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Editorial

The Potential of Mind-Body Medicine for Prevention and Treatment of Stress and Trauma

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The significance of psychological and behavioral factors on health becomes particularly pronounced during vulnerable life stages such as childhood and old age (Dinan & Cryan, 2017), as well as in challenging circumstances (Dhabhar, 2014), ranging from extreme conditions such as space travel to traumatic events. Chronic stress, as highlighted in several studies (e.g., Bottaccioli et al., 2019; Nagaraja et al., 2016), is a paramount contributor to health outcomes. Both Mind-Body Medicine (MBM) and stress research draw a clear distinction between the impacts of chronic stress and acute, yet moderate, stress on health (Dhabhar, 2014). Even in situations perceived positively, the dosage and duration of stress are crucial, as prolonged stress, even when viewed positively, can pose health risks (Dhabhar, 2014). Understanding the intricate mechanisms by which stress and trauma affect health is a pivotal goal, and basic research in MBM seeks to unravel these complex relationships (Seifert et al., 2020).

Various MBM interventions, including mindfulness, compassion, yoga, and meditation practices, show potential for reducing stress during or after stressful periods (Black & Slavich, 2016; Kuo, 2015; Pace et al., 2009). Psychological processes, along with psychological and behavioral interventions, have been extensively studied for their influence on the immune system (Black & Slavich, 2016; Bottaccioli et al., 2019; Cruces et al., 2014; Falkenberg et al., 2018), positive psychological well-being (Boehm & Kubzansky, 2012), physiological functions (Gallegos et al., 2017; Pascoe et al., 2017), and the mind's impact on chronic diseases (Caes et al., 2017).

Notably, MBM therapies such as meditation have demonstrated a positive impact on inflammatory activity and virus-specific immune responses (Morgan et al., 2014). Of particular interest is the possibility of improved antibody response through meditation in individuals experiencing chronic stress, immunocompromised individuals, and older adults (Seifert et al., 2020). Studies that directly measure antibodies reveal intriguing findings, including mindfulness-based stress reduction (MBSR) resulting in significant increases in hemagglutination-inhibition influenza antibody titers (Hayney et al., 2014).

The literature on meditation as a stress-reduction method presents promising applications during or after stressful events (Gallegos et al., 2017; Pascoe et al., 2017). A randomized study indicates that MBSR may serve as a novel treatment approach to reduce social risk factors such as loneliness, along with molecular pro-inflammatory gene expression in older adults (Creswell et al., 2012). Meditation in general holds potential for reducing inflammation, including gene expression, cellular health, and chromosomal health

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(Esch et al., 2018), demonstrating self-regulatory and self-healing capabilities within the inherent restorative capabilities of the mind and body (Esch, 2020). Additionally, other MBM interventions, such as yoga, demonstrate beneficial effects by enhancing immune function (Falkenberg et al., 2018) and mitigating stress-related risk factors, including hypertension, obesity, and cardiovascular risk factors (Cramer, Haller, et al., 2014; Cramer, Lauche, et al., 2014; Lauche et al., 2016). Both yoga and meditation, examined from the perspective of Traditional Indian Medicine, are emerging as potentially effective tools in the context of the current pandemic due to their global popularity (Bushell et al., 2020; Payyappallimana et al., 2020; Tillu et al., 2020).

Qigong, supported by a growing body of scientific evidence (Guo et al., 2019; Zou et al., 2019), has been shown to be effective in improving cardiovascular risk factors in participants with metabolic syndrome according to a meta-analysis (Zou et al., 2019). Comprehensive MBM trainings, encompassing relaxation, nutritional counseling, and exercise within a multimodal group program (e.g. as described in Esch & Stefano, 2022), positively influence cardiovascular risk factors such as atherosclerosis and systolic blood pressure (Cramer et al., 2015). Some multimodal interventions include spiritual components aimed at enhancing connectedness with oneself, others, nature, or a higher power. Wondering Awe, for instance, has been identified as a crucial resource for psychological well-being during the COVID-19 pandemic (Büssing et al., 2023).

