to be continued throughout the entire course of the study, and any changes are recorded. During the study, patients measure their systolic and diastolic blood pressure in a standardized manner twice a day by an automatic blood pressure monitor. Stress levels, vitality and well-being are evaluated daily by visual analog scales. Side effects of the study interventions are collected daily during the acupressure and hypnosis phases. Focus groups after the end of the intervention phase will be interviewed in particular to assess the feasibility of the study interventions and the study as a whole.

**Results:** The study design aims to simulate the therapeutic experiment, a common situation in medical therapy where different therapeutic approaches are tried out. The elaborated study procedures require highly engaged HT patients in terms of therapy, and evaluation. Results will give first insights about effects of self-applied acupressure respectively hypnosis for individuals and the study collective.

### Full recovery from chronic fatigue caused by reactivation of the Epstein-Barr virus through the use of Basic Micronutrition and Specific Micronutrition

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**Background and objective:** Chronic fatigue syndrome (CFS) is a disorder whose main symptom is tiredness that fails to improve with rest and worsens with exercise. It is a complex and chronic disorder of unknown etiology with general, physical and neurophysical manifestations.

There are numerous theories regarding its etiology. Prominent among them are problems related to mitochondrial bioenergetic functioning and latent infections with the Epstein-Barr virus (EBV) and cytomegalovirus (CMV).

The objective of this case was to address the intense fatigue caused by EBV and CMV.

**Method and results:** Man, 43 years of age, suffering from incapacitating CFS since 2016 and with a prior history of immune dysfunction in the form of recurrent tonsillitis and infectious mononucleosis. Viral serology testing detects reactivation of the EBV and elevated CMV and IgG.

A diet free of gluten, dairy products, and saturated fats is prescribed. At the same time escitalopram is discontinued, his lorazepam dose is lowered, and supplementation with micronutrients, probiotics, micotherapy, and micro-immunotherapy is started. In the first and second control visit (3.5 months), different adjustments are made in response to the improvement in the fatigue and clinical symptoms. After three months (third visit), specific micronutrients aimed at stimulating mitochondrial metabolism and increasing NAD<sup>+</sup> are given. Three months later, in the last visit, he reports a spectacular change in his energy level compatible with family and work life, restful sleep, and satisfactory physical activity.

**Conclusion:** The increased NAD<sup>+</sup> levels and supplementation with micronutrients that play a part in biochemistry and mitochondrial dynamics were essential factors in recovery from the intense fatigue and improvement of the mitochondrial machinery related to the immune response.

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### EFFECTIVENESS OF NATUROPATHIC TREATMENTS IN LONG COVID PATIENTS – A RETROSPECTIVE ONLINE SURVEY.

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**Background and objective:** Among Covid patients, around 10% - 20% develop Long Covid (LC) (1). Pharmaceutical interventions to manage short term symptoms might cause harm in the longer term (2). Reports were published describing improvements from naturopathic treatments (3-5). This study investigated the effectiveness of naturopathic treatments for LC patients.

**Method:** Quantitative analyses of the questionnaires, completed retrospectively by the patients, were carried out. The questionnaire predominantly contained Likert scales. The questions covered health quality, acute Covid disease, LC symptoms according to the WHO Delphi criteria, intervention methods used and their outcome. The survey covered the period before the pandemic, the period with LC and the period after naturopathic or pharmaceutical intervention. The comparison group was a LC group without naturopathic or pharmaceutical intervention for this syndrome. The statistical calculations were performed using the Spearman correlation and descriptive statistics of SPSS version: 29.0.2.0(20).

**Results:** It became evident that patients (n=40) confirmed the effectiveness of naturopathic interventions for LC. The naturopathic interventions provided a benefit in terms of improving health quality and reducing symptoms of LC compared to control group. The calculated LC mean symptom load was 34.7% ( $\pm$  14.1) per patient. The mean symptom load reductions were 10.3% in naturopathy (n=16). The mean health quality during LC was 38.4% ( $\pm$  14.6). Under naturopathic treatment, the health quality improved by 27.8% (n=16). These factors remained highly significant in the quantitative analysis of responses for the naturopathic treatments. The Spearman correlations were  $r = 0,748$  for symptom reduction ( $p = 0.003$ ) and  $r = 0.797$  for health quality improvement ( $p = 0.001$ ). This supported the hypothesis that naturopathic treatments are effective in LC.

**Conclusion:** This study confirmed that naturopathic methods are effective in the treatment of Long Covid. The results emphasize that naturopathic methods should be integrated in the treatment of Long Covid. As this study shows, the use of naturopathic methods can reduce the symptoms of Long Covid. This has significant health benefits for patients and the health economy. From a scientific point of view, the mechanism of different effective naturopathic methods should be investigated for their benefit in Long Covid.

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### PRIOR KNOWLEDGE AND COUNSELING PREFERENCES OF MEDICAL STAFF ON THE INTEGRATION OF COMPLEMENTARY MEDICINE IN PEDIATRIC CANCER CARE: FIRST RESULTS OF THE SiKOM.info STAFF TRAINING SURVEY

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**Introduction:** Recent studies emphasize the need for comprehensive information on complementary therapy options. The WHO now recognizes complementary medicine (CM) as an important yet often underappreciated part of healthcare. Families of pediatric oncology patients show increasing interest in CM for managing side effects, enhancing physical stability, boosting the immune system, and personal involvement. Research in adult oncology has shown that discussions between patients and healthcare providers about CM benefits and interactions enhance safety and prevent unregulated use, which can lead to safety issues and reduced adherence to conventional treatments. However, a U.S. study found that pediatric oncology teams often lack sufficient CM knowledge to adequately advise patients and families.

**Method:** A collaborative project in the Rhine-Ruhr area of Germany aims to introduce professional bedside counseling by experienced pediatric oncology and CAM physicians to address these findings. This project comprises several sub-projects targeting the interests of both parents and medical staff. The primary aim is to establish an advisory network to ensure the safe use of CM for affected families. Additionally, healthcare professionals at the five participating centers receive training on CM and support in managing complex CM-related situations. Prior to the initiation of training sessions, medical staff were surveyed regarding their current practices concerning CM and their preferences for future training formats.

**Result:** A total of 72 staff members participated in the survey, including 51 nurses, 16 physicians, and 2 other healthcare professionals with an age of  $36.6 \pm 11.8$  years. Among them, 59.2% reported that CM therapies were not offered by their centers, primarily due to lack of time and insufficient knowledge. Additionally, 84.0% preferred written training and 60.9% favored online formats. Most respondents preferred case-based training with specific examples over traditional lecture-style sessions within internal clinic training programs.

**Conclusion:** The results of these surveys are taken into account during bedside consultations, and the training courses in the teams are structured accordingly. Following the implementation of the training sessions in the study centers, a follow-up survey will be conducted to facilitate a before-and-after comparison regarding the safe use of CM.

### SAFETY AND CONFIDENCE IN THE USE OF COMPLEMENTARY MEDICINE FOR PARENTS OF CHILDREN WITH CANCER: FIRST RESULTS OF THE SIKOM PARENT INFORMATION NEEDS SURVEY

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**Introduction:** “Do we need to do something more?”, “Are we allowed to do something more?” and “Can we do something more?” These are three common questions that parents ask their pediatric oncologist about complementary medicine (CM). Currently there is no detailed information about parents’ information needs and perceptions regarding CM counseling. Therefore, this study aims to explore CM needs and expectations as a key element in providing an open and supportive dialogue for psychological support, symptom management and self-care in addition to conventional cancer care.

**Methods:** In a collaborative project with five pediatric oncology centers in the Rhine-Ruhr region of Germany, a counseling network for families is being established with the goal of providing direct, cross-center bedside counseling on CM by a pediatric oncologist trained in CM. Prior to this project, we investigated the information needs and perceptions of parents regarding CM counseling with a paper-based and an online survey.

**Results:** More than 50% of the parents of children with various types of cancer reported that they had already researched CM therapy options prior to consultations. Approximately 70% of the parents surveyed did not receive support from their previous oncology team with questions about CM. Parents expected mainly psychological benefits from the use of CM such as reduced stress, reduced emotional burden on the child and better coping with the disease for both, parents and child, as the uncontrollability of the child’s disease was seen as the main stressor. The main expected barriers to the use of CM were lack of quality information and lack of available CM experts.

**Conclusion:** Bedside counseling for parents about CM should build on these findings and provide evidence-based, easy-to-understand information about CM options and safety issues as well as available CM health professionals within an integrative medical approach.

### Homeopathic *Viscum album* mother tinctures reduce the activity and expression of Na<sup>+</sup>/K<sup>+</sup> ATPase in kidney cells (LLC-PK1): new targets elucidated in an *in vitro* model

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**Background and objective:** The biological mechanisms underlying the hypotensive property of *Viscum album* alcoholic extracts (mother tinctures) are not extensively studied, despite centuries of use in folk medicine<sup>1</sup>. In this study, we evaluated the effects of *V. album* mother tincture (VAMT) on the activity and expression of Na<sup>+</sup>/K<sup>+</sup>-ATPase in porcine proximal tubule kidney cells (LLC-PK1).

**Method:** Six different VAMTs were prepared using fresh European mistletoe from three subspecies (*album*, *abietis*, *austriacum*). The mistletoe was harvested in summer and winter from the following host trees: *M. domestica*, *Q. petraea*, *U. carpinifolia*, *P. sylvestris*, *A. alba*<sup>2</sup>.

**Results:** The summer VAMT from *A. alba* significantly decreased Na<sup>+</sup>/K<sup>+</sup>-ATPase activity, while the winter sample from the same host tree reduced Na<sup>+</sup>/K<sup>+</sup>-ATPase expression in this kidney cell line (p<0.05), as measured by spectrometry and western blot methodologies, respectively. Additionally, the influences of season and the host tree on LLC-PK1 cells underscore the importance of investigating the biological impacts of mistletoe origins, as supported by previous studies using other methodologies.

**Conclusion:** These promising results corroborate the traditional use of VAMT for treating hypertension and cardiovascular diseases. Further evaluation of the *in vivo* effects is underway to confirm these mechanisms in more complex organisms.

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### DIVERSITY IN MISTLETOE THERAPY PRESCRIBING IN THE UNITED KINGDOM

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**Background and objective:** Mistletoe therapy (MT) is commonly prescribed for cancer patients as an adjunct to conventional therapy in Switzerland and Germany. It is also prescribed in the United Kingdom (UK) but, with National Health Service (NHS) use of herbal medicines discouraged since 2018, current provision there is unclear.

We have previously identified evidence gaps for MT relating to formulation, routes of administration and applications for non-cancer conditions.<sup>1</sup> In a feasibility study of MT for breast cancer in England,<sup>2</sup> we also found the commonly used sub-cutaneous route of administration to be an obstacle to recruitment.

This study aimed to describe current UK prescribing of mistletoe therapy through semi-structured interviews with clinicians and suppliers.

**Method:** Interviews were undertaken with eleven MT prescribers, one UK distributor and one pharmacist supplier. Topic guides considered mistletoe formulations used, routes of administration, conditions treated and funding routes. Data was analysed thematically.

**Results:** Most interviewees were General Practitioners. Prescribing generally followed manufacturer guidelines, although host tree and administration route selection could also be based on prior experience. Routes of administration included sub-cutaneous (9/11), oral (9/11), and infusions (5/11), with most clinicians using >1 route, but two using oral MT only. Reasons for prescribing oral MT included needle phobia, convenience, safety and cost, and some clinicians identified similar outcomes to other routes. Two clinicians did not use oral MT however, citing lack of evidence.

All interviewees used mistletoe to treat cancer; some also prescribed it for autoimmune diseases and chronic fatigue syndrome. Interviews with a distributor and pharmacist enabled an estimate of ≥100, largely primary care-based, MT prescribers active in the UK. While many were prescribing for single/small numbers of patients, ten integrative healthcare centres were providing MT on a larger scale. Funding was predominantly private, with pockets of NHS funded-treatment identified in both Scotland and England.-

**Conclusion:** This study has shown MT to be prescribed mainly in primary care in the UK and largely privately-funded. Oral administration was common amongst interviewees, and both cancer and a number of other conditions were treated. Further study of orally administered MT and its use in non-cancer conditions is indicated.

