



# IMY 2024

INTEGRATIVE MED YOGA CONFERENCE



PÉCSI TUDOMÁNYEGYETEM  
UNIVERSITY OF PÉCS



**Integrative–Med Yoga Conference Programme**

**GSY Team**

**Sports and Physical Education Centre, Medical School  
UP FHS Doctoral School of Health Sciences, University of Pécs**

Hungarian Academy of Sciences  
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## Preamble Speech

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The Integrative Med Yoga Conference for University Students and Experts of Clinical Sciences and Integrative Health Approach (IMY2024) held in Pécs on 12th May 2024 is the result of a trustful collaboration of the GSY Team, Physical education center, Medical School, and Doctoral school of health Science, Faculty of Health Science, University of Pécs. It is an event designed to empower the next generation of medical and health sciences researchers and cultivate their passion for scientific exploration specifically in Integrative medicine and yoga research.

To enhance the learning experience of attendees, we have guest speakers who will represent different areas of specialization in Non-Pharmacological Therapies. Their expertise will provide invaluable insight into the topic. This conference serves as a platform for young scholars, therapists, and yoga teachers to showcase their innovative research, exchange ideas, and forge connections with fellow peers and renowned experts in the field. This conference aims to nurture the intellectual curiosity and scientific acumen of PhD students in medical science. By providing a supportive environment, we encourage these budding researchers to push the boundaries of knowledge, challenge prevailing notions, and contribute to advancements that shape the future of healthcare.

Throughout the conference, participants had the opportunity to present their research findings through oral presentations. I believe our speakers provide insight information of non-pharmacological interventions not only in the research area but also in the detail of different therapy can be used in health promotion approaches in population with various sociodemographic areas.

In addition to the scientific program, I sincerely believe that the networking sessions at our conference were able to facilitate meaningful connections among peers and mentors, fostering collaboration and future research opportunities. I extend a warm welcome to all the talented students and guest speakers who joined us for this exceptional gathering, and I hope they will join us next year also.

Dr István Karsai and Dr Viktória Premusz

## Committee

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### Scientific Committee

- **Prof Dr József Bethlehem** (Professor, Vice-Rector for General Affairs, Connections and Strategic Affairs, University of Pécs President of the Working Committee of Health Sciences, Regional Committee of Pécs, Academy of Sciences)
- **Ms Shalini Chauhan** (Founder of GSY, Assistant Professor, and PhD candidate)
- **Dr István Karsai** (Director, Sports and Physical Education Centre, Medical School, University of Pécs)
- **Dr Viktória Prémusz** (Senior Lecturer, Department of Physiotherapy and Sport Sciences, Faculty of Health Sciences, University of Pécs; Post-doctoral Research Fellow, National Laboratory on Human Reproduction; Secretary of the Working Committee of Health Sciences, Regional Committee of Pécs, Academy of Sciences)

### Organising Committee

- **Ms Shalini Chauhan** (Founder of GSY, Assistant Professor, and PhD candidate)
- **Leman Atmaca** (PhD student, Doctoral School of Health Science, Faculty of Health Science)
- **Ann Mary Babu** (Clinical Research Assistant, Indian Dance Teacher, and Bachelor student in Sports Science, University of Pécs)
- **Sachal Sadiq Najaf** (Clinical Research Assistant, and Bachelor student in Psychology, University of Pécs)
- **Furqan Ali** (Master student, Department of Chemistry, University of Milan)

## Guest Speaker

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1. I am deeply honored to have been a guest at the Integrative Medicine and Yoga Conference hosted by the University of Pécs in collaboration with the GSY team. It is inspiring to witness the collaboration between academia and integrative medicine practitioners in creating a platform where scientific research meets traditional wisdom. The conference has not only fostered intellectual exchange but also deepened cultural ties between our nations. I am confident that the knowledge shared, and the connections made here will continue to advance the integration of yoga and holistic health into modern healthcare systems globally. I would like to express my sincere appreciation to the University of Pécs for their outstanding commitment to promoting holistic health practices and to the dedicated GSY team for their tireless efforts in organizing such a remarkable conference. Once again, congratulations to all involved for making this event a resounding success.

**Dr. Mukesh Kumar Srivastava**

*Director, Amrita Sher-Gil Cultural Centre (ASCC),  
Budapest, Hungary*

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2. Namaste! It has been a true honor to contribute to the Integrative Medicine and Yoga Conference hosted by the esteemed University of Pécs and the dedicated GSY team. This event has beautifully showcased how ancient yogic traditions can harmonize with modern science to elevate both individual and collective well-being. I am deeply impressed by the University of Pécs' forward-thinking approach to merging traditional knowledge with cutting-edge research, and I applaud the GSY team for their impeccable organization and vision. Together, they have created a platform that not only educates but also inspires a deeper connection to the practice of yoga as a tool for holistic healing. Wishing everyone peace, health, and inner strength.

