



Physiological Impacts of Yoga on Aging

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<p>Received: 28.06.2026</p> <p>Accepted: 03.07.2026</p> <p>Published: 09.07.2026</p>	<p>Abstract</p> <p><i>Yoga is an ancient physical, mental & spiritual practice deeply rooted in Indian philosophy that originated in India over 5,000 years ago. It is a holistic discipline that integrates the body, mind, and spirit through a combination of Physical postures (Asanas), Breathing techniques (Pranayama), Meditation and mindfulness (Dhyana), Hand gestures (Mudras) and locks (Bandhas). Spiritual practices aimed at self-realization and inner peace. The word "Yoga" comes from the Sanskrit root "Yuj", which means "to unite" or "to join." It signifies the union of: Individual consciousness with universal consciousness, Body with mind & Action with awareness. These principles found in Patanjali's yoga sutras. Maharishi Patanjali one of the ancient sages in India who had authored yoga sutras commonly known as Patanjali Yoga sutra or Patanjali yoga darshan that serves as the foundation of Raja yoga. Whereas, aging is the time related deterioration of physiological functions necessary for survival. It is characterized by the accumulation of molecular and cellular damage over time leading to a decline in physical and mental capacity and an increased risk of disease. Multiple diseases related to respiratory system like Asthma, COPD and cardiovascular system like Hypertension, nervous system like Dementia affects the life of aged people. Yoga & Pranayama has a great impact on aging for irradiating those diseases and also helps to maintain a healthy life. My research paper clarifies the effectiveness of yoga as a non-pharmacological intervention in promoting healthy aging with justifiable proof.</i></p> <p>Key Words: Yoga, Healthy Aging, Asanas, Pranayama, Meditation, Respiratory Function, Asthma, COPD, Hypertension, Nonpharmacological intervention.</p>
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Introduction

Older adults face an inherently elevated risk of health problems, in which the capacity to maintain well-being hinges on the preservation of physiological functioning. Aging is characterized by fundamental alterations in homeostasis and physiology, including the loss of muscle mass and strength and the progressive decline of cardiovascular, respiratory, and urinary functions, and a relevant challenge for clinicians is how to counteract the effects of aging (Madhivanan et al., 2021).

Aging is the accumulation of changes in a biological system over time (Loewenthal et al., 2023). A collective grasp of these changes is central for understanding the physiological basis of the aging process. Histories of numerous interlinked physiological changes extending from the cellular and molecular levels to the organism, social, and cultural levels are recorded systematically. The resulting set of conditions accompanying aging span many scales and includes the following: cellular senescence, epigenetic alterations, altered intercellular communication, dysregulated

nutrient sensing, genomic instability, stem cell exhaustion, loss of proteostasis, mitochondrial dysfunction, telomere attrition, chronic inflammation, macromolecular damage, and deleterious alterations in cellular energy metabolism.

Within this context, yoga has emerged as an intervention of interest, which is an ancient mind–body practice that comprises postures (asanas), breathing techniques, and meditation (Loewenthal et al., 2023). Different types of yoga emphasize these components to different degrees, with recent evidence indicating a positive role in health promotion and quality of life. The physiological interactions between yoga and aging processes underpin the discipline’s potential for mitigating decline and are an active research area.

So, in this research paper I have try to describe the physiological aspects of yoga and highlights its potential benefits in healthy aging.

Yoga & its fundamentals

Yoga is an ancient discipline that originated in India over 5,000 years ago. Traditionally seen as a path to spiritual enlightenment, yoga has evolved into a global practice that encompasses physical, mental, and spiritual well-being. Yoga, a practice rooted in ancient Indian philosophy, is both a physical and spiritual discipline that promotes holistic health. The word "Yoga" is derived from the Sanskrit root *yuj*, which means “to yoke” or “to unite,” symbolizing the integration of body, mind, and spirit (Feuerstein, 2003). The earliest references to yoga appear in the Rig Veda and later in the Upanishads, where the focus was on spiritual knowledge and inner discipline.