Collectively, MBM offers a range of easily implementable, evidence-based preventive and therapeutic options for stress-related diseases and for enhancing physical and mental resilience, with potential implications for the prevention and treatment of stress and trauma. However, further basic and clinical research, including methodologically rigorous studies, is imperative. Continuous updates to reviews are essential to provide a well-balanced perspective on the evolving data landscape.

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Research

Mindfulness Meditation and Spaceflight: A Potential Adjunct Therapy for Astronauts

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Studies on space medicine indicate that stress can affect astronaut behaviours and their ability to perform their multiple tasks (Kanas and Manzey 2008; De La Torre et al. 2012). Astronauts face various stressors due to micro-gravity, living in small and enclosed confines, isolation, mix of arduous workload and boredom, disconnection from the natural world, unpredictable events, etc. Glucocorticoid secretion has a central role in inflammation and immunosuppression. Furthermore, supra-physical amounts of glucocorticoids hinder innate immunity (de Kloet 2004).

Mid to long term duration space missions expose astronauts to possible chronic stress with consequential GC dysregulation. While studies show that dendritic recovery is possible in the hippocampal and pre-frontal cortex, this is only achievable when chronic stress is reduced. Consequently, astronauts have an increased risk for disproportionate stress. Even with psychological support astronauts encounter many psychological stressors during mid to long duration space missions.

To address this issue, we recommend that the practice of mindfulness meditation be incorporated to offset psychological stressors during space flight and post flight adjustment. Mindfulness meditation is a Buddhist derived technique and has for centuries been employed in Asian countries. The objective of mindfulness meditation is on focussing on being attentive to one's cognitive and affective states in the present moment. Through regular practice of mindfulness meditation, a participant may learn to disengage from repetitive thoughts, thereby, reducing negative states and enhancing "cognitive flexibility" (Shapero et al., 2018). Over the last two decades mindfulness-based interventions have been integrated in western psychotherapeutic regimes.

Regular practice of mindfulness meditation has been shown to reduce stress response, increased cerebral blood flow, enhanced analgesia, and improved attentional performance and immune function (Chiessa and Serretti 2009; Zeidan et al., 2010).

It has been argued that the effectiveness of mindfulness meditation could be due to its capacity for instigating changes in brain morphology (Newberg et al., 2010). Previous meditation research indicates an increase in neuroplasticity of white matter in individuals engaged in short term meditation (4 weeks) (Tang et al., 2012); second, short term meditation (5 days) improved stress control and attention in the target group (Tang et al., 2007).

A seminal study by Vernikos et al (2012) discussed the benefits of yoga for astronauts. Unfortunately, this study failed to explain what kinds of yogic practices were feasible to be conducted by space crew members within the space-ship environment.

We justify the use of mindfulness meditation, since breathing is a natural act and that by focussing in the present moment inner sensations may be alleviated for a fraction of time, thus, promoting a relaxation state.

We recommend that mindfulness meditation during spaceflight should incorporate deep and slow breathing in either an upright seated position or supine position, eyes closed with attention focussed on the lower abdomen. Due to noise generated by the space ship environment ear muffs can be worn. Deep and slow breathing could be performed between 5-10 minutes, once every eight hours. The short duration and relative ease mindfulness meditation incorporating deep and slow breathing makes it ideal for the monotonous and demanding environment of spaceflight. Mindfulness meditation provides a suitable therapeutic method for stress control and maintaining and improving neurological integrity. The convenience and reported

benefits of short-term mindfulness meditation can be employed to complement space medicine to benefit astronaut health. Furthermore, we recommend that astronauts commence mindfulness meditation several months pre-space flight in order to optimise its neuro-behavioural benefits.

Concluding Points

- Mindfulness meditation is an inexpensive therapeutic method which does not rely on being constantly monitored by health professionals.
- Mindfulness meditation may be used during pre-flight preparation, as well as, during and post space flight. The slow breathing practice of mindfulness meditation may assist astronauts during post-flight recovery as it has been shown that slow breathing practices are associated with increased cerebral blood flow, orthostatic tolerance, and reduction in hypertension.
- Mindfulness meditation can be used to complement space medicine.
- Psychophysiological research using EEG could be very helpful and informative for explaining phenomena described asan overview effect or other meditation induced mental states that several astronauts have reported while living in space.