**Yogacharya Raman Kumar**

*Director, Himalayan Yogis Treasure  
Asian Yoga Federation and Yoga Federation of India*

## Acknowledgment

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- Goodbye Stress with Yoga (GSY Research Group), University of Pécs
- Hungarian Academy of Health Sciences

# Women's Health

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# EFFECT OF YOGA THERAPY ON THE ANDROGEN LEVEL IN PCOS WOMEN: SYSTEMATIC REVIEW

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**Background:** Polycystic ovarian syndrome is one of the very common endocrine disorders among women of reproductive age. The exact cause of this disorder is still unknown. PCOS is characterized by menstrual irregularities, elevated insulin resistance, and higher levels of serum androgen. It has been proven that yoga is one of the best relaxing techniques, which can also improve the quality of life of the individual as well as neuroendocrine factors.

**Purpose:** To examine the evidence for the effect of yoga interventions on androgen levels in women with PCOS.

**Methods:** RCTs were included in a current review conducted on women with diagnosed PCOS by Rotterdam criteria and who participated in yoga practice. These studies reported hormonal outcomes and metabolic parameters. Six electronic databases PubMed, Cochrane Trial, Embase, Web of Science, Clinical Trials, and Scopus were used to run detailed searches. The primary outcome of the review is reproductive and metabolic measures. Quality assessment was conducted for the included studies by the Rob 2 tool.

**Results:** In total 275 citations were identified after a search in 6 databases. After removing duplicates using reference manager End Note resulting in 183 remaining citations. Rayyan was used to conduct title abstract screening by two reviewers resulting in 31 relevant studies. 25 studies were excluded while conducting the full-text screening, resulting in the inclusion of five studies for qualitative assessment in the present analysis. Studies with yoga intervention are limited but these included studies show that yoga intervention improves androgen levels, insulin measure, and metabolic health of women with PCOS.

**Conclusion:** The current review suggests that yoga has a significant effect on the hormonal level of PCOS women. The limited available studies highlight the need for further research and a broader evidence base to substantiate these preliminary findings.

**Keywords:** Yoga, androgen level, female, polycystic ovarian syndrome, women health



# SCIENTIFIC TOOLS FOR EVALUATING YOGA EVIDENCE THROUGH SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background:** Given the growing interest in yoga for health and well-being, reliable evidence assessment methods such as systematic review and meta-analysis are crucial by discussing the principles of systematic reviews, a rigorous approach to synthesising research evidence, minimising bias, and offering a comprehensive summary of available studies on yoga's health impacts.

**Methods:** Meta-analysis could be introduced as a quantitative technique that aggregates data from multiple studies to provide a more precise estimate of yoga's effects. Emphasis is placed on the use of statistical models to assess outcome variability and effect sizes across diverse studies, enhancing the validity of conclusions. Key methodological aspects are study selection criteria, data extraction processes, and statistical analysis methods, all essential for robust evidence synthesis. Additionally, it highlights potential biases and limitations in yoga research, including publication bias, study heterogeneity, and the subjective nature of outcome measures. Various tools and databases, such as PRISMA guidelines and Cochrane's GRADE approach, are recommended to maintain transparency and reliability in systematic reviews and meta-analyses.

**Results:** Systematic reviews and meta-analyses on yoga intervention found significant evidence supporting its positive impact on various health conditions. For example, studies on prehypertension demonstrated yoga's effectiveness in lowering both systolic and diastolic blood pressure. A meta-analysis conducted by Khandekar et al. (2021) revealed a decrease in systolic blood pressure (SMD -0.62, CI: -0.83, -0.41) and diastolic blood pressure (SMD -0.81, CI: -1.39, -0.22) among prehypertensive individuals, thus highlighting yoga's role in cardiovascular health improvement. Yoga was also beneficial in addressing mental health concerns such as anxiety and depression. In chronic patient groups, hatha yoga showed promising results in reducing depression symptoms compared to psychoeducational control groups (Cohen *d* -0.52, 95% CI: -0.96, -0.08), though it had no significant impact when compared to active control groups for long-term depression or anxiety management (Ramamoorthi et al. 2022). Additionally, a complex yoga-based intervention in a Hungarian community reduced perceived stress and improved aspects of interoceptive awareness, attention control, and self-regulation after three months, underscoring yoga's holistic benefits for psychological well-being (Koncz et al. 2023). In phy-

## Abstract • Women's Health

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sical health, evidence showed that yoga could effectively alleviate chronic pain symptoms. For instance, Anheyer et al. (2022) analysed 27 studies and found that yoga significantly reduced pain intensity in individuals with chronic low back pain and improved related physical function and quality of life in both short and long-term perspectives.

**Conclusion:** These findings underline yoga's multifaceted contributions to health and support its integration as a complementary therapy in managing both physical and psychological health issues by underscoring the role of scientific tools in advancing the evidence base for yoga practices, aiding healthcare professionals and researchers in making informed decisions about yoga's role in health promotion and therapy. Through systematic and quantitative evaluations, yoga can be better integrated into evidence-based practice, ensuring that recommendations align with high-quality research findings.