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### Integration of naturopathic and complementary medicine in Germany's intensive care units – A nationwide quantitative survey among doctors and nurses

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**Background and objective:** 82% of Bavarian acute hospitals offer at least one complementary medicine procedure on their website and 66% offer at least three such procedures. The most frequently used procedures are relaxation techniques (54%), acupuncture (44%) and massages (41%). The most common areas of application are psychiatry and psychosomatics with 87% and gynecology and obstetrics with 72% (1). The integration of complementary medicine approaches in intensive care units, however, seems to be rare (2). Various studies have already proven the effectiveness of individual complementary medicine procedures in intensive care units (3, 4).

The aim of this survey is to identify the use of naturopathy and complementary medicine in intensive care units throughout Germany, to determine the factors influencing their use and integration from the perspective of doctors and nursing staff in intensive care and to record their attitudes and expertise.

**Method:** Germany-wide cross-sectional study using an online survey of doctors and nurses in the intensive care sector. A questionnaire was used with a total of 24 questions, mostly closed and some open questions, all of which were analysed quantitatively. The survey was carried out using the Empirio tool, which only allows each person to participate once. To distribute the questionnaires, recruitment letters were distributed via social media, the SurveyCircle community and the intensive care anaesthesia community.

**Results:** The response rate of the questionnaires was 21%. A total of 212 healthcare professionals from more than 20 intensive care units throughout Germany took part in the survey: 162 women and 50 men, 177 nursing staff and 35 doctors. 77.8% of respondents were in favour of implementing naturopathic and complementary forms of treatment in intensive care units. Personal convictions (70.8 %), staff training and further education (79.3 %), internal guidelines and standards (70.8 %) and financial resources (75.9 %) were cited as key factors in favour of integration.

**Conclusion:** Doctors and nurses in German intensive care units appear to have a distinct interest in and receptiveness to integrative treatment approaches. This emphasises the importance of promoting and further research into naturopathic and complementary medicine methods in intensive care units.

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## Effect of Acupuncture on ADHD: A Systematic Review and Meta-Analysis

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**Background and objective:** Attention Deficit Hyperactivity Disorder (ADHD) is a prevalent neurodevelopmental disorder characterized by inattention, hyperactivity, and impulsiveness. Conventional treatments, including medication and behavioral therapy, may have limited efficacy and potential side effects. This study aims to perform a systematic review and meta-analysis on the effectiveness of acupuncture, both alone and in integration with other treatments, as a integrative therapy for ADHD.

**Method:** A comprehensive literature search was conducted using international databases including PubMed, Embase, Cochrane CENTRAL, CINAHL, AMED, PsycArticles, Korean databases (ScienceON, KISS, Kibase, and OASIS), Chinese databases (CNKI and Wanfang), and Japanese database (CiNii). Additionally, the guidelines from JSOM were referenced. Randomized controlled trials (RCTs) examining the effects of acupuncture on ADHD symptoms were included. Data extraction and quality assessment were independently performed by two reviewers. The primary outcome was the improvement in ADHD symptoms, assessed using standardized scales. Meta-analysis was conducted using a random-effects model to calculate pooled effect sizes.

**Results:** A total of 89 studies met the inclusion criteria. The scope was both children/adolescents and adults, but only studies on children/adolescents were included. The analysis performed according to acupuncture alone, combination therapy with herbal medicine, non-pharmacological treatments, and combined Korean medicine with treatment as usual. The meta-analysis demonstrated that acupuncture, whether alone or in combination with other treatments, significantly improved ADHD symptoms compared to control groups (attention, SMD [-0.94(-1.50, -0.38),  $p < 0.001$ ]; hyperactivity/impulsivity SMD [-1.30(-1.96, -0.63),  $p < 0.001$ ]; ADHD symptoms SMD [-1.01(-1.87, -0.14),  $p = 0.022$ ]). The risk of bias of the included studies varied, with most studies rated as moderate or low quality.

**Conclusion:** The systematic review and meta-analysis suggest that acupuncture, as part of an integrative medicine approach, may be an effective treatment for reducing ADHD symptoms in children and adolescents. These findings highlight the potential of acupuncture as an alternative or adjunctive therapy to conventional treatments. However, further high-quality RCTs are needed to confirm these results and establish standardized acupuncture protocols for ADHD.

### Effect of Herbal Medicine on ADHD: A Systematic Review and Meta-Analysis

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**Background and objective:** Attention Deficit Hyperactivity Disorder (ADHD) is a common neurodevelopmental disorder with symptoms of inattention, hyperactivity, and impulsivity. Traditional treatments, such as medication and behavioral therapy, often have limited efficacy and potential side effects. This study aims to conduct a systematic review and meta-analysis to evaluate the effectiveness of herbal medicine, both as a standalone treatment and in combination with other therapies, as an integrative approach to the treatment of ADHD.

**Method:** A literature search was conducted across international databases, including PubMed, Embase, Cochrane CENTRAL, CINAHL, AMED, PsycArticles, and regional databases such as ScienceON, KISS, KMBase, OASIS (Korean), CNKI, Wanfang (Chinese), and CiNii (Japanese). Additionally, the Japan Society for Oriental Medicine (JSOM) guidelines were referenced. Randomized controlled trials (RCTs) assessing the impact of herbal medicine on ADHD symptoms were selected for analysis. Two independent reviewers conducted data extraction and quality assessment. The primary outcome was the improvement in ADHD symptoms. A meta-analysis was conducted using a random-effects model to compute pooled effect sizes.

**Results:** A total of 208 studies met the inclusion criteria for the clinical questions. The scope of the review included both children and adolescents, as well as adults, but only studies focusing on children and adolescents were included in the analysis. The analysis examined the efficacy of herbal medicine alone, combination therapy with acupuncture, non-pharmacological treatments, and herbal medicine combined with standard treatment. The meta-analysis demonstrated that herbal medicine, whether administered as a standalone intervention or in conjunction with other therapeutic modalities, enhanced the efficacy of ADHD symptom management when compared to control groups. The risk of bias of the included studies was mostly rated as moderate or low quality.

**Conclusion:** A systematic review and meta-analysis has demonstrated that herbal medicine, when employed as part of an integrative medicine approach, may be an effective means of reducing ADHD symptoms in children and adolescents. These findings highlight the potential of herbal medicine as an alternative or complementary therapy to conventional treatments. Nevertheless, further high-quality randomized controlled trials (RCTs) are required to substantiate these findings and to establish standardized herbal medicine protocols for ADHD.

### ONLINE ACTIVITY-BASED MINDFULNESS TRAINING RELIEVES STRESS: A LARGE-SCALE REPEATED-MEASURES EVALUATION

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**Background and objective:** Mindfulness has emerged as key construct in mental health over past decades. While current clinically oriented mindfulness-based interventions are usually rooted in Asian contemplative/medical traditions, mindfulness practices can equally be found in other such traditions, including anthroposophical medicine. The *Activity-Based Stress Release* (ABSR) program incorporates the latter as part of an 8-week-long online intervention combining mindfulness exercises, behavioral self-observation, and mindful movement practice (eurythmy) based on anthroposophical medicine. In the weekly 60-min online session, a trained facilitator introduced each module's themes (1 module/week) and corresponding exercises, also offering the opportunity to discuss experiences from previous weeks. Online material and a forum for exchange between participants and facilitators are also available. The aim of this study was to evaluate the ABSR online program's outcomes regarding stress and mindfulness using an observational repeated-measures design.

**Method:** The program was carried out in 37 iterations during 2023. Individuals who enrolled in the program during this timeframe and agreed to participate in the study completed online questionnaires at the beginning, middle (week 4), end (week 8), and follow up (8 weeks after the program ended), assessing subjective stress (Perceived Stress Scale, PSS) and mindfulness (Mindful Attention Awareness Scale, MAAS). Data was analyzed using linear-mixed models per outcome. All models were adjusted for age, sex, and language.

**Results:** Of the 1155 participants who registered for the intervention, 831 took part in the study, of which 444 (53.4%) filled in at least 2 questionnaires. Stress scores (PSS) decreased significantly over time ( $F(3, 917)=118.157, p<.001$ ). Concomitantly, mindfulness scores (MAAS) increased significantly over time ( $F(3, 867)=80.210, p<.001$ ).

**Conclusion:** This is the first large-scale study to test outcomes of the ABSR online program. Our findings point to a highly significant reduction in stress in conjunction with the intervention, and suggests the decrease in stress via cultivation of mindfulness, akin to other mindfulness-based interventions. The online delivery of this intervention allows for exceptional accessibility and scalability, however, further research including randomized control conditions will be needed to confirm and expand our results.

### The Effects of Yoga Fitness on Hypertension and Quality of Life in Adults

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**Background and Objective:** About 30 million people in Germany have hypertension. In 2022, 52,323 Germans died from high blood pressure. Especially in the early stages of hypertension or with only mild hypertension, non-medical, lifestyle changes can help improve the condition of those affected. Many studies have shown that yoga, as a complementary therapy, can assist patients with high blood pressure. The aim of this study is to describe the experiences of patients with hypertension regarding yoga fitness and to examine how yoga fitness impacts their hypertension.

**Method:** This is a qualitative study with interventions over six weeks. The seven patients participated in weekly yoga sessions in addition to their regular medication. After the intervention, the seven patients were interviewed. These interviews were analyzed using thematic analysis according to Braun and Clarke.

**Results:** Preliminary interviews showed that four participants had no symptoms from their hypertension, and five of the seven were on medication for high blood pressure. Therefore, there was no significant change in their blood pressure after the intervention. However, yoga fitness seems to have a great influence on the mental well-being of the participants. Four themes emerged from the analysis of the interviews: 'Yoga fitness, challenging and therefore not suitable for everyone.', 'Yoga fitness is a great option for individual sports to address high blood pressure, back pain, and sleep problems.', 'Yoga fitness - a small break from everyday life with time for yourself, a bit more mindfulness that is good for the soul.' and 'Yoga fitness, the special combination of calm and exertion, makes you more motivated, fitter, and more lively.' The positive experiences of the yoga sessions were often attributed to the Sun Salutation, a flowing sequence of yoga poses, and final relaxation, leading to increased flexibility and inner peace. Negative experiences included injuries and general dissatisfaction with yoga. They felt more relaxed after the yoga sessions and reported increased motivation and liveliness. Overall, yoga fitness appears to have enhanced the well-being of the participants.

**Conclusion:** While yoga may not be suitable for everyone, those who embrace it can benefit from a stimulating and calming balance.

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### A Case of Very Severe Aplastic Anemia (VSAA) Improved with Tao Calligraphy Mindfulness Practices

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**Background and objective:** The authors have studied the effect of mindfulness practices in a Tao calligraphy field combined with listening to Tao song and refined energy transmission as an adjunct modality to the standard treatment of very severe aplastic anemia (VSAA), an idiopathic failure of blood cell production.

**Method:** In January 2020, a 68-year old subject was diagnosed with VSAA at Sunnybrook HSC. Soon, she enrolled into an IRB-approved prospective follow-up case study and started practices in a Tao calligraphy field using refined energy transmission, Tao calligraphy tracing and singing Tao song for at least two hours a day.

**Results:** Clinical and laboratory documentation between January 2020 and September 2023 was reviewed. In January 2020: admitted with bruising and bleeding, Hemoglobin (Hb) 65 g/L, Neutrophils  $0.02 \times 10^9/L$ , platelet (PLT)  $6 \times 10^9/L$ . February 2020: initiated standard treatment of horse ATG and Cyclosporine. September 2020, due to severe side effects, Cyclosporine was discontinued and Eltrombopag (Thrombopoietin) was added; she was transfusion-dependent; Hb was 80 g/L; Neutrophils  $0.5 \times 10^9/L$  and PLT  $11 \times 10^9/L$ . March 2021 transfusions were stopped and in September 2021, CBC showed complete normalization (Hb 131 g/L; Neutrophils  $4.8 \times 10^9/L$ ; PLT  $172 \times 10^9/L$ ). By August 16 2023 continues to receive a minimal dose of Eltrombopag, Hb 143 g/l; Neutrophils  $4.4 \times 10^9/L$ ; PLT  $165 \times 10^9/L$  and no signs or symptoms of illness.