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Wondering Awe and Gratitude as an Indicator of Perceptive Spirituality: Its Potential Relevance for Mind-Body Interventions

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Interventions that refer to the wide field of Mind-Body Medicine can have different effects. Some have short-term direct effects without any deep impact on attitudes and behaviors, and others can have more profound effects as people may start to change their views on life and behave differently as a process of transformation. Depending on the interventions (i.e., mindfulness meditation, yoga), people may be sensitized to question what gives hope, orientation, and meaning in their lives, to live from these resources, to behave more consciously, and to reconsider their interactions with others, and thus may become more compassionate and caring. This process of change or transformation can be an aspect of spirituality in its widest sense (Büssing et al., 2018a; Büssing, 2019). The multidimensional construct Spirituality has different interrelated "layers", such as experiences, attitudes and convictions, and related practices and behaviors; it may involve an existential search for meaning in life, convictions of interconnectedness, assumption of transcendence, and the perception of something Sacred in life (whatever this sacred is for a specific person) (Büssing, 2012, 2019).

This dimension of spirituality may be seen as implicit in mind-body interventions such as mindfulness meditation and yoga, but it is in most studies not explicitly addressed. While in recent mindfulness-based interventions, spirituality is assessed either as an outcome (i.e., spiritual wellbeing) or as a mediator (Hsiung et

al., 2023; Mahamid et al., 2023; Oner Cengiz et al., 2023), in yoga studies "spirituality is still a widely neglected area", as stated by Csala et al. (2021). Instead, yoga studies focus on short-term effects on health markers, relaxation, fitness/resilience, and wellbeing - and often ignore that the underlying intention of mind-body practices is a change of the mindset and thus lifestyle. Even when this may not be the direct aim of the respective mind-body interventions, some participants and patients may nevertheless become sensitized that something should be changed in their lives and thus they may aim to develop new insights and perspectives in the long run. These processes of spiritual transformation are important issues that are worth to be specifically addressed.

To operationalize such processes one may refer to a model of spirituality as a transformation process that requires the experiences of something significant or maybe Sacred (Büssing et al., 2018a). Highly emotional experiences ("sacred moments") can result in changes in personality, attitudes, and related behaviors (Cohen et al., 2010; Keltner & Haidt, 2003; Penman, 2021; Büssing, 2021). These can be conceptualized as moments of wondering that may result in perceptions of awe and gratitude (Büssing, 2021; Keltner, 2023). They are triggered by a wide range of situations, i.e., the view of impressive landscapes, a wild ocean shore, the behavior of specific people, a newborn child, or encounters with dying people (Büssing, 2021). The diversity and variety of awe triggers could be exemplified by a statement from a 66-year-old woman:

> *In my childhood, I was fascinated by nature, the winter landscape, the white magical world; also the circus, and music, and our animals. The birth of my children and grandchildren, when I see newborn children, playing children, running around, dancing. When I watch our bees in the garden, the animals, nature, the singing birds, and their conversations in the forest fields and in the garden. In the theater, in concerts, in the old churches, when I listen to music ..., when I dance, when I am at the sea or in the mountains, in museums, or just the wonders of art, technology, nature. Reading pearls of literature. The wonderful human being - his biology, anatomy, psyche […]. The list can be sooooo long. I was accompanying my mother in the last weeks of her life until her peaceful death. Also, my healing and the health I enjoy.*

Feelings of awe may be characterized by altered time perception, self-diminishment (in terms of egocentric views), connectedness, perceived vastness, physical sensations, and need for accommodation (Yaden et al., 2019). Nevertheless, there are also small moments of wonder (Büssing 2021), not only the rare vast experiences that change a person's life with a need for accommodation as suggested by Keltner and Haidt (2003).