**Keywords:** yoga, systematic review, meta-analysis, evidence, health

## Abstract • Women's Health

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### THE BRIGHT, THE BLIGHTED AND THE BOLD: META-ANALYSIS

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**Abstract:** Each year, more than 30,000 meta-analyses are published. However, only a small fraction of these influences clinical and public health decision-making. Many published meta-analyses merely replicate previous studies without contributing new insights, and others suffer from methodological issues. These issues often stem from insufficient training in epidemiology, incomplete search strategies, or errors in data extraction.

**Message:** Yoga is gaining popularity, and its practice offers potential health benefits. The conference provided an excellent platform for bringing together yoga practitioners and scientists to discuss the latest evidence on yoga's health benefits and to formulate future recommendations for advancing this knowledge. I am pleased to have participated in this event and look forward to seeing the University of Pécs further explore this topic and expand our understanding of the role of Yoga in our health.

**Keywords:** epidemiology, yoga, systematic review, meta-analysis, decision making

# SCOPING REVIEW OF YOGA PRACTICE DURING POST-PARTUM DEPRESSION PERIOD

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**Background:** During pregnancy, women undergo different physiological, psychological, social, and emotional challenges. It is indicated that stress and anxiety occur frequently during pregnancy and the postpartum period, which contributes significantly to prematurity, low birth weight, and unplanned caesareans. However, there remains a gap in understanding the role of Yoga practice in managing women during the postpartum period. This review aims to look at existing literature on the role of Yoga during postpartum.

**Methods:** This is a scoping review, a total of 38 studies were identified through systematic search using electronic search in databases including, PubMed, Google Scholar, Science Direct, ResearchGate, etc. We used keywords to search for Yoga, Postnatal, Pregnancy, Health, pregnant women, and Postpartum depression. There were many articles on the effect of yoga on depression during pregnancy and post-pregnancy, but after screening and more assessment, a total of 8 studies were eligible for review and were included.

**Result:** This study shows an overview of the importance of Yoga practice in the reduction of depression. Various yoga practices have shown effectiveness in reducing depression during prenatal and postnatal care. Different yoga practices like Asanas, Pranayama, Dhyana, and meditation show a positive outcome and could be considered to reduce depression symptoms in postnatal women. This review study includes 8 interventional studies that showed a highly significant ( $p < 0.001$ ) decrease in depression after the performance of yoga in postpartum women. In the majority of studies, Yoga intervention reduced postpartum depression and other mental disorders

**Conclusion:** This study showed the result that different types of Yoga practice can reduce depression. Therefore, it is recommended that yoga training should be implemented during postnatal care.

**Keywords:** Yoga, Postnatal, Pregnancy, Health, Pregnant

# EXPLORING THE IMPACT OF EXERCISE ON HEALTH IN POLYCYSTIC OVARY SYNDROME (PCOS): A SCOPING REVIEW

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**Background:** Polycystic Ovary Syndrome (PCOS) is a prevalent hormonal condition impacting women of reproductive age, marked by irregular menstruation, excessive male hormone levels (hyperandrogenism), and the presence of multiple fluid-filled sacs in the ovaries (polycystic ovaries). It is linked with metabolic irregularities such as insulin resistance and heightened susceptibility to heart-related issues. Exercise is increasingly recognized as a possible treatment avenue for PCOS, offering benefits such as weight management, enhanced insulin sensitivity, and adjustment of cardiovascular risk factors.

**Purpose:** This systematic review seeks to explore how exercise impacts reproductive, cardiometabolic, and sexual well-being in women with PCOS, while also examining how exercise intensity and duration affect its effectiveness.

**Methods:** Randomized and controlled clinical trials will be meticulously searched across numerous databases and grey literature sources. Participants diagnosed with PCOS, spanning all age groups, will be encompassed. Various exercise interventions will be considered, such as high-intensity interval training, strength training, and aerobic exercise. Key outcomes of interest include reproductive health indicators (like menstrual regularity, ovulation status, and fertility), cardiometabolic parameters (such as insulin sensitivity, lipid profile, and blood pressure), and sexual function. Additional outcomes will involve anthropometric measurements, hormonal profiles, inflammatory markers, quality-of-life assessments, and psychological well-being evaluations. Data extraction and bias assessment will be conducted utilizing established methodologies.

**Results:** This systematic review aims to offer a thorough amalgamation of the impacts of exercise on PCOS across diverse health domains. It will include a summary of incorporated studies along with primary and secondary outcomes. Meta-analysis will be undertaken wherever feasible, accompanied by subgroup analyses considering factors such as BMI, age, and treatment approaches.

**Conclusions:** This review seeks to shed light on the potential advantages of exercise interventions in addressing symptoms associated with PCOS and enhancing overall health results. The discoveries are intended to guide clinical practices and aid in formulating customized exercise regimens for women diagnosed with PCOS.