**Conclusion:** VSAA is a rare life-threatening idiopathic disease with high mortality (around 50%) and high morbidity. The clinical goal for these patients is to have response with immunosuppressive therapy of at least 60%-70%, while reaching improvement of CBC to at least non-severe cytopenia. However, this subject has surpassed the expectations by reaching and maintaining a complete normalization of the CBC and clinical picture from September 2021 to this date. These results indicate that Tao calligraphy mindfulness practices could be successfully integrated into conventional medical treatment to support patient outcomes.

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### Autogenic Training for chronic health conditions: A service evaluation

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**Background and Objective:** Autogenic training (AT) is a structured meditative-style practice, consisting of a sequence of simple mental exercises intended to induce a relaxed state in patients. There is some emerging evidence to suggest that AT can be effective in treating certain chronic conditions, however, further evidence is required. A service evaluation of AT services at the Royal London Hospital for Integrated Medicine was conducted to evaluate the impact of AT on patients with chronic conditions.

**Method:** The service evaluation consisted of the completion of validated quantitative outcome measures pre and posttreatment to explore the impact of AT. AT patients were asked to complete the Measure Yourself Medical Outcomes Profile (MYMOP) and Perceived Stress Scale (PSS) at their first hospital appointment (baseline) and then again 8 weeks later following completion of their AT sessions. Pre- and posttreatment scores for each outcome measure were analysed in SPSS using the Wilcoxon signed-rank test.

**Results:** One hundred ninety-nine patients completed both initial and follow-up MYMOP forms and were included in the evaluation. The most common presenting complaints for MYMOP symptom 1 were prolonged anxiety/stress and depression (n = 70, 35.2%), chronic pain and migraine headache (n = 44, 22.1%), chronic insomnia and sleep problem (n = 42, 21.1%) and, long-term exhaustion and fatigue (n = 18, 9%). The change in median score pre- and posttreatment for all MYMOP categories (symptoms, activity and well-being) were statistically highly significant  $p < 0.001$ . Anxiety, stress, depression, pain and insomnia were the symptoms that had the largest statistically significant difference between the median score pre- and posttreatment. Fifty-five patients completed the PSS questionnaire at two time points (pre- and posttreatment). It showed a highly statistically significant change in PSS median score in patients experiencing stress ( $p < 0.001$ ).

**Conclusion:** The findings of the evaluation indicate that 8 weeks of AT appears to be effective in improving symptoms of concern to patients and enhancing patients' overall well-being. In particular, AT was found to be beneficial for patients with symptoms of anxiety, stress, depression, pain and insomnia.

## Effect of Qigong and Meditation on ADHD: A Systematic Review and Meta-Analysis

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**Background and objective:** Attention Deficit Hyperactivity Disorder (ADHD) is a widespread neurodevelopmental disorder marked by symptoms of inattention, hyperactivity, and impulsivity. While conventional treatments such as medication and behavioral therapy are commonly used, they can have limited effectiveness and potential side effects. This study aims to conduct a systematic review and meta-analysis on the effectiveness of qigong and meditation as integrative therapies for managing ADHD.

**Method:** A literature search was conducted across various international databases including PubMed, Embase, Cochrane CENTRAL, CINAHL, AMED, PsycArticles, as well as regional databases such as ScienceON, KISS, KMBASE, OASIS (Korean), CNKI, Wanfang (Chinese), and CiNii (Japanese). Guidelines from the Japanese Society of Oriental Medicine (JSOM) were also referenced. Randomized controlled trials (RCTs) evaluating the effects of qigong and meditation on ADHD symptoms were included. Two reviewers independently performed data extraction and quality assessment. The primary outcome was the improvement in ADHD symptoms, assessed using standardized scales. A random-effects model was employed for the meta-analysis to calculate pooled effect sizes.

**Results:** A total of 14 studies met the inclusion criteria. As the research involved children, adolescents, and adults, the studies were analyzed separately. The studies examined qigong and meditation as standalone treatments, in combination with each other, and with other therapies. The meta-analysis demonstrated that qigong and meditation significantly improved ADHD symptoms compared to control groups, both in children and adolescents and in adults (Children/adolescents: inattention, SMD [-0.64(-1.22, -0.07),  $p = 0.029$ ], hyperactivity, SMD [-0.69(-1.22, -0.17),  $p = 0.010$ ]; Adults: inattention, SMD [-0.83(-1.23, -0.44),  $p < 0.001$ ], hyperactivity SMD [-0.58(-0.95, -0.21),  $p = 0.002$ ]). Qigong and meditation also reduced anxiety and depression. The majority of studies were rated as having a moderate or low risk of bias.

**Conclusion:** A systematic review and meta-analysis indicates that qigong and meditation, when incorporated into an integrative medicine approach, may be an effective means of reducing ADHD symptoms in children and adolescents. These findings underscore the potential of these practices as alternative or complementary therapies to traditional treatments. Nevertheless, further high-quality RCTs are necessary to validate these results.

### Horse-assisted systemic movements in an adult with liver disease: Case report.

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**Background and objective:** Horse-assisted systemic interventions refer to approaches and dynamics based on biophysical sciences for therapeutic purposes, such as sequelae of ischaemic stroke or chronic diseases<sup>[1,2,4]</sup>. The aim was to investigate the effects of the MSAC methodology<sup>®[1,3]</sup> on a patient with chronic liver disease<sup>[5]</sup>.

**Method:** The MSAC<sup>®</sup> method consists of 3 phases: Ph.1: interview with the facilitator; Ph. 2: entry of the facilitator and patient into the field of the enclosure and Ph.3: carrying out the dynamics that precede the movements with the horses and the dynamics of the movements with the horses.

**Results:** The patient showed a thermographic change 3 hours after MSAC<sup>®</sup>, after 7, 14 and 30 days.

**Conclusion:** The MSAC<sup>®</sup> promoted a change in the temperature pattern of the abdominal organs by Thermography, which corroborates the biochemical changes of the assistance.

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### Horse-assisted Systemic Movements in the Integrative treatment of a patient with gestational Polymorphism: Case report

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**Background and objective:** Systemic interventions assisted by horses refer to a series of approaches and dynamics based on biophysical sciences that use horses for therapeutic purposes such as sequelae of ischemic stroke or chronic illnesses<sup>[1,2,3]</sup>. The aim was to support fertility and pregnancy maintenance in a woman with tissue plasminogen activator polymorphism and a history of three consecutive miscarriages<sup>[4]</sup>.

**Method:** The MSAC® method consists of 3 phases: Ph.1: interview with the facilitator; Ph. 2: entry of the facilitator and patient into the field of the enclosure and Ph. 3: carrying out the dynamics that precede the movements with the horses and the dynamics of the movements with the horses.

**Results:** 60 days after the systemic movement, the patient with 46 years old, reported a full-term pregnancy and after 38 weeks the baby was born.

**Conclusion:** The MSAC® helped the patient maintain the pregnancy after consecutive treatments and miscarriages.

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### BIOTRONICS – NEW METHOD OF ENERGY THERAPY

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**Background and objective:** Energy therapy is an established branch of complementary medicine, which has shown efficacious supportive treatment in various diagnoses. Studies usually report on improving the quality of patients' life and facilitating the conventional treatment. Here, we would like to present a new non-invasive method of energy therapy – Josef Zezulka Biotronics – that exhibits a unique potential to further extend the application of energy therapy in integrative healthcare. It showed to be able to heal even patients incurable by conventional medicine.

**Method:** Biotronics is a new method of energy therapy based on the assumption that the human organism consists of three basic components – somatic, psychic and vital. Biotronics works in the area of vital, biological forces, which are used by a biological instrument – a biotronicist (a therapist). The biotronicist applies a specific force structure, which is targeted according to the diagnosis. Via such targeting, in contrast to other fields of energy therapies, the biotronicist's intervention can be more effective and successful.

**Results:** A case series included several oncological patients who experienced unsuccessful treatment by conventional medicine. They were for example a woman, aged 52, with a large inoperable stomach adenocarcinoma in terminal stage, or a woman, aged 70, with a small cell bronchogenic carcinoma with metastasis in mediastinal and throat nodes. After termination of unsuccessful oncological treatment and consequent biotronic treatment, a long-term survival for many years with high quality of life was observed in all these patients. Statistics of the treated diseases further shows that beside cancer diseases Biotronics is most frequently used to treat cardiovascular diseases, neurological diseases, and joint diseases.

**Conclusion:** Long-term survival of oncological patients after unsuccessful conventional treatment, in terminal stage of the disease, is an extremely rare therapeutic outcome. Achieving such outcome in several independent cases is an unusual success that indicates a significant potential benefit of Biotronics in integrative oncology. Statistics of the treated diseases in the biotronic practice shows, however, that it is far from being limited to oncology. This new discipline and its possible therapeutic potential in integrative healthcare should therefore be subjected to more detailed research.

### BIOTRONICS – HISTORICAL CASE SERIES IN ENERGY THERAPY

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**Background and objective:** Biotronics is an emerging method of energy therapy that exhibits a unique potential to further extend the application of energy therapy in integrative healthcare. It showed to be able to heal even patients incurable by conventional medicine. Here, we would like to present historical unpublished results from 1982, describing an unusually successful research project of the founder of Biotronics – Mr Josef Zezulka.

**Method:** Case series of 20 patients. The selection was aimed at diagnoses, in which the highest susceptibility to biotronic treatment was expected, based on previous experience with the method. These were asthma bronchiale, ulcus duodeni or ventriculi, rheumatism and malignant tumours. The selection further included also patients with lower expected susceptibility to biotronic treatment, such as cardiac diseases, hypertension. All the patients underwent biotronic treatment. In addition to observations of the patients' clinical state, evaluation of urine examination, blood test, and erythrocyte sedimentation rate was performed.

**Results:** Out of the initial group of 20 patients, 14 patients were evaluated. Results of only 2 patients were inconclusive, and the therapy of 4 other patients was discontinued early. Mild to significant improvement in patients' health condition was confirmed by both the clinical state, and the laboratory examinations. Improvement was achieved also in diagnoses with lower expected susceptibility to biotronic treatment.

The most striking result was observed in the case of stomach carcinoma in terminal state, in which overall revitalization was achieved after seven days of biotronic intervention. The artificial duct in the abdominal cavity (after colostomy) healed up spontaneously, without surgical intervention. Such result after a non-invasive intervention is not known in the medical literature up to today.

**Conclusion:** Biotronic treatment resulted in positive changes in patients' health condition, which were observed both in the patients' clinical state and the laboratory examinations. Such outcomes indicate a significant potential of Josef Zezulka Biotronics in integrative healthcare. As the research project was politically discontinued after completion of only the first half of planned biotronic interventions, the achieved outcomes are even more striking. Therefore, this new discipline and its possible therapeutic potential should be subjected to more detailed research.

## REIKI AS A WELL-BEING PROMOTER IN AN OBSTETRIC HOSPITAL SERVICE: A PILOT STUDY

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**Background and objective:** To know if there is acceptance of reiki by hospitalized high-risk pregnant women and if its application can improve their well-being.

**Method:** Adult high-risk pregnant women, with a history of blood pressure (BP) alterations, recently admitted to a university hospital were invited to participate in the study and were randomly assigned to a control group (CG) or an experimental group (EG) according to the order of admission and type of BP alteration; blinded for the interview researchers. After signing the informed consent form, sociodemographic, health data, levels of psychological distress (by DASS-21 scale), were collected. Also, measures of BP, temperature, cardiac frequency (FC), blood oxygen saturation (SAT), well-being perception (by VAS Scale) and pain perception (by VAS Scale) were collected and re-collected one hour later. The CG did not change anything in their routine, and the EG received a remote reiki session, started just after of the first collection data. All reiki sessions were performed by the same therapist. Mann-Whitney test were used to analyse differences between groups.  $p < 0,05$  were considered significant.