Awe perceptions were found to be related to openness to new experiences in life (Silvia et al., 2015; Yaden et al., 2019; Konaszewski et al., 2022), to meaning in life (Zhao et al., 2019), ethical principles (Büssing et al., 2021), and emotional wellbeing (Rudd et al., 2012; Krause & Hayward, 2015; Rankin et al., 2019; Büssing, 2021); they may buffer negative perceptions (Koh et al., 2017; Atamba, 2019), trigger gratitude (Büssing et al., 2018; Konaszewski et al., 2022), prosocial behaviors (Rudd et al., 2012; Piff et al., 2015), commitment for disadvantaged people and the environment (Büssing et al., 2018), and may relate to resilience and positive health behaviors (Konaszewski et al., 2022). This resource was further a relevant predictor of positively perceived changes in attitudes

and behaviors during the COVID-19 pandemic, albeit it could not buffer the negative outcomes of the lockdowns (Büssing et al., 2021).

As the frequency of awe and gratitude are related to spiritual practices (i.e., meditation and prayer) and are much higher in people with a specific mindful lifestyle (i.e. religious brothers and sisters, and yoga practitioners) as compared to other groups (Büssing, 2021), one could assume that these lifestyles and practices may sensitize to be more aware of such unique moments. One may assume that when yoga is more than some kind of physical fitness training but a mindful lifestyle, it can result in the development of specific aspects of spirituality and a change of mindset, and thus sensitize the perception of the Sacred in life (Büssing et al., 2024). In fact, within a 6-months observation period, yoga practitioners showed an increase in their conscious and compassionate interactions with others, religious orientation, and mindfulness (Büssing et al., 2012). Even in a secular society such as Germany, spiritual topics were of relevance for yoga practitioners, particularly the search for the Divine in the world and living in accordance with the underlying spiritual convictions (Büssing et al., 2024). In a current, not yet published study, Awe/Gratitude was indeed also related to the prosocial outcomes of an underlying spiritual transformation (i.e., living by faith, peaceful attitude and respectful treatment of others, and a commitment to disadvantaged people and the environment).

Therefore, it would be important to also address the multidimensional construct of Spirituality both as an outcome and as a predictor and mediator variable in mind-body intervention that aim to change the attitudes and behaviors of the respective practitioners and patients. For that purpose, the 7-item Awe/Gratitude scale (Büssing et al., 2018b) that addresses an experiential aspect of spirituality that is accessible also to non-religious people (Büssing, 2021) could be applied.

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Research

The Relevance of Mind-Body Medicine for Rheumatic Diseases

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Chronic rheumatic diseases such as systemic autoimmune inflammatory diseases with multiple organ involvement, inflammatory arthritis and multilocular chronic pain syndromes can affect patients physically and reduce their psychosocial functioning and quality of life despite adequate medical treatment within treat-to-target regimens. Medical treatment options, including biologic and targeted synthetic disease-modifying antirheumatic drugs, have made remarkable progress over the last decades. Concurrently, complementary therapies have become increasingly popular for physicians and patients.

Guidelines recommend that individual treatment decisions should be made through a shared decision-making process based on patients' values, goals, preferences and comorbidities (Fraenkel et al., 2021). In addition to pharmacological interventions, individuals with rheumatic diseases and their clinicians consider how Integrative Medicine can benefit patients and providers and be included in their disease management.

Integrative Rheumatology describes a rational and evidence-based approach that integrates the principles and practice of complementary therapies into the principles and practice of conventional medical therapy to improve quality of life while living with rheumatic condition. Within the last decades, Mind-Body Medicine (MBM) approaches have made increasing contribution to the treatment of chronic rheumatic and inflammatory diseases. In contrast, evidence on the effectiveness of MBM interventions is still limited. Beneficial effects were described for pain patients, fibromyalgia, osteoarthritis and rheumatoid arthritis (RA) when added to clinical practice and conventional medical treatment (Lauche et al., 2013; Lauche et al., 2015). For comorbid psychosocial disorders such as depression the main focus of Mind-Body interventions (MBIs) is on improving pain acceptance and adaptive coping behavior (Lauche et al., 2015). Techniques like Mindfulness-Based Stress Reduction (MBSR), Yoga, Tai Chi, Qigong and meditation have been shown to significantly reduce perceived pain intensity (Paul, 2023) and increase self-efficacy and self-care with very few side effects (Paul, 2023). Expanded MBIs following the BERN-model (behavior-exercise-relaxation-nutrition) are still under evaluation for rheumatic diseases. They integrate self-care, health promotion, resilience and applied neuroscience into one framework and aim to strengthen health and resilience, self-healing processes and reduce stress (Esch & Stefano, 2022).