**Keywords:** Exercise, hormonal level, female, polycystic ovarian syndrome, women health

# IRON STATUS OF WOMEN OF CHILDBEARING AGE IS ASSOCIATED WITH TEA, IRON- AND ASCORBATE-RICH FOODS CONSUMPTION PATTERNS IN NANDI COUNTY, KENYA: A CROSS-SECTIONAL STUDY

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**Introduction:** Information on consumption patterns tea, iron- and ascorbate-rich foods and their influence on iron status among women of childbearing age (WCA) is scarce in Kenya despite iron deficiency being rampant. The study investigated the consumption pattern tea, iron- and ascorbate-rich foods among women of childbearing age (WCA) in Nandi County, Kenya.

**Methods:** A cross-sectional analytical study was conducted among 160 WCA selected using a systematic random sampling technique from Kapsabet Ward. Information on tea, iron- and ascorbate-rich food consumption was gathered using a researcher-administered questionnaire. Two milliliters of blood were collected and serum ferritin and C – C-reactive protein were determined. Multivariable regression was carried out to find out the associations. Confounding variables such as consumption of foods high phytate levels, milk and milk products, recent major blood losses, and parasitic infections were controlled for during analysis.

**Results:** The prevalence of iron deficiency among the WCA was 45.0 %. The majority (90.6%) of the respondents consumed tea or coffee, with an infusion time of more than 5 minutes (60.0%) and a moderate tea strength (64.1%), within 1 hr before or after meals. Iron-rich foods were rarely (<2 times/week) consumed by the respondents. Iron- (iron-fortified porridge, meat, sardines, beans, amaranth, and spider plants) and ascorbate- (oranges and mangoes) rich foods positively predicted (AOR = 4.851, P = 0.021) the normal iron status of WCA. WCA should consume above 2 intakes per week of each iron- and ascorbate-rich food for better iron status outcomes.

**Conclusion:** For better iron status outcomes, WCA should consume above 2 intakes per week of each iron- and ascorbate-rich food and limit their intake of tea.

**Keywords:** Tea consumption patterns, iron-rich foods, iron deficiency, women of childbearing age

# Therapeutic Yoga

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# SCOPING REVIEW OF YOGA PROGRAM IMPACT ON WELL-BEING IN PEOPLE WITH INTELLECTUAL DISABILITIES

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**Background:** Yoga programs have gained recognition for their potential to enhance well-being across various populations. However, there remains a gap in understanding their impact on individuals with intellectual disabilities. This rapid review aims to synthesize existing literature on the effects of yoga programs specifically tailored for individuals with intellectual disabilities.

**Methods:** A total of 124 studies were initially identified through a systematic search across electronic databases, including PubMed, Scopus, and Web of Science. The search terms included variations of “yoga,” “intellectual disabilities,” “well-being,” and related keywords. After rigorous screening and assessment, 9 studies were deemed eligible for inclusion in the rapid review.

**Result:** This study presents a comprehensive overview of the impact of yoga interventions on the well-being of individuals with intellectual and developmental disabilities (IDD). The effectiveness of various yoga programs in enhancing physical, psychosocial, and cognitive aspects of well-being among individuals with IDD is examined. The interventions included in the review ranged from structured yoga classes to online adaptive yoga programs, targeting diverse age groups and disability levels. The findings reveal consistent positive outcomes across multiple domains, including improvements in physical fitness (such as strength, balance, and agility), psycho-motor abilities (such as reaction time and coordination), psychological well-being (including mindfulness, self-determination, and anxiety reduction), and social connectedness. Notably, yoga interventions were associated with increased exercise behaviour, perceived exertion levels, and motivation for physical activity among young adults with IDD. The results suggest that yoga holds promise as a holistic intervention for promoting the well-being and functional fitness of individuals with IDD. However, limitations such as small sample sizes, lack of control groups, and variability in intervention designs warrant cautious interpretation of the findings.

**Conclusion:** Future research should address these limitations and explore the long-term effects and optimal delivery methods of yoga interventions for individuals with IDD. Overall, this review highlights the potential of yoga as a therapeutic tool to enhance the quality of life and overall well-being of individuals with intellectual and developmental disabilities.

**Keywords:** Yoga, Intellectual disabilities, Well-being, Intervention



# EFFECTS OF YOGA ON SYMPTOMS OF AUTISM SPECTRUM DISORDERS

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**Introduction:** In the case of people with autism spectrum disorders, it may be difficult to understand the factors that to a favourable health outcome. Improper nutrition or a sedentary lifestyle can all increase the risk of comorbidities. As a result of symptomatic and neuropsychological characteristics, the learning of various forms of movement can even be difficult, depending on the degree of involvement. However, the uncertain effect of non-evidence-based therapies can take considerable time away from the necessary skill development in the long term.

**Methods:** A literature review was performed with the PubMed database using publications from 2014 and 2024. Searching for the keyword's "autism", "autism spectrum disorders", "autism spectrum" and "yoga", 38 specialist literature was identified. It was an exclusion criterion if an autistic person was included in the research, but groups with other diagnoses or special needs were also included in the same sample. A total of 14 articles were analyzed.