**Results:** 41 pregnant women were invited; 8 refused to participate; 4 did not respond the DASS-21 scale completely and there were 7 losses due to interference or other intercurrents; therefore, data from 22 pregnant women were analysed. All of them have a partner, just 27,3% knows what reiki is. 12 were in the EG and 10 in the CG. Respectively with a mean age of  $32 \pm 1,37$  and  $34,6 \pm 1,72$  years, and gestational age of  $33,19 \pm 0,95$  and  $34,77 \pm 0,75$  weeks. In terms of psychological distress just two women did not manifest any of them. No difference between groups were observed for distress, temperature, CF, SAT, BP and well-being. A significant difference ( $p = 0,025$ ) between groups were observed for pain when compared pre- (EG:  $4,83 \pm 0,81$ ; EC:  $3,96 \pm 0,86$ ) with post-values (EG:  $2,06 \pm 0,59$ ; EC:  $3,59 \pm 1,03$ ).

**Conclusion:** No differences in well-being were observed with the remote reiki session for hospitalized pregnant women. Studies considering a remote or face-to-face reiki application need to be carried out with different therapists. The acceptance of reiki is not yet a consensus, nor is its knowledge.

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### **Ketogenic Diet: Enhancing Survival and Quality of Life in Lymphoma**

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**Objective:** This study aims to explore the impact of the ketogenic diet (KD) on controlling the growth of canine lymphoma and its influence on the patient's quality of life.

**Methods:** We present the case of Donna, an 11-year-old Bulldog diagnosed with T-cell oral lymphoma, which was surgically removed in June 2022.

Following surgery, Donna's owner declined chemotherapy in favor of a metabolic nutritional therapy using KD. The diet, high in fats, low in carbohydrates, and moderate in proteins, aims to mimic the metabolic effects of fasting. This reduces the availability of glucose, the primary energy source for cancer cells, and forces the body to produce ketones, which are less utilized by cancer cells.

**Results:** Since the initiation of KD, Donna showed significant improvements in vitality, resuming daily activities, and maintaining normal blood parameters without the need for hospitalization. Remarkably, Donna is alive and well 2 years post-diagnosis, surpassing the average survival rate for canine cutaneous lymphomas, which is 3-8 months.

**Conclusion:** The ketogenic diet proved to be an effective strategy in controlling canine lymphoma, significantly improving Donna's quality of life. This case highlights the potential of KD as a therapeutic complement, exploiting the metabolic vulnerabilities of tumor cells. Beyond slowing tumor growth, KD allowed Donna to enjoy a normal life with her family, proving to be a powerful ally in extending the survival of patients with canine lymphoma. This study underscores the importance of innovative metabolic strategies in cancer management, promoting not just life extension but a significantly enhanced quality of life.

### Attitudes toward nutrition in Germany - Results from an online representative cross-sectional survey

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**Introduction:** Dietary practices of Germans experience a shift towards healthier and more sustainable. Aim was to gain a comprehensive insight into the attitudes toward nutritional considerations and realities in Germany, and towards relationships between influencing factors, including taste preferences, ethical considerations and sociodemographic variables.

**Methods:** An online-representative cross-sectional survey conducted in 2022 questioned German-speaking adults aged 18-75. It was conducted by using Computer Assisted Web Interview. The questionnaire included questions about dietary patterns like eating habits, the importance of nutrition, personal reasons for food choices, sustainable product consumption, willingness to change one's diet, and self-reported health-oriented dietary action. The dataset was analyzed with methods from descriptive and inferential statistics.

**Results:** Within the 4,065 participants, those with higher education were associated with higher priority of healthy nutrition ( $p < 0.001$ ). Personal net income played a relevant role, with 60.6% of those earning above 2000€/month emphasizing the importance of a nutritional diet ( $p < 0.001$ ). Additionally, age impacted the importance attributed to healthy eating. 62.4% considered healthy nutrition important, with 20.4% strongly agreeing and 41.9% mostly agreeing. A gender difference exists, with participants identifying themselves as females being significantly more likely to prioritize a healthy diet (strongly agreeing: 23.4%, mostly agreeing: 44.0%). 10.7% of all participants abstained from eating meat, 28.6% defining themselves as flexitarians and 54.1% as omnivorous. Women showed greater tendency toward plant-based diets (81.7% of vegans, 69.4% of vegetarians). Personal taste preference was the most important factor to influence the way participants eat (77.2%). In terms of following the recommendation of a doctor or scientist, 32.7% would seriously consider it and 37.4% would maybe think about it.

**Conclusion:** Data suggests that variables like age, gender, income, education, political and religious beliefs and social milieus affect dietary preferences. A transformation toward more plant-based diets could benefit individual and planetary health. Future research should assess gender- or milieu-specific dietary programs' efficacy, explore cultural influences, and evaluate the impact of nutrition-trained physicians in optimizing dietary patterns. Further studies should focus on strategies for promoting healthy diets, considering sociodemographic, economic, and environmental factors at individual, community, and policy levels utilizing robust study designs.

**Keywords:** nutrition, health, milieus, survey, Germany

### Health on a plate: Using implementation mapping to establish a healthy and sustainable food environment in the Charité Centre for Pediatric and Adolescent Medicine

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**Background and objective:** Promoting plant-based diets in healthcare communal catering can have a broad health and environmental impact and inspire sustainable individual eating habits. Given the numerous obstacles to healthier, sustainable catering, guidelines are needed to support food service managers in implementing healthy and sustainable menu practices [1, 2]. This project aimed to 1) assess the environmental footprint and dietary quality of the meal plan at the Charité Centre for Pediatric and Adolescent Medicine, 2) develop a sustainable and healthy menu and catering concept tailored to children and adolescents, 3) implement it at the Charité Centre for Pediatric and Adolescent Medicine and establish a standardized implementation guideline. To ensure sustainability and acceptance, input from patients, parents, stakeholders in food service management, and medical staff were incorporated into the catering concept.

**Methods:** The project is divided into three phases: (1) initial environmental and nutritional assessment of the menu plan and needs assessment including interviews with 3 representatives of each a) patients and parents, b) stakeholders of the food service management and c) medical staff; (2) Creating a sustainable menu and catering concept through a participatory approach involving stakeholders in food service management, alongside communication materials for families and clinic staff; (3) rolling out the new menu and evaluating its acceptance among children by comparing patient ratings before and after implementation, and conducting in-depth qualitative interviews with five patients. The process is scientifically informed and evaluated with the concept of implementation mapping [3].

**Results:** The project is in its starting phase and discussions with stakeholders of food service management are underway. Phase I is expected to start in september with a total project duration of two years. Expected results are that the formation of an assertive planetary health nutrition core-team and the involvement of chefs is crucial for the transformation and that children and parents appreciate a more sustainable and healthier menu.

**Conclusion:** Inpatient facilities in health care have the responsibility to offer healthy and sustainable catering to protect both individual and planetary health. Scientific support and implementation guidelines can help food service managers in implementing sustainable and healthy menu practices.

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### Effectiveness of integrative medicine in the management of lymphoma survivors

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**Background and objective:** Lymphoma is a malignant disease of the lymph nodes. Although recovery rates are above 60%, most patients experience a significant impairment in quality-of-life after treatment which should be addressed in survivorship clinics. In the present study, we evaluated the role of an integrative clinic in the management of lymphoma survivors.

**Method:** In this preference-based-controlled trial, patients over age 18 in remission after treatment for lymphoma are allocated to 2 study groups. Patients willing to attend the integrative survivorship clinic are assigned to the intervention group; while those willing to fill questionnaires only are assigned to the control group. In the intervention group, patients are given complementary medicine, dietician, spiritual and social support, at least once weekly for 3 to 6 months, on top of conventional standard-of-care. Primary outcome is improvement in quality-of-life based on EQ-5D index score at 1, 2 and 3 months after recruitment. Secondary outcomes include symptomatic relief based on MYCAW questionnaire, economic improvement, cognitive improvement and disease course.

**Results:** For now, 28 patients have been recruited: 16 in the intervention and 12 in the control arm. Twenty of them have achieved at least 3 months of follow-up (intervention: 9; control: 11). Fifteen (54%) patients are women, and the median age is 60.5 years. Baseline characteristics are not statistically significantly different between the study groups. At 1-month post-recruitment, there was no statistically significant difference in quality-of-life between the study groups (EQ-5D index score:  $0.63 \pm 0.27$  in intervention vs  $0.34 \pm 0.41$  in control,  $p=0.06$ ). However, at 2- and 3-month post-recruitment there was an improvement in quality-of-life (EQ-5D index score) in the intervention as compared to the control group (2 months:  $0.70 \pm 0.17$  vs  $0.25 \pm 0.48$ ,  $p=0.01$ ; 3 months:  $0.70 \pm 0.35$  vs  $0.24 \pm 0.51$ ,  $p=0.03$ ). On MYCAW evaluation, a symptomatic improvement was observed at 1 month ( $p=0.001$ ), 2 months ( $p=0.008$ ) and 3 months ( $p=0.006$ ). For now, no significant difference was found between groups in terms of cognitive, economic and disease course.

**Conclusion:** An integrative approach in survivorship clinics for patients who recovered from lymphoma seems to improve treatment-related symptoms and quality-of-life. Further recruitment is needed for evaluation of long-term results.

### Resources and facilitators of workplace well-being among healthcare professionals in a hospital setting – results of a qualitative study

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**Background and objective:** Working in a hospital setting is both rewarding but also represents a demanding and often stressful work environment due to personnel shortage and high work volumes to name but a few. A considerable body of literature addresses the adverse effects of working conditions that often result in poor well-being of medical professionals. This paper moves from a problem-centered approach towards resilience-focused pathways. It does so by focusing on (self-reported) individual and organizational resources and facilitators of workplace well-being through medical professionals' ability to perceive and engage with capacities within a demanding work environment.

**Method:** The present paper is based on a qualitative study in which data was collected in two different German hospitals through interviews with medical doctors, nurses and medical assistants. Data was analyzed through inductive-deductive qualitative content analysis.

**Results:** Our findings show a variety of resources in 4 domains overarching individual solution-oriented mindset constitutions, success-driven behaviors, sense of meaning as well as resource-enhancing environmental factors. Healthcare professionals showed diverse individual strategies and behavioral patterns to build resilience and foster proactive approaches to deal with challenges and high-pressure situations.

**Conclusion:** Beneficial influencing factors could be identified that reveal underlying processes and opportunities to prevent negative health-related outcomes. The findings provide valuable insights into specific individual coping strategies and attitudes that appear to be associated with resourcefulness. Information is provided to institutionally and individually support a successful management of a health professionals' work life.

*Funding: This work is part of a project funded by a German health insurance company (Techniker Krankenkasse) on burnout prevention among healthcare professionals at Charité – Universitätsmedizin Berlin. The funder has no influence on the contents and results of the present work.*

### Integrative immunological approach in a child with alopecia areata universalis and EBV reactivation: a case report

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**Background and objective:** Alopecia universalis is the extreme form of alopecia areata<sup>(4)</sup>. Alopecia areata is considered an autoimmune disease and has been linked to atopy, stress, nutrient deficiencies, or chronic viral infections<sup>(3)(5)</sup>.

This case aims to emphasize the importance of a comprehensive evaluation in the diagnostic process of pediatric alopecia universalis, including medical history, evaluation of immune status, and detection of latent infections such as Epstein-Barr virus (EBV)<sup>(2)</sup>.

**Method:** We report on a 7-year-old boy who presented with alopecia areata, having progressed to alopecia universalis in 15 days. Initial treatments with oral corticosteroids and biotin led to worsening symptoms, including skin lesions and digestive system disorders<sup>(1)</sup>. After refusing treatment with JAK inhibitors and due to the child's exhaustion, the parents requested an integrative evaluation.

The case is studied using lymphocyte typing and herpesvirus serologies. The boy is treated with an anti-inflammatory diet, micro-immunotherapy, and micronutrition.

**Results:** The clinical history reveals episodes of tonsillitis and respiratory infections, including influenza. Six months before the onset of alopecia, he was infected with COVID-19. The alopecia was accompanied by chronic asthenia, growth and weight delay, sleep and digestive tract disorders, and skin and nail lesions.

Initial lymphocyte typing shows the characteristics of an autoimmune process with a favorable prognosis: a hyporeactive immune system with limited cytotoxic capacity. Serology shows evidences of EBV reactivation. The patient was treated with an anti-inflammatory diet, micronutrients, and micro-immunotherapy aimed at reducing inflammation, recovering the immune system, and controlling EBV reactivation. After the treatment was instituted, all the mentioned symptoms disappeared, in addition to the boy regrowing and regaining hair on his face and eyelashes.