The 2017 European League against Rheumatism (EULAR) recommendations for the management of fibromyalgia are underpinned by high-quality reviews and meta-analyses (Macfarlane et al., 2017). These show that cognitive behavioral therapies are effective in reducing pain at the end of treatment (standardized mean difference (SMD) with 95% confidence interval (CI): −0.29; −0.49 to −0.17)

and disability at the end of treatment (SMD: −0.30; CI: −0.51 to −0.08) (Bernardy et al., 2013). Aerobic exercise is associated with improvements in pain (SMD: 0.65; CI: −0.09 to 1.39) and physical function (SMD: 0.66; CI: 0.41 to 0.92) (Busch et al., 2007). In addition, resistance training results in a significant improvement in pain (SMD: −3.3; CI: −6.35 to −0.26) as well as function compared with control (Busch et al., 2013). One meta-analysis of six trials with 674 patients provided evidence that MBSR can improve pain immediately post treatment compared with usual care (SMD: −0.23; CI −0.46 to −0.01) and compared with active control interventions (SMD: −0.44; CI: −0.73 to −0.16) (Lauche et al., 2013). Multicomponent therapy was effective in reducing pain (SMD: −0.37; −0.62 to −0.13) and fatigue (weighted mean difference with 95% confidence interval: -0.85; CI: –1.5 to –0.2), immediately post treatment, with short-lived effects (Häuser et al., 2009). For meditative movement, positive effects on sleep (reduced sleep disturbances) (SMD: −0.61; CI: −0.95 to −0.27) and fatigue (SMD: −0.66; CI: −0.99 to −0.34) were observed at the end of therapy, some of which were maintained in the longer term (Langhorst et al., 2013).

The German guideline for the interdisciplinary management of early arthritis (*S3-Interdisziplinäre Leitlinie zum Management der frühen rheumatoiden Arthritis*) recommends cognitive behavioral and psychological interventions to support positive effects on psychological stability, self-efficacy, physical activity, active coping-strategies and stress reduction, impairment due to pain, disability in everyday life, disease activity and reduced health care costs - based on multiple studies, including randomized-controlled trials (RCTs) and meta-analyses (Schneider et al., 2019). The guideline reflects the low level of evidence for MBIs. Two RCTs on meditation and progressive muscle relaxation were cited with no convincing results but without reported side effects (Macfarlane et al., 2017). Positive evidence for exercises such as Tai Chi (to reduce fatigue) and Yoga (to improve quality of life, physical and psychological aspects) was found. Due to a larger evidence base, patient education and self-management were recommended (Schneider et al., 2019).

In 2021, the German Society of Rheumatology (DGRh) launched a committee for complementary and alternative medicine (CAM) and nutrition. Based on the collection and evaluation of current evidence for CAM applications and nutritional interventions in rheumatology, recommendations were elaborated for clinical practice. Recently the committee published recommendations for the rheumatological routine in four areas: nutrition, mediterranean diet, Ayurvedic medicine and homeopathy (Keyßer et al., 2023). In rheumatoid arthritis, moderate evidence is assumed for some MBM procedures, mediterranean diet and omega 3 fatty acids (Keyßer et al., 2023). Physical procedures like Tai Chi were evaluated positively for spondyloarthritis (Danve & Deodhar, 2018).

The 2022 American College of Rheumatology (ACR) Guideline for Exercise, Rehabilitation, Diet, and Additional Integrative Interventions focuses specifically on the management of rheumatoid arthritis. They conditionally recommend the use of cognitive behavioral therapy and/or MBM approaches based on very low to low certainty evidence indicating no consistent improvement in pain and physical function but low to moderate certainty evidence of improvement in depression, anxiety, fatigue, and sleep when individuals with rheumatoid arthritis use these approaches (England et al., 2023). The interventions also showed benefits for chronic disease management (England et al., 2023). However, barriers such as access to experienced healthcare professionals and costs may reduce the uptake of these interventions (England et al., 2023).