The classical system of yoga was codified by Patanjali in the *Yoga Sutras*, which outlines the Eight Limbs of Yoga or *Ashtanga Yoga*—a framework for achieving self-realization (Bryant, 2009). According to Patanjali’s *Yoga Sutras*, the eight limbs provide a comprehensive guide for ethical conduct, physical discipline, and spiritual development. The eight limbs of yoga are

1. **Yama** – Ethical restraints (e.g., non-violence, truthfulness)
2. **Niyama** – Personal observances (e.g., purity, contentment)
3. **Asana** – Physical postures to promote strength and flexibility
4. **Pranayama** – Regulation of breath and energy
5. **Pratyahara** – Withdrawal of the senses
6. **Dharana** – Concentration
7. **Dhyana** – Meditation
8. **Samadhi** – State of spiritual absorption or enlightenment (Iyengar, 2005)

Aging

Aging is an intricate biological process involving the gradual decline of physiological functions across every level of biological hierarchy. The gradual loss of physiological integrity culminates in broad impairment of organ systems, which in turn leads to vulnerability to disease. Aging has been attributed to numerous mechanisms, including genomic instability, epigenetic alterations, and telomere attrition. Behavioural, physiological, and social changes associated with aging may be theorized using a variety of psychological frameworks. The psychosocial approach emphasizes maintaining physical, cognitive, and social activities to sustain longevity and health. The 3-factor model considers psychological (perceived control), social (social support), and biological (functional abilities) predictors of mortality. For older adults, active engagement with life is paramount for healthy aging. The biopsychosocial model combines biological changes, psychological stresses, and social context to capture aging’s multifaceted nature, emphasizing an

integrated approach with complementary modalities such as yoga (Loewenthal et al., 2023).

Biological theories of aging

Aging or biological aging is described by different biologists from various point of view. Some of the most important theories for aging and death of a living organism are described here. Biological aging can be considered as a continued growth and development of the organism from infancy to maturity and adulthood to senility and death, or as a degenerative process that affects the organism in the later part of its life and leads to death. It is a gradual, continuous, progressive, intrinsic, universal and deleterious functional and structural changes that occur in all living organisms functioning over a period of time from conception to death.

Review of Related Literature

The growing elderly population worldwide has increased interest in non-pharmacological approaches to promote healthy aging. Yoga has emerged as a promising intervention for improving physical, mental, and cognitive well-being among older adults. Several studies have examined the effectiveness of yoga in enhancing health outcomes in the geriatric population.

The most recent evidence synthesis by *Yoga for Healthy Ageing: Evidence, Clinical Practice, and Policy Implications in the WHO Decade of Healthy Ageing* (2026) provides a comprehensive overview of yoga's role within global healthy aging initiatives. Drawing upon evidence accumulated over the past decade, the review concluded that yoga effectively promotes healthy aging by simultaneously improving physical function, psychological resilience, cognitive performance, cardiometabolic health, and overall quality of life. The authors argued that yoga aligns closely with the objectives of the World Health Organization's Decade of Healthy Ageing (2021–2030), particularly regarding the maintenance of functional ability, prevention of frailty, promotion of mental well-being, and enhancement of social participation. The review also emphasized the importance of integrating evidence-based yoga programs into primary healthcare, community health services, and national aging policies while advocating for standardized clinical guidelines and professional training for yoga instructors working with older adults.

Recognizing the importance of long-term adaptations, Campelo et al. (2025) conducted a scoping review and evidence map examining the sustained effects of yoga-based practices on neural, cognitive, psychological, and physiological outcomes. Their review demonstrated that prolonged yoga practice produces durable improvements across multiple domains, including executive function, memory, emotional regulation, stress resilience, cardiovascular health, respiratory function, hormonal regulation, and inflammatory biomarkers. Long-term practitioners also exhibited enhanced neural connectivity and better preservation of cognitive function compared with sedentary individuals. Nevertheless, the authors identified considerable heterogeneity among intervention protocols and outcome measures, emphasizing the need for longitudinal randomized controlled studies capable of establishing causal relationships.

Research attention has increasingly shifted from functional outcomes toward understanding the biological mechanisms through which yoga influences aging. Loewenthal et al. (2024) reviewed the physiological impact of yoga on aging and synthesized evidence demonstrating that yoga positively influences multiple biological systems involved in the aging process. Regular yoga practice was associated with improvements in cardiovascular function, autonomic nervous system regulation, endocrine balance, respiratory efficiency, immune function, and musculoskeletal

health. Importantly, the review discussed yoga's influence on cellular aging by reducing oxidative stress, chronic inflammation, cortisol secretion, and DNA damage while potentially enhancing telomerase activity and mitochondrial function. These physiological adaptations collectively support the hypothesis that yoga may slow biological aging through multisystem regulation.