**Conclusion:** The integrative medical approach carried out with this patient has allowed us to identify disorders at the immunological level and correctly assess the reactivation of the EBV, which was probably the main triggering factor of the alopecia universalis that the boy presented. Conventional treatment with systemic corticosteroids often causes side effects in pediatric patients. An integrated immunological approach focusing on managing inflammation and chronic viral infection like EBV has significant potential for clinical benefit.

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### An overview of 50 published databases resources for Traditional, Complementary and Integrative medicine: An update

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**Background and objective:** In recent years, strategies have been developed to strengthen the role of Traditional, Complementary and Integrative Medicine (TCIM) in supporting the health of the population. To obtain evidence-based information about TCIM, online databases are a common way. An earlier article on this subject has been published in 2010 providing an overview of 45 databases on Complementary and Alternative Medicine (CAM) to find evidence in scientific publications.

To revisit and update the previous work with the question of whether, analogous to the further development of TCIM establishment in medicine, a broad range of databases is available to help to obtain scientific information for Integrative Medicine.

**Method:** The CINAHL, CAMBASE and MEDLINE/PUBMED databases and the GOOGLE SCHOLAR search engine were searched for publications related to TCIM published in peer-reviewed journals between 2010 and March 2024. All included databases were visited online and information on the origin, content and scope of the database was extracted.

**Results:** Of the original 45 databases from the years up to 2009, 39 databases could still be found, of which only 20 were still available online. 30 additional new databases were identified with the help of the literature search. The databases deal with herbal therapies (n = 13), Traditional Chinese Medicine (n = 9) and some with a variety of TCIM modalities (n = 8). Most of the newly identified medicinal plant databases have been created for the treatment of multifactorial and chronic diseases. They offer various scientific resources such as crude drugs, indigenous plants and structures for natural and phytochemical components with molecular biological content. In total, 50 published and available database resources have been identified for TCIM.

**Conclusion:** This literature review illustrates the dynamic development in the database landscape over the last 15 years. A paradigm shift seems to have taken place, with very few databases having maintained their TCIM content/topic. Advances in plant genomics and molecular biology are influencing treatment options for diseases worldwide, which is impressively reflected in the high number of databases in the field of medical plants/herbal therapy.

**Keywords:** Evidence-based Literature, Databases, Search Engines, Traditional Complementary and Integrative Medicine

### Silent Inflammation in the Jawbone and Osteoimmunology - Systemic Diseases and Neglected Chemokine Inflammatory Pathways Detected by Ultrasound

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Within the medullary cavity, cytokines produced by immune cells have important effects on stem cells for the maintenance of the immune system and for the development of systemic immunological diseases. In the research presented here, we have investigated in detail a largely unrecognised fat-degenerative disease in bone marrow defects (FDOJ), which appears as a globule of fat within an intact cortical bone. This tissue is in an ischaemic, fatty degenerative state and is biochemically highly active, producing high levels of certain cytokines, namely RANTES/CCL-5 (R/C). These locally chronic and singularly over-expressed chemokine R/C inflammatory messengers drive undesirable dysregulations in the immune system through inflammatory signalling cascades. R/C pathways are upregulated in a number of systemic immunological diseases such as cancer, depression, multiple sclerosis or arthritis. There is strong scientific evidence that the development and persistence of a variety of systemic immunological diseases may be related to the mostly undetected R/C overexpression in bone marrow defects such as FDOJ. Therefore, serious health risks may be associated with FDOJ bone marrow defects acting as a “silent cytokine storm”.

Removal of these R/C-expressing foci in a simple dental surgery procedure sometimes results in an impressive reduction of symptoms in immune diseases. Why are R/C-expressing foci in the jawbone unknown in dentistry? FDOJ jawbone defects cannot be detected by conventional x-ray techniques. Alternatively, modern ultrasound devices are available for radiation-free diagnosis of bone density and are able to objectify the fatty degenerative areas of the jawbone beyond radiography. The authors propose a new approach at the interface between the jawbone and the immune system to identify the discussed cavitational FDOJ comorbidities. This possible integrative focus for immune disorders opens a new aspect for therapeutic intervention in Integrative Medicine.

## Acupuncture as integrated treatment in pain and dysfunction syndrome of temporomandibular joint

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**Background and Objective:** Acupuncture is one option to treat oral and facial pain. International Organizations, N.I.H. and W.H.O., gave reports on acupuncture. The Consensus Conference on Acupuncture (N.I.H. 1987) asserted the usefulness of acupuncture to treat the post-operative pain in oral surgery, meanwhile for other diseases it could be considered an additional treatment or an acceptable option.

The World Health Organization in his "Acupuncture: review and analysis of reports on controlled trials, Geneva 2002" asserted: "...the effect of acupuncture is comparable with that of conventional, occlusal, physical and drug therapies for temporomandibular disorders...".

TMJ pain and dysfunction syndrome is a common disorder of TMJ. Treatment options include: counselling, physiotherapy, pharmacotherapy, splint therapy, intra-articular steroids, manipulation under general anaesthesia, arthrocentesis, surgery and further referral.

Physiotherapy benefits to any patient with PDS of TMJ in which there is muscular involvement. Electroacupuncture (EA) is one of the methods of physiotherapeutic treatment. Since 2001 our team has used EA associated EMG of masticatory muscles to treat pain and muscular disorders of TMJ. The objective of our study is to evaluate the effectiveness of EA as integrative treatment of TMJ'S PDS.

**Method:** When treating patients with a temporomandibular disorder it is usual to use more than one method of treatment to maximise any complementary effects. We've used EA (continuous wave, 2-20Hz, 20' each treatment, one course=8-10 treatments) on 5-6 local points according to Chinese Acupuncture Theory to treat patients suffering from PDS of TMJ. In some patients we have evaluated the muscular imbalance of muscles anterioris temporalis and masseter before and after EA by a surface EMG.

**Results and Conclusion:** More than 75% of the patients had a significative reduction of pain (V.A.S.) after one or two courses of EA showing how it could be considered an effective option in treating pain and muscular disorders of TMJ.

Knowledge, experience and proper training are necessary in order to recognize the symptoms in TMJ pain and dysfunction syndrome. Many times a multiprofessional approach is necessary to resolve the pathological problems of this syndrome: there is no place for intellectual isolationism in the integrative approach of the disease.

### Correlation between Autism Spectrum Disorder and Biochemical Parameters: Our Experience

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**Background and Objective:** Autism spectrum disorder (ASD), tic disorder (TD), and hyperkinetic syndrome of childhood (ADD/ADHD) are recently categorized as abnormal connectivity spectrum disorders (ACSDs). According to the CDC's Autism and Developmental Disabilities Monitoring, approximately 1 in 68 children in the USA are diagnosed with ASD. Among various treatment approaches for ASD, a holistic approach is also employed. This study aims to investigate the relationship between ASD and selected biochemical parameters.

**Method:** A statistical analysis of laboratory results from both male and female patients was conducted. Patients were divided into two groups: those without ASD symptoms (nASD) and those with ASD symptoms (ASD). All participants were recruited from the Holistic plus Center in Belgrade, which utilizes a holistic-personalized approach to treatment. Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS).

**Results:** The study included 99 patients, with 86 not having ASD (86.9%) and 13 having ASD (13.1%). The mean age of participants was  $9.9 \pm 1.5$  years. Two biochemical parameters showed statistically significant differences between the nASD and ASD groups: creatinine levels ( $50.02 \pm 18.3$  vs.  $35.7 \pm 8.4$ ;  $p = 0.028$ ;  $df = 45$ ) and free triiodothyronine - fT3 levels ( $6.32 \pm 1.2$  vs.  $7.53 \pm 0.99$ ;  $p = 0.008$ ;  $df = 37$ ). Other parameters showed differences but were not statistically significant. Blood glucose levels were  $5.32 \pm 1.9$  vs.  $4.82 \pm 0.67$ ; HbA1c levels were  $5.27 \pm 0.82$  vs.  $4.96 \pm 0.37$ ; TSH levels were  $3.56 \pm 0.54$  vs.  $4.2 \pm 0.01$ ; vitamin D levels were  $68.2 \pm 9.4$  vs.  $64.9 \pm 13.5$ ; oxytocin levels were  $372.9 \pm 29.3$  vs.  $434.7 \pm 31.8$ ; and osteocalcin levels were  $86.4 \pm 4.39$  vs.  $94.3 \pm 7.78$ .

**Conclusion:** These results suggest that certain biochemical parameters may be altered in patients with ASD. Further research is necessary to clarify whether these alterations are causal factors or consequences of ASD. By applying a personalized and holistic approach to patient treatment, these changes may be mitigated, leading to better outcomes for individuals with ASD.

Keywords: holistic treatment, autism, integrative medicine, personalized supplementation, nutrition

### Some biochemical parameters and their relation with prostate specific antigen – our experience

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**Background and Objective:** Prostate-specific antigen (PSA) is a protein produced by the prostate gland, predominantly present in semen but also detectable in the bloodstream. PSA exists in two forms in the blood: bound to proteins and free (fPSA). The upper limit for total PSA is typically 4 ng/mL, and levels tend to rise with age due to prostate enlargement. PSA is utilized both as a screening tool for prostate diseases, including cancer, and for monitoring treatment efficacy. This study aims to explore the relationship between PSA levels and various biochemical parameters using a holistic approach.

**Method:** Laboratory analyses were conducted on patients of both genders. Participants were divided into two groups: those with normal PSA levels (NR) and those with elevated PSA levels (EV). None of the subjects were diagnosed with prostate cancer. All patients were recruited from the Holistic Plus Center in Belgrade, where a holistic-personalized approach to treatment was employed. Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS).

**Results:** The study included 88 participants, with ages ranging from 18 to 77 years. The mean age of the men was  $44.29 \pm 14.24$  years. While numerous biochemical parameters exhibited differences between the NR and EV groups, none reached statistical significance except for prolactin levels. The prolactin levels were significantly higher in the EV group compared to the NR group ( $579.9 \pm 14.2$  vs.  $317.5 \pm 12.4$ ;  $p = 0.032$ ;  $df = 5$ ).

**Conclusion:** This study suggests that an imbalance in the body, indicated by elevated PSA levels, may be associated with other biochemical changes, specifically elevated prolactin levels. The clinical significance of this finding remains unclear and warrants further investigation to determine its implications in prostate health and overall well-being.

**Keywords:** biochemical parameters, holistic approach, prolactin, prostate health

### MITOCHONDRIAL ENERGY METABOLISM AND BIORESONANCE

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**Background and objective:** It is known to all that every cell, organ and organism has a vibrational and bio-electrical nature. Each cell in our body has a specific frequency spectrum that it emits in the form of electromagnetic waves. Bioresonance formulated by Dr. Morell and developed by Rasche, is used as a method of diagnosis and treatment. (1,2)

Muscle activation from exercise induces metabolic changes in a characteristic and typified manner, especially in energy production at the mitochondrial level. Mitochondria are abundant in the heart, constituting 20-40% of the cell volume, as it is a tissue with high energy demand, therefore, the heart depends closely on the oxidative energy generated in the mitochondria, mainly from beta oxidation, of fatty acids, the electron respiratory chain and oxidative phosphorylation. (3)

The determination of laboratory blood parameters that indicate the level of mitochondrial function such as Mn-superoxide dismutase and glutathione peroxidase or cytosolic parameters such as Cu-superoxide dismutase and catalase, creatine kinase or phosphocreatine among others can indicate the level of mitochondrial activation. However, it is possible to qualitatively obtain the level of mitochondrial activation with Bioresonance with immediate results and at a lower cost. (4)

The objective is to assess signal modifications in parameters of mitochondrial activity at the level of peripheral muscles, quadriceps, and at the central level in cardiac muscle.

**Method:** There are 10 healthy, female and autonomous people. It will be analyzed by bioresonance at rest and after doing specific exercise.

- Ruffier test
- Baseline HR
- BP at rest and maximum effort
- One-leg bench squat strength test and knee dips.

It will be determined if there are bioresonance changes in mitochondrial activation pre and post exercise.

**Results:** The activation of mitochondria is proportional to the exercise performed in the quadriceps and depending on the elevation of HR, the activity in the myocardium is greater or less.