All in all, the long-term effectiveness of MBM in rheumatic diseases is still to be analyzed. More controlled clinical trials and basic research are needed to evaluate the impact and mechanisms of MBIs in rheumatic diseases.

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A Cogniceptive Model of Trauma Fixation

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Stress may be defined as a stimulus above or below the expected threshold in a given momentum and environment (Saintigny et al., 2016; Schulz & Vogele, 2015). Stress is a universal part of life and the foundation for change and, thus, evolutionary adaptation (Hoffmann & Hercus, 2000). On a molecular level, environmental stress was reported to induce oxidative stress, which is a cellular condition characterized by an imbalance between the production of reactive oxygen species (ROS) and the ability of cells to detoxify them (Pizzino et al., 2017). Oxidative stress is implicated in various physiological and pathological processes, including aging, neurodegenerative diseases, and psychiatric disorders (Chen et al., 2012; Wu et al., 2013). In animals and humans, cellular stress may be induced through muscle tone or tension (i.e., proprioception), visual and other body-external sensory experiences (i.e., exteroception), or sensations of the internal milieu (i.e., interoception), such as increased heart rate, inflammation of the bowel, and other body-internal sensations (Buttiker et al., 2021; Schulz & Vogele, 2015). Importantly, whether a stimulus will be experienced as stressful depends on the expectation (i.e., prior probability) of a stimulus to occur in the given moment and environment (Harris et al., 2023). In a predictive processing model, a mismatch between the expected (i.e., predicted) stimulus and the actual sensory input leads to errors (i.e., prediction errors [PE]), which play an important role in updating the body's sensory expectation (i.e., internal concepts) according to the incoming information (Barrett, 2017; Clark, 2013; Seth, 2013). This is a form of learning, which the brain implements to adapt to newly encountered situations (Buttiker et al., 2021; Raymond et al., 2017).