**Results:** Improvements were seen in task performance, self-regulation, disruptive behaviour reduction, and symptom severity. Large motor performance, flexibility, and dynamic balance improved, and fewer errors were observed during imitation. Lower scores were also recorded in problem behaviours, as well as in irritability and social withdrawal. There were also improvements in the development of joint attention behaviours, cooperation, mood, and emotional expression.ü

**Conclusion:** To encourage physical activity, it is worth thinking in a broader context and building on the role of the family. It is not excluded that yoga can also be important in stimulating social interactions and expressing emotions. Although promising results are emerging on the effects of yoga, the small number of studies and the lack of follow-up suggest that further research is warranted.

**Keywords:** Autism spectrum disorders, yoga, skill development, difficulties, health

# Quality of Life and Well-being

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### EFFECT OF YOGA ON SEDENTARY BEHAVIOUR AND PHYSIOLOGICAL HEALTH, DETERMINANT IN UNIVERSITY STUDENTS; GSY

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**Introduction:** A study aims to understand the impact of yoga on sedentary lifestyles, particularly among college students, by combining quantitative physiological analysis and qualitative insights from various academic backgrounds. Yoga, a traditional Indian practice that combines breathing, movement, and meditation, has been shown to improve mental, physical, and general well-being. The research aims to develop interventions for varying levels of yoga experience, focusing on emotional well-being, sleep quality, stress reduction, and blood glucose level management.

**Purpose:** The primary aim of my study is to analyze the effect of yoga on sedentary behaviour and the physiological health of university students.

**Methods:** In a 10-week Yoga intervention held at the University of Pecs, 93 medical students participated in the current yoga intervention with an average age of  $21.18 \pm 2.18$  years and a BMI of  $22.96 \pm 4.21 \text{ kg/m}^2$ . To analyze the effect of yoga intervention, I used 3 questionnaires as follows- A sociodemographic questionnaire, a questionnaire on Global Physical Activity (GPAQ), and The Rosenberg Sedentary Behaviour Questionnaire (SBQ). The research population's demographic information was compiled using descriptive statistics. This data allocation was examined using the Kolmogorov-Smirnov. The mean mobility scores before and after the yoga intervention will be compared using a paired t-test or the Wilcoxon Signed Ranks Test. A significance threshold of  $p < 0.05$  will be used. Data was expressed as mean  $\pm$  SD.

**Result:** In this 10-week Yoga interventional study, 83 (89.2%) are females and 10 (10.8%) are males. The study found that participants' mean weight before the yoga intervention was  $64.40 \pm 13.94$  kilograms, and after the intervention, it was  $63.16 \pm 13.31$  kilograms, with a significant reduction of  $-1.24 \pm -0.63$  kilograms, indicating a significant weight change. Also, we found a significant reduction in BMI of  $-0.44 \pm -0.17 \text{ kg/m}^2$  among the participants by comparing the pre- ( $22.96 \pm 4.21 \text{ kg/m}^2$ ) and post ( $22.52 \pm 4.04 \text{ kg/m}^2$ ) intervention. The mean and SD of sedentary behavior before and after yoga are  $53.42 \pm 26.04$  to  $54.80 \pm 27.03$  hours respectively. As all the  $p > 0.05$  there were no statistically significant differences found in the analysis

**Conclusion:** This research aimed to determine how yoga affected university students' sedentary behaviour and physical well-being. There were no statistically significant changes in sedentary behavior detected after the intervention, despite considerable decreases in weight and BMI. It is advised that for a more thorough understanding, a bigger and more varied group of data be used to support not just yoga but also other lifestyle aspects like diet.

**Keywords:** Yoga, Students, Sedentary behavior, well-being

### IMPACT OF A 10-WEEK OF YOGA INTERVENTION ON SLEEP QUALITY AMONG UNIVERSITY STUDENTS: THE GSY STUDY

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**Introduction:** Sleep disturbance or sleep disruption is the most common concern in university students that can significantly affect both physical and mental health. It has been found that regular yoga exercises resulted in significant reductions in time to fall asleep, decreased sleep disturbance during nighttime, and improved sleep quality. Yoga interventions contribute to both physical and psychological health improving muscle strength, memory, and overall sleep.

**Aim:** The main aim of the current study is to analyse the effect of a 10-week yoga intervention on sleep quality and patterns among university students.

**Methods:** Ninety-three university students participated in a 10-week Yoga intervention conducted at the University of Pecs with a mean age of  $21.18 \pm 2.18$  years and the BMI of  $22.96 \pm 4.21 \text{ kg/m}^2$ . To evaluate the effects of the yoga intervention, Pittsburgh Sleep Quality Index (PSQI) and Depression Anxiety Stress Scales (DASS) were utilized. The demographic details of the research participants were summarized using descriptive statistics. The Kolmogorov-Smirnova and Shapiro-Wilk tests were conducted to assess the normality of the data distribution. Pre- and post-intervention scores were compared using the Wilcoxon Signed Ranks Test due to non-normal data distribution. We will use a significance level of  $p < 0.05$ .