**Conclusion:** Bioresonance is proposed as a valid method for observing mitochondrial activation at the cardiac and quadriceps level. Studies are necessary for the implementation in Sports Medicine of a technique frequently used in Integrative Medicine.

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### Effect of healing earth on glyphosate and its influence on selected bacterial strains - An in-vitro study

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**Background and objective:** Glyphosate (Gly) is the most utilised herbicide in agriculture. As an inhibitor of 5-enolpyruvylshikimate-3-phosphate (EPSP) synthase, not only in plants, but also in bacteria, it is affecting mainly beneficial bacteria from intestinal microbiota. In contrast, *Clostridium* spp. and *Salmonella* strains are shown to be resistant to the toxin (1).

Healing earth is a traditional remedy that is used by many people, especially for gastrointestinal complaints and food intolerances. Luvos® healing earth in particular has a high binding capacity and appears to have a positive effect on the enteric microbiome (2).

The aim was to test whether Luvos® healing earth is able to protect intestinal bacteria from the negative influence of glyphosate,

**Method:** We performed an in vitro study with bacterial strains of the intestinal microbiota (*E. coli*, *Enterococcus faecalis*, *Enterobacter* and *Streptococcus thermophilus*). These were applied to liquid culture media (96-well agar culture media plates) and incubated natively, with the addition of glyphosate (Gly), of healing earth or with the addition of Gly plus healing earth at different concentrations in a humidity chamber at 37° C for up to 48 hours. Bacterial growth was monitored with an automatic reader at different measuring times.

Gly was added in a maximum active dose of 5 mg/ml, the healing earth (Luvos® imutox) in 9 concentration levels from 0.25 to 100 mg/ml in distilled water.

**Results:** In a preliminary test with 2.5 mg/ml Gly and a dilution series of 1.0, 0.5 and 0.25 mg/ml healing earth, *Streptococcus thermophilus* and *Enterobacter* reacted most clearly, so that all further tests were carried out with these strains.

In the following series of measurements, Gly showed a clear dose-dependent bacteriostatic effect. Conversely, the higher the healing earth concentration, the better the growth of the bacteria treated with Gly. The positive effect of the healing earth was detectable after 4 h (for *Streptococcus thermophilus*) to 5 h (for *Enterobacter*).

**Conclusion:** These results indicate that the use of Luvos healing earth is able to protect intestinal bacteria from the negative influence of harmful substances in food, especially glyphosate. However, further in vivo and clinical studies are required.

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### Can wearable device promote physical activity and reduce pain in people with chronic musculoskeletal conditions? (Systematic Review).

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**Background and objective:** Physical inactivity has been identified as the main cause of decline in musculoskeletal health. Becoming physically active can improve musculoskeletal chronic pain and quality of life. In the UK, National Institute for Health and Care Excellence guidelines recommended group or individual-based physical activity (PA) for musculoskeletal patients with chronic pain. Wearable technology has been identified as a promising option for intervening and motivating individuals with potential advantages of enhancing traditional exercise prescriptions.

The purpose of this systematic review is to identify and appraise the evidence on the effectiveness of using wearable devices to promote physical activity and reduce pain in people with chronic musculoskeletal pain.

**Methods:** Systematic searches of electronic databases: PubMed, CINAHL, and Medline (Ovid) were undertaken for randomized control trials, and observational studies of wearable-based interventions in patients with chronic musculoskeletal conditions.

**Result:** Thirteen studies were included in this review. The methodological quality of the included articles was found to vary between moderate and high quality. Studies included patients with osteoarthritis hip/knee (number; n = 5), low back pain (n= 3), rheumatoid arthritis (n=1), juvenile idiopathic arthritis (n = 1), inflammatory arthritis (n = 1), spondylarthritis (n=1), and ankylosing spondylitis (n=1). The intervention group of some of the studies included additional components associated with the use of wearable devices' such as diet diary, motivational interviewing or counselling, goal setting, multidimensional and tailored exercise programme interventions delivered in-person, remotely, or in a hybrid format. Intervention duration ranged from 1 week to 28 weeks. There were no serious adverse events related to the use of wearables. Overall, evidence from this systematic review shows that wearable technology interventions were effective in increasing physical activity significantly, especially where extra components (counselling, coaching, prescribed physical activity, goal setting, physiotherapist) were used among clinical and non-clinical populations. However, no significant effect was found in pain reduction with the use of wearable devices.

**Conclusion:** It is concluded that the use of wearable technology should be encouraged in patients with chronic musculoskeletal conditions. Additional research is needed, such as increasing the duration of the intervention, which may have an impact on pain.

### Effect of Bioresonance Therapy on Selected Bacterial Species

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**Background and objective:** Bioresonance therapy (BRT) is a biophysical procedure developed since the 1950s and includes both diagnostic and therapeutic applications. In the meantime, BRT has developed from the parascientific field through scientific studies. Both empirical application studies (2) and cell culture in vitro studies (3) show effects that can now perhaps be explained with the help of (quantum) physical findings (4).

The influence of BRT technology on bacteria is now described and propagated by the manufacturers and some users of BRT devices (1). Nevertheless, there are no valid scientific studies that confirm an effect of BRT on bacteria.

The aim of this in vitro pilot study is to test whether the growth-inhibiting effect of antibiotic substances can be transferred to selected bacterial strains using bioresonance.

**Method:** The trials are performed using two classic microbiological test methods (platelet MIC test, provocation test in liquid culture medium), three antibioticly active substances (enrofloxacin, glyphosate and its commercial derivative) and strains of *E. coli*, *S. thermophilus*, *E. faecium*, *Enterobacter spp.*

The BRT devices record vibrations of the test substances and can transfer them to organisms, in this case the bacteria. The recorded signals can be technically modulated, i.e. amplified, reduced, inverted, lengthened or shortened. The bacterial strains belong to the symbiotic microbiota and serve as model germs of the human digestive tract. Using indirect intervention is to test whether the test substances' antibiotic effect can be transferred to distilled water (platelet MIC test). In direct BRT interventions, the microorganisms are exposed to the frequencies of the antibioticly active substances in nutrient broth in the BRT device and their growth behaviour is studied.

**Results and Conclusion:** In preliminary tests of the ongoing study, initial indications were obtained in the platelet MIC test in the form of isolated inhibition zones in the bacterial culture. Differences in bacterial growth could be measured in the liquid medium after the intervention with BRT. The results of the currently ongoing main-tests will be presented at the Congress in November 2024 in Madrid. If the results are positive, further research questions will be formulated and innovative applications developed.

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## Biological Effects Of Thermoresponsive Hydrogel Loaded With *Viscum Album* Dry Ethanolic Extracts (Vade) On Human Prostate Cancer Cells: Seasonal Aspects And Influence Of Drug Delivery System

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The cytotoxic activity of a VADE-loaded hydrogel from *Abies alba* host tree harvested in winter was previously reported by our group(1,2). In the present work, the seasonal VADE effects of summer (VADSE) and winter, as well as, the influence of the delivery system (pluronic hydrogel), were investigated for the first time, in vitro human prostate cancer (PCa) cells.

Using DU145, PC3, and LNCaP cell lines the following analyses were performed: cytotoxicity, clonogenic assay, apoptosis, and cell cycle progression(3).

The IC<sub>50</sub> values showed the highest cytotoxic potential of summer hydrogel (VADSE-loaded hydrogel) after 24, 48 and 72 hours of incubation, as respectively described: DU-145: 63, 42, 35 µg/mL; PC-3: 87, 44, 49 µg/mL; LNCaP: 262, 195.7, 119.5 µg/mL. The incubation with VADSE-loaded hydrogel at 50µg/mL, for 48 hours, decreased DU-145 viability in 26% (p<0.0001). Besides, an increase of cells percentage under late apoptosis (13%; p<0.0001) and necrosis (11%; p<0.001), in addition to a cell cycle arrest in the S phase, were registered. The same treatment condition decreased PC-3 viability in 16% (p<0.0001) and increased the cellular percentage on late apoptosis in 7% (p<0.01). In counterpart, highest concentration (200µg/mL; 48hours) was needed to promote 64% (p<0.0001) of LNCaP viability reduction and decrease in 10.5% (p<0.01) cells under necrosis. Additionally, increase in cell percentage under early apoptosis (35%; p<0.001) and apoptosis (40%; p<0.001). Caspase 3/7, 8, and 9 activities were evaluated after 24 hours of treatment. DU-145 cells treated with 50 µg/mL showed a decrease of 18% (p< 0.01) in the activity of caspase 9 when compared to the control. Under the same treatment condition, hydrogel increased the caspase 3/7 activity (17%, p<0.01), as well as caspase 8 (14%, p<0.05), and caspase 9 (20.6%, p< 0.01), when PC-3 cells were evaluated. The LNCaP treatment with 200 µg/ mL of VADSE-loaded hydrogel promoted an increase of caspase 3/7 (26%, p<0.01) and caspase 8 (27%, p< 0.0001).

The experimental comparison using free VADE winter and summer confirmed the efficient delivery system promoted by this thermoresponsive hydrogel. This study reinforces the antitumoral potential of this novel natural VADE-loaded hydrogel to treat human prostate cancer cells.

**Keywords:** cytotoxic, mistletoe, pluronic micelles, antitumor.

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### From Constipation to Conception: A Holistic Approach to Women's Health – case report

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**Background and Objective:** Constipation is a common gastrointestinal issue, but it can sometimes reveal underlying health problems. This case report highlights a comprehensive, personalized treatment approach for a 36-year-old woman who initially sought help for chronic constipation but also faced significant fertility challenges.

**Method:** A personalized protocol, focusing on detoxification, customized nutrition, individualized supplementation, physical activity, adequate water intake, and proper sleep patterns (nighttime sleep) was designed and implemented by the author of this article. The protocol aimed to restore her biochemical balance and overall health. Regular monitoring of biochemical parameters was conducted to assess the effectiveness of the interventions. The objective of this treatment was to address her constipation and improve her overall health to support conception.

**Results:** Laboratory tests identified elevated homocysteine levels (16µmol/l), low vitamin D3 (13,7ng/ml), and TSH level above the upper recommended value (5,29uIU/ml). Over three months, the patient adhered to the personalized protocol. Significant improvements were observed in her biochemical parameters: homocysteine levels normalized (10,1µmol/l), vitamin D3 levels increased to optimal ranges (47ng/ml), and TSH levels decreased to within normal limits (first control: 4,56; second control – 3,7). These changes were accompanied by a resolution of her constipation. Importantly, the patient successfully conceived three months after commencing the protocol, confirming the holistic benefits of the treatment.

**Conclusion:** This case demonstrates the effectiveness of a holistic, personalized approach in addressing not only gastrointestinal issues but also underlying health problems that can affect fertility. The integration of detoxification, personalized diet, targeted supplementation, physical activity, proper hydration, and adequate sleep was crucial in normalizing biochemical parameters and improving overall health. These results suggest that personalized holistic interventions can be a powerful tool in treating complex health issues and support successful conception in women facing similar challenges.

This case underscores the importance of considering a comprehensive approach in clinical practice, where addressing one health issue can lead to improvements in other areas, ultimately enhancing the patient's quality of life and health outcomes.

**Keywords:** holistic approach, personalized treatment, fertility

### A Study on the Development of a Recording System for the Safety of Herbal Medicine during the Postpartum Period

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**Background and objective:** Postpartum care is important for the health of mothers and newborns. In Korea, the use of herbal medicines (HMs) in postpartum care has played an important role in the physical and emotional recovery of mothers after delivery, and their efficacy has been emphasized. However, the safety concerns associated with the use of HMs remain unresolved. The necessary datas for collecting adverse reactions to HM should be identified, and there is a lack of services that allow postpartum mothers to record these adverse reactions through a mobile app and to review and utilize the data on these adverse reactions. Therefore, We aimed to establish a system to register patients receiving HM treatment during the postpartum period. The system also collects clinical data on treatments and adverse reactions to build evidence supporting the safe use of HM..

**Method:** We identified the items necessary to provide a system that helps record and manage HM treatment information and adverse reactions in patients admitted to postpartum care centers at Korean Medicine hospitals. In addition, We identified the necessary items for collecting adverse reactions to HM. The system applied a data collection process and methods for HM treatment information and adverse reactions.