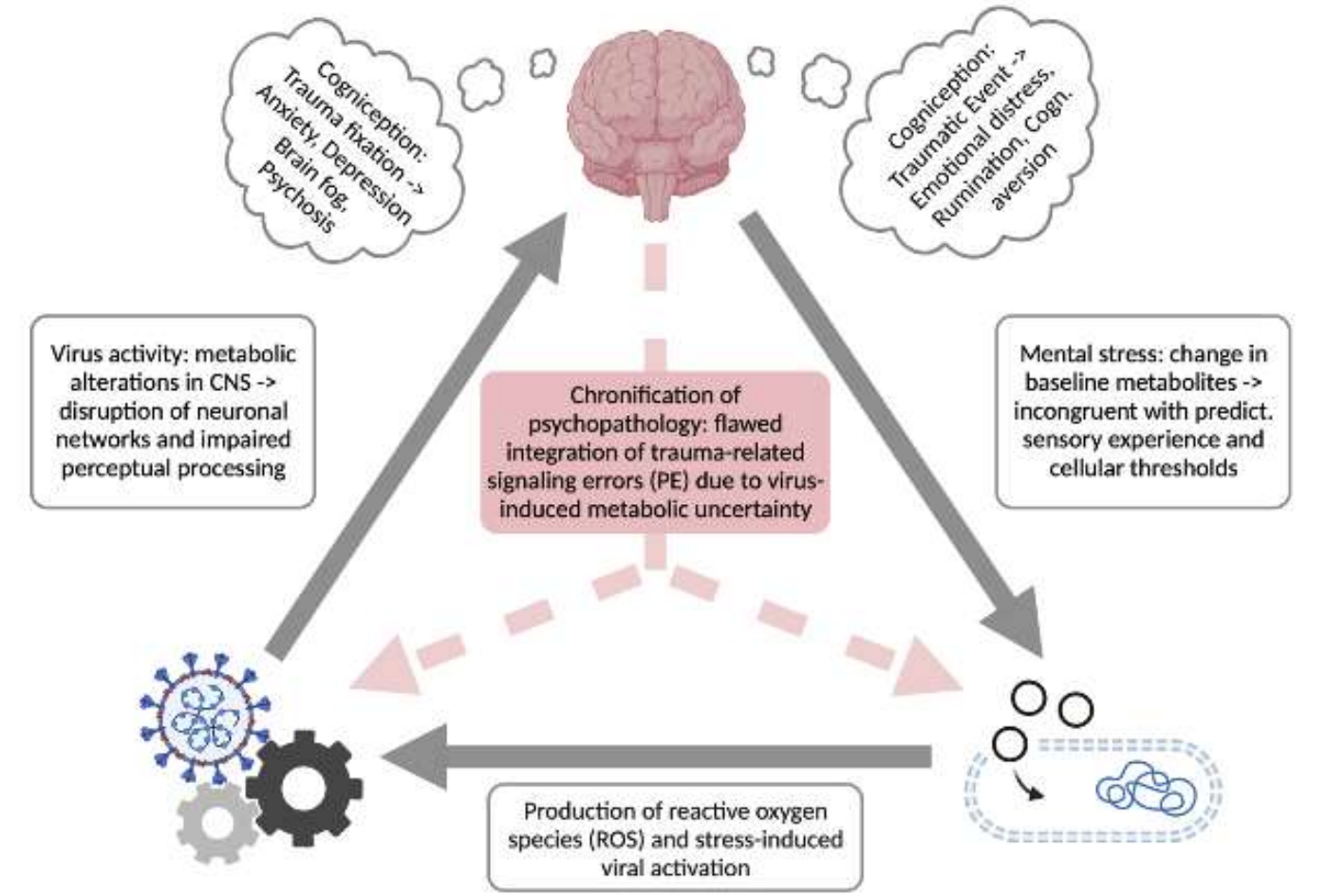
How these sensations are being perceived and processed on a cognitive level, however, depends on the previously learned, internal concepts and one's awareness of associated stimuli (Barrett, 2017). The ability to reflect on cognitive states of emotions and thoughts in a given momentum and environment is called *cogniception*. Cogniception is involved in the generation of sensory predictions and subsequent integration of PEs into internal concepts, allowing psychological adaptation to a constantly changing environment. Stimuli that greatly exceed the expected thresholds may be perceived as traumatic, leading to acute stress and the generation and integration of aversive PEs into initially healthy internal concepts (Linson et al., 2020). Examples for this could be sports accidents, interpersonal conflicts, such as breakups, becoming the victim of a crime, etc., which may lead to temporary uncertainty due to the overflow of unexpected, aversion-connected information (i.e., PEs) and feelings of anxiety (Grupe & Nitschke, 2011, 2013). Unsuccessful integration of these PEs over time may then lead to chronic distress and, in a cognitive model, to the integration of traumatic sensory information into other initially healthy concepts increasingly leading to the unconscious fixation of trauma and, for example, trait anxiety (Buttiker et al., 2021; Linson et al., 2020; Raymond et al., 2017). Notably, psychosocial stress, which may involve rumination over distressing thoughts, has been reported to increase the production of ROS (Kim et al., 2021). Hence, if chronic stress, which comprises repeated PEs in the context of cognitive processing, is not effectively managed,

it could potentially contribute to oxidative stress. Chronic activation of the stress response system with an increase in intra- and extra-cellular ROS can lead to oxidative damage to cells causing important changes in the DNA, protein expression and molecular signaling (Chen et al., 2012; Pizzino et al., 2017).

Furthermore, a disbalance in the mechanisms underlying oxidative stress can lead to a stress-induced activation of persistent infections of neurotropic viruses (Buttiker, Stefano, et al., 2022). Their reactivation causes metabolic changes, for example, in infected glial cells, neurons and mitochondria additionally compromising the neuronal energy landscape and functional integrity of brain networks (Buttiker, Weissenberger, et al., 2022; Stefano et al., 2021; Stefano et al., 2020). In a predictive coding model, such virus-induced metabolic alterations in the central nervous system (CNS)