**Results:** The Wilcoxon Signed Ranks Test was employed to compare pre- and post-intervention scores. The test statistics indicated highly significant reductions in Global PSQI Score ( $Z = -6.072$ ,  $p < 0.001$ ), Stress ( $Z = -6.038$ ,  $p < 0.001$ ), Anxiety ( $Z = -5.801$ ,  $p < 0.001$ ), and Depression ( $Z = -5.011$ ,  $p < 0.001$ ) from pre- to post-intervention. These results suggest a notable improvement in psychological factors following the intervention.

**Conclusion:** These findings suggest that participation in Yoga sessions may lead to improvements in sleep quality and reductions in stress, anxiety, and depression levels. These findings suggest that participation in Yoga sessions may lead to improvements in sleep quality and reductions in stress, anxiety, and depression levels.

**Keywords:** Yoga, students, sleep quality, stress, anxiety

# THE THERAPEUTIC POTENTIAL OF LAUGHTER YOGA: A NARRATIVE REVIEW OF ITS PSYCHOPHYSIOLOGICAL MECHANISMS AND OTHER HEALTH BENEFITS

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**Introduction:** Laughter yoga, a novel mind-body intervention developed by Dr. Madan Kataria, combines laughter exercises with yogic breathing techniques to promote physical, mental, and emotional well-being. This research article aims to provide a comprehensive narrative review of the scientific evidence surrounding laughter yoga, focusing on its composition, mechanisms of action, and documented health benefits.

**Methods:** A comprehensive laughter yoga literature search was performed. A list of inclusion and exclusion criteria was identified. Empirical studies investigating the effects of laughter yoga on various health outcomes, including stress, anxiety, depression, pain perception, immune function, and cardiovascular health were reviewed. Thematic analysis was applied to summarize laughter yoga health-related outcomes, relationships, and general robustness. Methodological considerations, such as study design, participant characteristics, and outcome measures, were discussed to evaluate the quality of evidence.

**Results:** Despite the limited number of publications, the evidence suggested that sustained laughter for at least 15-20 minutes stimulates the release of endorphins and other neurotransmitters, leading to stress reduction, pain modulation, and improved mood. Additionally, laughter yoga enhances cardiovascular health, boosts immune function, and fosters social connection and emotional resilience. Practical applications of laughter yoga in clinical and non-clinical settings were also examined, highlighting its potential as an adjunctive therapy for mental health disorders, chronic pain conditions, and stress-related illnesses.

**Conclusion and Recommendations:** Laughter yoga emerges as a promising intervention for promoting holistic wellness and enhancing quality of life. By integrating laughter into healthcare practices and wellness programs, laughter yoga has the potential to revolutionize health promotion efforts and contribute to the advancement of mind-body medicine. Recommendations for future research directions and clinical implementation are proposed to elucidate the therapeutic efficacy of laughter yoga further.

**Keywords:** Laughter yoga, Health benefits, Mind-body intervention, Wellness, Stress reduction

### YOGA HABITS OF STUDENTS IN HIGHER EDUCATION: CROSS-SECTIONAL STUDY

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**Introduction:** In our empirical study, we would like to focus on the prevalence of yoga practice and its association with certain health behaviors and health status in a domestic higher education setting.

**Methods:** Our study was an online, anonymous questionnaire survey among university students in Pécs in the spring semester of 2023. The sample consisted of 45 athletes and 296 humanities students, a total of 341 participants (92 men, 249 women, mean age:  $29.10 \pm 11.30$  years). The results are based on initial data from a larger study examining the effects of regular yoga practice, which included students who participated in an elective yoga course for 13 weeks. They practiced yoga for an hour and a half each week. After the sociodemographic questions, participants completed a questionnaire designed by us, asking about health behaviors (smoking habits, alcohol consumption, exercise habits, etc.) and habits and (frequency, attitude) related to yoga, meditation, and relaxation.

**Results:** The positive attitude of the majority of students is evident, even though the proportion of regular yoga practitioners is significantly lower. Of the students in the study, 33.7% relax, 18.5% meditate, and 20.5% practice yoga regularly. The majority of respondents would recommend yoga to their family members. The results of the empirical research indicate that the students in the sample approach yoga from a fundamentally positive perspective.

**Conclusion:** Our results show that yoga practice is not related to either alcohol or smoking, i.e. it is not related to elements of a healthy lifestyle. University students who are looking for an exciting activity may not want to choose this type of sport. Our results show that there is no correlation. Their age puts them at greater risk of more easily trying substances that are harmful to their health and that may lead to negative effects later on, possibly addiction. Yoga practice is not necessarily a sign of positive health behavior.