**Results:** The necessary items for collecting adverse reactions to HM include information on whether the HM was taken, the date of adverse reactions, symptoms related to the adverse reactions, demographic information, medical history, HM prescriptions, concurrent medication usage, and treatment specifics. Treatment details including demographic information, medical history, adverse events, HM prescriptions, and concomitant medication usage were collected during the hospitalization of patients at the postpartum care center. The recorded periods were the date of admission to the postpartum care center and the date of discharge. Two weeks after discharge, adverse reactions to the HM and other detailed information were collected. For data collection, we used myTrial Electronic Data Capture (NIKOM, Gyeongsan, South Korea), an electronic case report form (eCRF) system validated by the IT-KoM(National Agency for Korean Medicine Innovative Technologies Development). Additionally, We developed a recording system called SAFEHERE (SAFEty of HERbal medicine REgistry) that patients can record their safety experiences. This system sent an alarm and was used to record detailed information about the safety of HMs.

**Conclusion:** We developed the "SAFEHERE system". Clinical data on HM treatment processes and adverse reactions were collected. This research is important in advancing the scientific understanding of the safety and effectiveness of HM and in finding safe and effective ways to support postpartum recovery. Ultimately, this study contributes to the understanding of the potential benefits and risks of taking HMs and provides a basis for the appropriate use of HMs in postpartum care.

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### Complementary and alternative medicine usage among medical students at Shiraz University of Medical Sciences in 2021

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**Background:** The use of complementary and alternative medicine (CAM) is on the rise. The extent to which CAM and allopathic medicine will be integrated in the future, as well as the form this integration will take, will be significantly influenced by physicians. Therefore, it is essential to explore medical students' attitudes toward CAM to assess the potential for this transformation and its eventual adoption. Consequently, this study was undertaken to investigate the utilization of CAM methods by medical students in Shiraz, Iran.

**Methods:** In 2021, a study was conducted at Shiraz University of Medical Sciences among 300 medical students to investigate their use of Persian medicine (PM) and complementary and alternative medicine (CAM). A semi-structured questionnaire was used, and the sampling method involved quota sampling of the research community.

**Results:** A total of 300 medical students were included in the analysis, of which 121 were studying basic sciences, and 179 were studying physiopathology or clinical courses. Awareness of single herbal remedies, ( $p < 0.001$ ), combination herbal remedies ( $p = 0.021$ ), and cupping ( $p = 0.004$ ) as well as total mean score ( $p = 0.025$ ) was significantly higher in basic science students. A small percentage of students in both groups were familiar with each treatment method of PM through classical training courses or official and authoritative books. In most methods, students in both groups used less than 50% of PM methods for themselves or their families, and if used, these methods were mainly used for adjuvant therapy or pain relief. Girls were significantly more likely than boys to use single herbal remedies ( $p = 0.01$ ) and combination herbal remedies ( $p = 0.022$ ) to relieve pain for themselves or their families. Passing the CAM or PM course significantly increased the use or recommendation of any of the PM methods by medical students, especially for pain relief and to a lesser extent for adjuvant therapy ( $p < 0.05$ ).

**Conclusion:** Medical students are unsure about CAM due to a lack of knowledge but are interested in learning about it. There is a need for a structured CAM curriculum in medical education to maintain community health and improve physician-patient relationships.

**Keywords:** CAM, Persian medicine, Medical Education

### RAVA® - Regulative and Vitalizing (Ear-) Acupuncture

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RAVA is a semi-standardized method of ear acupuncture. The RAVA-method combines three defined RAVA base-points of the ear with two individually selected ear acupuncture points. No more than 5 needles per ear are used to prevent overstimulation of the ear-microsystem.

The causal principle for the regulation and vitalization of the three RAVA base-points is based on the theory of the Triple Warmer (San Jiao).

In fact, there are three theoretical concepts: The Triple Warmer is either understood as one of the six hollow organs (6 Fu), as the "Road of True-Qi (Zhen Qi)" or thirdly, as one of the three parts of the body.

In all of the three theories, the Triple Warmer ensures "the correct direction of movement of all types of Qi in all parts of the body" (hence also of blood and other body fluids) and thus supports all other organs in their functions (prevents stagnation).

This means that if we treat the Triple Warmer, we support every functional process of the body and that is why we are seeing a regulating effect. In addition, the Triple Warmer positively influences the production, transport and conversion of Qi and therefore has a vitalizing effect.

In the RAVA-protocol the Triple Warmer is embodied/represented by the three base-points Shen Men, Sympathetic II and Liver.

In terms of their location and function, the three RAVA base-points derived from the NADA-method and were correlated with the Triple Warmer system.

Shen Men (Fire, Heart) reflects the Upper, Sympathetic II (Earth, Spleen/Stomach) the Middle and Liver (Wood, Liver) the Lower Warmer.

Moreover, according to theory, all three base-points have an overarching effect on the body and mind.

By combining three base-points as causal therapy for body and mind and optionally two additional customizable ear acupuncture points, both chronic and acute symptoms can be treated at the same time.

In conclusion the RAVA-method is (didactically and clinically) a valuable addition to previously known ear acupuncture protocols.

### Evidence map of acupuncture for musculoskeletal disorders

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**Background and objective:** The available evidence has shown that acupuncture can be used as an adjunct or alternative therapy to medications, injections, surgery, or other modalities for managing musculoskeletal disorders. Nevertheless, more assertive evidence is needed to evaluate the substantial benefits of acupuncture therapy for musculoskeletal disorders. This evidence map presented the characteristics of the recently published acupuncture-related SRs on musculoskeletal disorders, including populations, type of acupuncture interventions, type of disorders, comparisons, outcomes, and methodological quality.

**Method:** Seventeen electronic databases were searched for SRs focusing on the effectiveness of acupuncture in treating musculoskeletal disorders published in recent 5 years. The databases searched include PubMed, Embase, Cochrane Database of Systematic Reviews (CDSR), Virtual Health Library (VHL), Allied and Complementary Medicine Database (AMED), Scopus, Web of Science, China National Knowledge Infrastructure (CNKI), Wanfang database, Chinese Scientific Journal Database (VIP), Korean Studies Information Service System (KISS), Research Information Sharing Service (RISS), KoreaMed, Oriental Medicine Advanced Searching Integrated System (OASIS), Ichushi Web, Latin American and Caribbean Health Sciences Literature (LILACS), and Epistemonikos. Reviewers in pairs independently performed the database search, screened each record for inclusion, extracted data, and performed quality assessments using the AMSTAR 2 – A Measurement Tool to Assess systematic Reviews.

**Results:** A total of 59 SRs published in recent 5 years addressing acupuncture therapy for musculoskeletal disorders were identified. The identified SRs involved 85,996 participants across 17 diseases and conditions from 889 clinical studies. The type of acupuncture therapies included are manual acupuncture, electroacupuncture, warm acupuncture, fire acupuncture, auricular acupuncture, and acupotomy. The most commonly evaluated musculoskeletal disorders were knee osteoarthritis (16/59, 27.1%), followed by osteoporosis (7/59, 11.9%), gouty arthritis (7/59, 11.9%), low back disease (6/59, 10.2%), and shoulder lesions (5/59, 8.5%). The main outcomes measured in the included SRs were pain intensity (18/59, 30.5%) and effectiveness rate (18/59, 30.5%). Based on AMSTAR 2 criteria, the methodology quality of the included SRs is considerably low.

**Conclusion:** This evidence map provides a comprehensive overview of SRs on acupuncture therapy for musculoskeletal disorders. By synthesizing and mapping the existing evidence, these initiatives will guide clinical decision-making and future research efforts in acupuncture field.

**Keywords:** Acupuncture, Overview, Systematic, Traditional medicine

### Can ACUPUNCTURE play a part of FACIAL MUSCLE TWITCHING treatment?

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**Background and objective:** There were few systematic review on acupuncture for hemifacial spasm. However, no conclusive recommendation can be drawn awaiting robust evidence to prove its efficacy. [1], [2], However, patients who are not keen for surgical intervention or not complacent with botox injection are seeking alternative or integrative approach of treatment.

**Method:** To report a case of a gentleman presented with right hemifacial spasm since 2015 attributable to a tiny vessel is seen looping close to the root entry zone of the right 7th nerve by Magnetic Resonance Imaging (MRI) of the Brain.

**Case:** 52-year-old gentleman with presented to neurologist with right hemifacial spasm in the year 2017.

**Results:** Investigation: His physical examination was unremarkable especially neurologically. Corneal reflexes were symmetrical, no vesicle or rash or scars from previous healed vesicles seen in ear canal or face. His MRI of the Brain done on 31st October 2017 showed a tiny vessel close to the root entry zone of the right 7th (facial) nerve. MRI BRAIN done on 11th May 2023 showed small vessel(left anterior inferior cerebellar artery) previously seen looping near the root exit zone (REZ) of the right facial nerve is seen inferior to it. There is no discernible distortion or displacement of the REZ. The right distal V4 vertebral artery lies anterior to the REZ without discernible contact. The bilateral 7th and 8th nerves are normal in appearance. No compressive lesion in the bilateral cerebellopontine angles or internal acoustic canals.

**Progress:** Since his first visit to neurology clinic, he was started on clonazepam with plan to switch to carbamazepine later. His MRI of the Brain done on 31st October 2017 showed a tiny vessel close to the root entry zone of the right 7th (facial) nerve. He underwent botulinum toxin injection was referred to neurosurgeon. He was counselled for options of treatment such as observation without medication, clonazepam, botulinum toxin, neurosurgical intervention. While considering all the proposed options, he visited complementary integrative medicine clinics for acupuncture treatment. He was having right facial spasm almost everyday, affecting right upper and lower eyelids, right cheek area. Acupuncture was performed weekly with plans to review response to acupuncture after 3-5 sessions. Meanwhile, patient will monitor duration of attacks, duration of attack free period, intensity of the spasm between sessions. After the 5th session of acupuncture, duration of spasm remained the same, spasm free interval lengthened, intensity about the same however the spasm affected area is getting slightly smaller. Thereafter, patient did not attend further acupuncture sessions due to work commitments. He returned to clinic again after 2 months. First visit after the break, his hemifacial spasm returned to baseline before any acupuncture treatment.

**Conclusion:** With regards to this gentleman, his right hemifacial spasm responded to acupuncture treatment partially. However, the question of sustainability and cure is still awaiting further sessions of acupuncture treatment. Hemifacial spasm is due to involuntary spasms of the facial area. It usually affects unilaterally however less than 5% affects bilaterally. Complete resolution is uncommon. Botulinum toxin injections are the most effective treatment currently available [3]. However, acupuncture treatment may have a role to play in treatment of hemifacial spasm once life threatening neurological aetiologies are excluded. A larger study is needed to support the use of acupuncture as recommended complementary treatment options.

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### The holistic way of healthy life: the 4 pillars of Mediterranean Medicine

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**Introduction:** The physical and psychological health of the young generations are very important period to determine healthy adults' life. Research have shown that girls are more exposed to interpersonal stress and they are more sensitive than boys. Women have a central role in several areas in life, their social role is indisputable. However, while carrying out their tasks, they encounter and develop internal stress issues, which require individual (non-pharmacological) management strategies. In our research we focused on dance and walk which can be suitable intervention to reduce stress and psychosomatic symptoms among women. Physical activity can provide increased confidence if it is practiced on regular basis.

**Background and objective:** In our complex, new method we help to provide physical, mental and emotional advice for women over 50years in order to prevent or alleviate stress diseases. We used the 4 pillars of Mediterranean medicine are which are: Movement, Mediterranean diet, Mental Health, Detoxification + Stress management. **The 1st pillar of Mediterranean Medicine is the Movement: walk and dance were in our focus.**

The aim of our study was to evaluate if a creative dance intervention and walking session twice weekly are effective for women with psychosomatic symptoms or stress, and how could influence the women's self-rated health (SRH).