may reinforce the existing sensory uncertainty of traumatic stimuli, furthermore compromising the healthy processing and integration of associated PEs. Hence, it is suggested that traumatic events and chronic distress (e.g., rumination over such) can reactivate neurotropic viruses, which may reinforce the present uncertainty in the minimization of PEs via immune-modulatory effects leading to altered cogniceptive states

and a flawed perception of the world and self in an acute (e.g., psychosis, anxiety) and chronic (e.g., brain fog, depression, trait anxiety) manner. The potential involvement of cogniception in traumatic experiences, stress-induced activation of neurotropic viruses and subsequent chronification of cognitive disruption and trauma fixation is presented in Figure 1 in the form of a positive feedback-loop. Importantly, an understanding of these mechanisms can lead to better therapeutic strategies.



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Mind-Body Exercise Corner

Mindful Eating Exercise

Mind-body medicine is an approach to health and healing that recognizes the interconnectedness of the mind and body. Exercises such as Mindful Eating Exercise promote relaxation, reduce stress and enhance self-awareness.

Duration: 5 minutes
Instructions

1. **Prepare:** Choose a food item that fits your hand (e.g. fruit, nut, gummy bear). Sit comfortably, place both feet on the floor, and close your eyes or focus on a point. Take deep breaths to relax. Then open your eyes.
2. **See:** Examine the food visually, noting details such as surface texture, colour, shadows, and overall appearance**.**
3. **Feel with your hand:** Hold the food between your index finger and thumb or place it in your palm, exploring its texture, temperature, weight, and other tactile sensations.
4. **Feel with your lips:** Gently bring the food to your mouth, stroke it against your lips, and notice any differences in surface and temperature compared to your fingers.
5. **Smell:** Place the food under your nose and observe its scent. Note the intensity and qualities of the smell, such as fruity, sweet, aromatic, biting, bitter, or tart.
6. **Taste:** Place the food in your mouth without chewing, focusing on how it sits on your tongue. Then pay attention to the taste and any changes as you start chewing.
7. **Swallow & find out:** Trace the food into your throat/body and notice when you no longer sense it. Feel into your body and reflect on any surprises or new sensations.

Mindful Eating in Company: Practice mindful eating in social settings, subtly examining your plate or utensils. Mindful drinking is also possible, savouring the temperature and scent of beverages before consuming**.**

Variations: With a little bit of practice, mindful eating can be incorporated into various settings, such as restaurants with friends or in the office with drinks. Note that some foods may have multiple properties, which adds to the richness of the exercise.

Announcement

Job position at the MBMRC (25%, in German/English, hybrid)

As a research assistant, you will support the work of the Institute for Integrative Health Care and Health Promotion (IGVF) under the direction of Prof. Dr. med. Tobias Esch with the organisation and implementation of a scientific conference on Mind-Body Medicine (MBM) at the University of Witten/Herdecke (UW/H) from 01.02.2024.

The aim of the conference in autumn 2024 is to establish an international platform for scientists in the field of MBM and to promote long-term research cooperation. Particular attention will be paid to basic research in MBM.

The position is initially limited to 10 months and is planned with a working time of 10 hours per week. A longer-term collaboration is envisaged.

Please find more information (in German) here.

The Mind-Body Medicine Research Council (MBMRC)

At the present time, the Council consists of the following members:
Tobias Esch, M.D. (Co-Chair)
George B. Stefano, Ph.D. (Co-Chair)
Radek Ptáček, Ph.D., MBA
Maren M. Michaelsen, Dr. rer. oec. Dr. rer. medic. (Project Lead)

How to become a member of MBMRC
As the MBMRC has been founded in 2022, and due to its dedication to rigorous contributions on the basic research foundations of Mind-Body Medicine, the number of members is yet small. In the future, the council aims to invite outstanding researchers in the field to become MBMRC members. Membership implies no fee.

DONATE TO THE MBMRC

Do you wish to support us organizing the upcoming conference on Mind-Body Medicine Basic Research, or our general activities? Then you are welcome donate via **PayPal** to igvf@uni-wh.de. We are happy to send you donation receipt - just ask for it by email.

Thank you

- The MBMRC Team

Mind-Body Medicine Research Council (MBMRC)

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