**Keywords:** Yoga, meditation, relaxation, attitude, health behaviors

# THE ASSOCIATIONS OF YOGA PRACTICE FREQUENCY AND SUBJECTIVE WELL-BEING AMONG HUNGARIAN YOGA PRACTITIONERS DURING COVID-19: A CROSS-SECTIONAL STUDY

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**Introduction:** The direct and indirect effects of the COVID-19 pandemic significantly reduced the subjective well-being of the population, which shows an inverse relationship with symptoms of depression. According to pre-pandemic studies, yoga shows a positive association with increased well-being and reduced depressive symptoms.

**Objective:** This study investigated the association between yoga and health status, and how the frequency of yoga practice affected the subjective well-being (SWB) of the respondents.

**Methods:** Hungarian yoga practitioners (N=379) aged 20 to 75 years (M=44.13, SD=10.06; 93.4% female) were asked about their health, perceived usefulness of yoga practice for COVID-19 cases, and their SWB during the second wave of the pandemic. Sociodemographic data, yoga practice characteristics, COVID-19 and health-related questions, and the WHO Well-being Index (WBI-5) were assessed. Associations were examined through ANOVA and Chi-square tests.

**Results:** There was a statistically significant difference among the yoga practice groups by weekly frequency (once a week, 2-3 times a week, 4-5 times a week, daily) on the total mean score of subjective well-being (WBI-5),  $F(3,373) = 12.97$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.094$ . The daily practice of yoga showed the highest SWB. Those who practice yoga more often per week consider yoga more favourable for prevention, symptom relief, and as a supplement to medical treatment.

**Conclusion:** More regular weekly yoga is associated with a higher level of SWB which can be successful in dealing with COVID-19 issues such as depression.

**Keywords:** Public health, yoga, COVID-19, subjective well-being

# YOGA AS A THERAPEUTIC OPTION TO IMPROVE THE PHYSICAL HEALTH OF OLDER ADULTS

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**Introduction:** The number of people aged 65 years or older is increasing. This rapid growth is expected to result in 1.6 billion older people worldwide by 2050. Aging reduces physical function which limits physical activity and activities of daily living (ADLs). These factors increase the risk of falls and musculoskeletal disorders. Regular exercise has numerous mental and physical health benefits for older adults. Yoga is highly recommended as an exercise program for the elderly to improve their fitness. This review study aims to present the therapeutic potential of yoga for the treatment of the most common diseases and symptoms affecting the elderly.

**Methods:** Searches were performed in PubMed, ScienceDirect, Google Scholar, and Web of Science. The studies were collected in April 2024. Search criteria were established to select systematic research papers. First, study subjects were selected as elderly people over 60 years of age. Second, the intervention method was limited to chair yoga or yoga programs. Studies were eligible for inclusion when they examined the effects of physical activity programs or more specifically, exercise programs in older adults aged 60+ years.

**Results:** The summary of the articles showed that yoga-based intervention significantly improved static and dynamic balance, decreased fear of falling, decreased pain, and positively influenced gait speed and fatigue. improved limb functions (p-values < 0.05 – 0.001).

**Conclusion:** This systematic review suggests that yoga-based exercise programmes have a positive impact on various aspects of physical health in older adults.

**Keywords:** Older adults, Aged, Elderly, yoga, chair-yoga, physical activity



### THE USE OF YOGA TO MANAGE STRESS AND BURNOUT AMONG HOSPITAL NURSES: A SYSTEMATIC REVIEW

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**Background:** Nursing is often associated with high levels of stress and burnout due to the demanding nature of the profession. In recent years, there has been growing interest in utilizing complementary interventions such as yoga to mitigate these challenges and enhance nurses' well-being. This systematic review aims to evaluate the effectiveness of yoga in managing stress and burnout among hospital nurses.

**Methods:** A comprehensive search of electronic databases including PubMed, Ovid Medline, Embase, CINAHL, Scopus and Web of Science was conducted in July 2023 to identify relevant studies published between 2013 and 2023. Studies were included if they investigated the use of yoga interventions among hospital nurses and reported outcomes related to stress and burnout. Quality assessment and data extraction were performed independently by two reviewers.

**Results:** The search yielded a total of 104 articles, of which 12 studies met the inclusion criteria and were included in the review. The findings suggest that yoga interventions have the potential to significantly reduce stress and burnout among hospital nurses. Various yoga modalities, including hatha yoga, mindfulness-based yoga, and relaxation techniques, were employed across the studies. Positive effects were observed in measures such as perceived stress levels, emotional exhaustion, depersonalization, and overall well-being.

**Conclusion:** This systematic review provides compelling evidence supporting the effectiveness of yoga as a promising strategy for managing stress and burnout among hospital nurses. Incorporating yoga into nurses' wellness programs holds promise for enhancing their mental and emotional resilience, ultimately benefiting both healthcare professionals and the quality of patient care. However, further high-quality research with larger sample sizes, increased performance time, and rigorous methodologies is warranted to validate these findings and inform evidence-based practice in healthcare settings.