**Method:** The complex education program lasted for ten weeks. The duration of the movement class has divided in two parts: the first 30 minutes of dance - which included 5minutes of warm-up, 20 minutes of dance practice, 5 minutes of stretching – and 30 minutes of slow walk as relaxation of muscles. Overall, the dance intervention applied a positive focus, aimed to strengthen the women's individual resources, which has support in the literature. In the questionnaires we followed a swedish version called "Dance project", regarding lifestyle, SRH, emotional distress, psychosomatic symptoms, feelings, sleep, school, interests, friends, leisure time and how they enjoy dance.

**Results:** The dance intervention group improved their SRH more than the control group. The women experienced the dance intervention to be enjoyable without any psychological pressure. They had challenge to choose music and to be creative in the choreographies, the made new friends which was very important in social aspect. The current study examines the effect of whole intervention, not only the actual dancing.

**Conclusion:** As the first pillar of Mediterranean medicine we implemented the swedish „Dance project“, which points out the role of joyful and nonjudgmental social activity in influencing young girls's health. In our study we focused on women over 50's and found that optimism has been shown to influence mental health. Stress and psychosomatic symptoms can be reduced by a nonpharmacological therapy, called dance, and walk.

**Keywords:** physical activity, mental health, dance, walk, stress management

### **Efficacy of local anesthetics in restoring neural regulation of inflammatory processes in cancer patients: a series of clinical cases**

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**Background and objective:** Inflammatory processes, pain and dysfunction in cancer patients are often related to autonomic nervous system dysregulation. Inflammation and immunity are under the control of neural reflexes, with the autonomic nervous system regulating perfusion, trophism and function of each tissue and organ. The aim of this study is to evaluate the effectiveness of local anesthetics in restoring neural homeostasis in cancer patients.

**Method:** We present a series of clinical cases of cancer patients with evidence of inflammatory processes and pain related to neural dysregulation. Patients were treated with neural therapy using local anesthetics applied to injury sites, nerve fibers or reflex areas. Clinical and instrumental parameters were evaluated pre- and post-treatment.

**Results:** In six clinical cases presented, application of local anesthetics according to the principles of neural therapy resulted in significant improvement (in inflammatory processes and in pain), with evidence of the restoration of balance between the sympathetic and parasympathetic systems.

These results remained consistent at 3-month follow-up in all cancer patients undergoing therapeutic recall on a weekly basis with benefit on overall survival (OS) but also on concomitant diseases (competitive causes of death).

**Conclusion:** These clinical cases suggest that local anesthetics may be effective in modulating inflammatory processes in cancer patients by acting on/addressing neural dysregulation and restoring sympathetic-parasympathetic balance. Neural therapy represents a promising approach in this context, to be further investigated with broader scale prospective studies.

**Keyword:** neural therapy, neural inflammation, cancer, local anesthetic

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### Homeopathy: a model for integrative medicine

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Integrative medicine represents the natural evolution of medicine. This concept brings together the best of conventional medicine and complementary treatments in a coordinated approach.

Homeopathy is an ambassador for integrative medicine:

- Homeopathy uses homeopathic medicinal products that comply with European Directive 2001/83/EC of the European Parliament and of the Council of November 6, 2001 on the Community code relating to medicinal products for human use. These medicines benefit from registrations issued by the health authorities, guaranteeing their quality, safety and efficacy. The manufacturing process is described in European pharmacopeia and includes a very specific stage of dynamization.
- Homeopathy benefits nowadays from high quality research studies in preclinical research which demonstrate the biological action of homeopathic dilutions and in physicochemical research which characterize homeopathic dilutions. (1)
- Homeopathy involves health professionals. Doctors and pharmacists oversee the treatment process, guaranteeing its relevance and patient safety. Numerous studies, including randomized, double-blind, placebo-controlled trials, have demonstrated its efficacy. (2,3)
- Homeopathy is based on an approach centered on the individual, with personalized treatment tailored to each patient. It treats specific symptoms while taking a holistic approach to the patient.

The concept of integrative medicine applies perfectly to chronic diseases such as cancer. This is known as integrative oncology. Homeopathy is an integral part of integrative oncology. Taken as a complement to conventional cancer treatments, it helps patients improve their quality of life by reducing side-effects, while empowering them to take charge of their own health.

Here again, several studies, including observational studies, have demonstrated the benefits of homeopathy in real life. (4,5)

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### Integrative Treatment of Metabolic Syndrome

Roberto Navarro Pérez

*Suplementos Zeus*

Metabolic Syndrome is a pathology that has been increasing rapidly in recent years. In Spain, 247 people are diagnosed with Metabolic Syndrome every day, which means 95,000 people every year. The Metabolic Syndrome is a group of metabolic alterations made up of abdominal obesity, insulin resistance, hypertension and hyperlipidaemia, which give rise to different cardiovascular diseases such as diabetes, hypercholesterolemia, heart failure, hypertension and even Alzheimer's disease.

Having Metabolic Syndrome increases the risk of suffering an episode of cardiovascular disease by a factor of two, the risk of type 2 diabetes by up to five and the risk of suffering a stroke by up to three.

In the treatment of this pathology, it is essential to understand the molecular basis of the cardiometabolic alterations. Visceral adiposity is considered the main trigger for most of the pathophysiological pathways of this syndrome, releasing the 3 key factors: insulin resistance, meta-inflammation and neurohormonal activation. The final pathway is a pro-inflammatory state that explains the increase in several inflammatory markers, such as interleukin-6 (IL-6), interleukin-1 beta (IL-1 $\beta$ ), C-reactive protein (CRP) and tumour necrosis factor-alpha (TNF- $\alpha$ ), observed in individuals with Metabolic Syndrome.

Increased visceral adipose tissue exposes the liver to elevated levels of free fatty acids (FFA) that alter hepatic lipid and carbohydrate metabolism, resulting in increased hepatic glucose production and pancreatic  $\beta$ -cell dysfunction, resulting in decreased insulin secretion. The result of this altered pathway is insulin resistance, which contributes to the development of hypertension and a prothrombotic state, as well as the release of pro-inflammatory cytokines, all of which contribute to increased risk of cardiovascular disease.

### OMEGA-3 FATTY ACIDS AND CURCUMIN SINERGIES RELATED TO INSULIN RESISTANCE AND TYPE II DIABETES

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The long-chain Omega-3 polyunsaturated fatty acids EPA and DHA have been widely used for their cardiometabolic health properties. According to EFSA (European Food Safety Authority), they can be administered in daily doses of 2 g to treat hypertriglyceridemia, a common feature of Type II Diabetes mellitus (T2DM). In addition, their potential in prevention and improvement of cardiometabolic risk in diabetes is of further interest<sup>1</sup>.

Several clinical trials have shown that they can be used effectively to improve insulin sensitivity in overweight adults, highlighting their significance in the prevention of T2DM<sup>2</sup>. There is also increasing evidence that a higher omega-3 level is associated with a lower risk of Type I Diabetes mellitus (T1DM), thus ensuring that omega-3 supplementation contributes to prevent insulin-dependent diabetes.

Many of the functions mediated by EPA and DHA are synergistically enhanced by co-administration with highly standardized extracts of *Curcuma longa* such as Hydrocurc®, a scientifically and clinically proven curcumin delivery system based on a micelle complex. This improved formulation provides the most bioavailable curcumin in a single dose, which is further supported by a human pharmacokinetic study showing 807 ng/ml of curcuminoids in blood plasma.<sup>3</sup>

Curcumin exerts important antioxidant roles protecting from oxidative stress in T2DM. As well, it modulates gene expression, which accounts for the decrease of inflammatory cytokines involved in Metabolic Syndrome's pathogenesis<sup>4</sup>.

In Beps Biopharm we have developed the formula "Puro Omega Curcumin Complex" as our next generation omega-3 with pro-resolving mediators (PRMs), combining 500 mg of EPA and DHA (3:2 ratio) with 150 mg Hydrocurc®, providing 100 mg curcumin per softgel. PRMs are omega-3 metabolites that are further converted into active compounds that widely mediate many of omega-3s known biological actions and functions<sup>5</sup>.

This unique product gathers the synergistic anti-inflammatory and pro-resolving effects of omega-3s and curcumin for diabetes and cardiometabolic health problems.

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### SIBO: Symptoms, Approach and Treatment

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Small Intestinal Bacterial Overgrowth (SIBO) is a dysbiosis characterized by an excessive bacterial population in the small intestine, leading to common symptoms such as bloating, abdominal discomfort, gas, and irregular bowel movements (constipation or diarrhea). If left untreated, severe cases of SIBO can lead to malabsorption of nutrients, resulting in deficiencies of essential vitamins like B12, iron, and fat-soluble vitamins, which may manifest as fatigue, anemia, and impaired immune function.

The prevalence of SIBO is often linked to underlying conditions such as digestive disorders, gut motility issues, abdominal surgeries, medication use, or an unhealthy lifestyle. Conventional treatments like antibiotics and restrictive diets, particularly low-FODMAP, may alleviate symptoms but are not long-term solutions, often leading to relapse and microbiota dysbiosis.

A more integrative and personalized approach has emerged, focusing on precision probiotics as an effective alternative. These specific strains not only help balance the microbiota but also address underlying causes of SIBO, such as gut motility and immune modulation. Probiotic strains such as *Saccharomyces boulardii* (Enterelle plus) and *Lactobacillus plantarum* LP115 (Adomelle) have demonstrated success in reducing bacterial overgrowth and alleviating symptoms. Studies show that probiotics, when tailored to individual needs, can achieve efficacy rates comparable to antibiotic treatments without their negative side effects, such as dysbiosis and reduced microbiome diversity.

Intestinal permeability, often referred to as “leaky gut,” plays a critical role in SIBO management. Increased permeability can allow toxins and bacteria to cross the gut barrier, exacerbating inflammation and symptoms. Products like Serobioma are formulated to support gut barrier integrity, helping to reduce permeability and promote overall gut health, which is essential in SIBO healing.

Additionally, lactoferrin has emerged as a powerful supplement in the treatment of SIBO due to its antimicrobial, anti-inflammatory, and immune-modulating properties. Apo-lactoferrina NatraFerrin® Kiroot is particularly effective in inhibiting bacterial overgrowth while supporting gut healing. The use of lactoferrin helps target both the underlying causes of SIBO and its symptoms, contributing to a more comprehensive treatment plan.

This new paradigm in treating SIBO highlights the need to address the root causes of dysbiosis through dietary adjustments, lifestyle interventions, and microbiome restoration strategies. Combining the use of human-strain probiotics, supporting gut barrier function, and adding lactoferrin for its antimicrobial and healing benefits, along with dietary and lifestyle modifications, can offer a more sustainable resolution for patients with SIBO. Future therapies are likely to focus on personalized microbiome modulation and holistic care.

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### Transforming Patient Care with Advancements in Precision Diagnostics

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### **Yatromathesis: The revival of western traditional integrative medicine.**

Juan Carlos Avilés Morrondo

*Laboratorios Heliosar*

The human being has always maintained a relationship of transcendence with medicine and the people who dealt with it, especially when the individual is more immersed in nature and its laws and principles.

This transcendent perspective, defined as traditional medicine, assumes that pain and all the changes that accompany it are ultimately part of an individual educational program that must lead to a process of integrated evolution.

Numerous therapeutic techniques, more or less linked to this concept, have been developed over the course of time.

In the current state of hyper-specialized epistemological deployment, the holistic unity of the individual in himself and in his relationship with nature has been largely lost, appearing numerous methods and therapeutic practices, not always practiced and understood from an integral dimension of the person.

In times of departure from the natural cultural pattern of evolution, and of induced incorporation of dispersive and dissolving elements, it is necessary to review the different expressions and magnitudes of life.

It is necessary to find a pattern of systemic relationship, in which physiological, psychic and social processes are consciously harmonized with the universal archetypes described and symbolized in traditional holistic cultures, in order to recover as much as possible, the encounter of the individual being with himself and with the natural and social universe that surrounds him and from which he often moves away.

Such work has been carried out by Yatromatesis for more than thirty years. This paper explains the difference between a therapeutic method and an updated model of traditional medicine.

It offers an approach to the understanding of the different aspects that make up the widest possible perception of the vital areas that accompany the human being since the beginning of time and until the end of these. The traditional lies in the perennial and integrative, as opposed to the academically conventional, which defends a more reductionist paradigm oriented towards the fundamentally material aspects and methodologically differentiated and specialized in watertight departments.

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