**Keywords:** Nurses, stress management, burnout, yoga, occupational medicine, occupational health

# THE IMPACT OF YOGA INTERVENTIONS ON BRAIN GABA (NEUROTRANSMITTER) LEVELS: A LITERATURE REVIEW OF EFFECTS ON DEPRESSION AND ANXIETY

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**Introduction:** Gamma-aminobutyric acid, or GABA, is a neurotransmitter that lowers anxiety and promotes relaxation by suppressing nervous system activity. Yoga can assist in addressing the potential causes of major depressive disorder (MDD), which might include lower gamma amino-butyric acid (GABA) levels and an imbalance in the autonomic nerve system (ANS). Through increased parasympathetic nervous system (PNS) and GABA activity, yoga is proved to restore the balance to stress systems, reducing stress load and improving conditions including depression and PTSD.

**Methodology:** A comprehensive search on the Impact of Yoga Interventions on Brain GABA (neurotransmitter) Levels was performed by using a search strategy including these keywords “gamma-Aminobutyric Acid [MeSH] OR GABA [Tiab] AND Yoga [MeSH] OR Meditation [MeSH] OR Yog [Tiab] “ in two databases PubMed and Embase. Only 7 studies were included considering the eligibility criteria.

**Results:** Studies show that yoga therapy can cause positive functional changes in the brain, protecting against depression, anxiety, and stress. Evidence supports recommended yoga therapy to patients suffering from anxiety and depression. Experienced yoga practitioners show an increase in brain GABA levels after a yoga intervention. This implies yoga could treat disorders with low GABA, like depression, anxiety, and PTSD.

**Conclusion:** Yoga has been shown to alleviate depression and PTSD by enhancing GABA activity and boosting parasympathetic nervous system function. However, to support these preliminary findings, further research and a greater number of evidence are required.

**Keywords:** Brain GABA, Yoga, Depression, Anxiety

# INTEGRATING AYURVEDA AND YOGA INTO MODERN MEDICAL TREATMENTS: A HOLISTIC APPROACH TO IMPROVING OUTCOMES AND QUALITY OF LIFE

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**Introduction:** Ayurveda, the traditional Indian system of medicine, has long recognized the importance of a holistic approach to healthcare. With its emphasis on prevention and the use of plant-based medicines, Ayurveda offers valuable insights and tools for addressing many contemporary health challenges. Similarly, yoga, which originated as part of the same ancient tradition, has gained widespread recognition as an effective complementary therapy for promoting physical and mental well-being. In this context, there is growing interest in integrating Ayurveda and yoga into modern medical treatments to improve patient outcomes and quality of life.

**Methods:** This presentation will draw upon the speaker's extensive clinical experience in providing Ayurvedic consultations and yoga therapies in Europe over the past seven years. Case studies and research findings will be presented to illustrate how Ayurvedic herbs, yoga practices, and other non-pharmacological therapies can be effectively combined with conventional medications and interventions to manage common health conditions, including diabetes, hypertension, and autoimmune disorders. Emphasis will be placed on personalizing treatment plans based on individual needs and constitution, as per Ayurvedic principles.

**Results:** Preliminary data suggest that integrating Ayurveda and yoga into modern medical treatments can lead to significant improvements in symptom management, reductions in medication usage, enhanced emotional well-being, and increased patient satisfaction. Moreover, by supporting the body's natural healing processes, these approaches may contribute to reduced disease progression and improved long-term prognosis.

**Conclusion:** Given the increasing burden of chronic diseases and the limitations of conventional treatments, there is a pressing need to explore and promote alternative and complementary strategies for optimizing health and well-being. By harnessing the synergistic potential of Ayurveda and yoga, healthcare providers can offer patients a more comprehensive and holistic approach to managing their health concerns, ultimately improving both outcomes and quality of life.

**Keywords:** Ayurveda, Yoga, Integrative Medicine, Non-Pharmacological Therapies, Chronic Diseases, Holistic Health

### MARMAS, DOSHAS AND SUBODHAS

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Marmas are well-located areas in the physical body, they are seats of Prana or vital energy and in them, through different means and techniques, you can work to influence the flow of Prana, the vital energy. In the ancient Ayurvedic texts written by vaidyas of the past, such as Charaka Samhita or Sushruta Samhita, these Marma zones are described in detail, as the effects that are generated when there is some type of damage in them: intense pain, disability, loss of function, loss of sensation or death.

This is why the Marmas should not be damaged and extreme care must be taken with them, especially when performing surgeries. On the other hand, it is known that if there is inflammation or pain at any Marma point, stimulating the nearby Marma points can help relieve this pain and that is why they have been used to treat various physical and mental disorders. There are more and more studies working on this fascinating Ayurvedic therapy. The doshas are the forces that control and upon which the functioning of both the body and the mind depends. They represent the five elements filled with prana or life force.

The Sudeshas are the different divisions of the doshas depending on how and where the doshas act. The proper functioning of them and therefore the vital energy manifested in them are of great importance for the performance of the organism and the maintenance of health. Furthermore, the Marmas, being seats of vital energy, are very closely related to them.

The present work explores this relationship and points out the use of Marma therapy to maintain the balance and the best running order of the doshas and sub-doshas.