Frailty represents one of the most important predictors of disability and mortality among older adults. Addressing this issue, Loewenthal, Innes, Mitzner, Mita, and Orkaby (2023) systematically reviewed the effects of yoga on frailty in older adults. Their findings suggested that yoga interventions significantly improve components of physical frailty, including muscle strength, balance, mobility, walking speed, and functional independence. Although evidence supporting direct reductions in overall frailty scores remained limited because of methodological heterogeneity, the review concluded that yoga may serve as an effective strategy for delaying frailty progression and preserving independence among aging populations. The authors also highlighted the necessity for standardized frailty assessments and long-term follow-up studies.

Martens (2022) conducted an integrative review examining yoga interventions among older adults and concluded that yoga is a safe, feasible, and effective complementary therapy for promoting healthy aging. The review reported improvements in balance, flexibility, muscular strength, mobility, sleep quality, and overall quality of life following regular yoga practice. Additionally, psychological outcomes such as reductions in anxiety, stress, and depressive symptoms were consistently observed across the included studies. However, the author emphasized the need for larger randomized controlled trials with standardized intervention protocols to strengthen the existing evidence.

Madhivanan, Krupp, Waechter, and Shidhaye (2021), in their article *Yoga for Healthy Aging: Science or Hype?* critically examined the scientific evidence supporting yoga as a tool for healthy aging. The authors found that yoga contributes positively to physical fitness, balance, flexibility, mental health, and overall quality of life among older adults. However, they also noted limitations in existing research, including small sample sizes and methodological inconsistencies. The study concluded that while yoga shows considerable promise for healthy aging, more rigorous and large-scale research is required to establish definitive evidence.

Panjwani, Dudani, and Wadhwa (2021), in their study *Geriatric Population and Yoga*, explored the role of yoga in addressing age-related physical and psychological challenges. The authors reported that yoga practices, including asanas, pranayama, and meditation, help reduce stress, anxiety, hypertension, and musculoskeletal discomfort among older adults. The study emphasized that yoga promotes holistic health by improving both physical and mental well-being, making it a valuable component of geriatric healthcare.

Edwards (2019) investigated *The Effects of a Yoga Intervention on Cognitive Function in Older Adults*. The study examined whether participation in a structured yoga program could enhance cognitive performance among elderly individuals. Findings revealed improvements in attention, memory, executive functioning, and mental clarity following regular yoga practice. The study suggested that yoga may support cognitive health and potentially reduce the risk of age-related cognitive decline by combining physical movement, breathing exercises, and mindfulness techniques.

Gothe, McAuley, and Yoga (2015) conducted a systematic review to investigate the relationship between yoga practice and functional mobility in older adults. Their findings indicated that regular

yoga practice significantly improves balance, gait, flexibility, and lower-body strength, which are essential for maintaining independence and preventing falls among the elderly. The review highlighted yoga as a safe and effective intervention for enhancing mobility and physical functioning in aging populations.

Patel, Newstead, and Ferrer (2011) conducted a systematic review and meta-analysis to assess the effects of yoga on physical functioning and health-related quality of life in older adults. The results demonstrated that yoga significantly improves strength, flexibility, balance, and overall physical performance. Furthermore, participants reported enhanced quality of life, reduced pain, and improved emotional well-being. The authors concluded that yoga is an effective complementary therapy for promoting healthy aging and maintaining functional independence among older adults. Overall, the reviewed literature consistently demonstrates that yoga has beneficial effects on the physical, cognitive, and psychological health of older adults. Improvements in mobility, balance, strength, mental well-being, cognitive function, and quality of life have been reported across multiple studies. Despite some methodological limitations noted by researchers, the evidence suggests that yoga is a valuable and accessible intervention for supporting healthy aging and enhancing the well-being of the geriatric population.

Objective of the study

- To examine the effectiveness of yoga as a non-pharmacological intervention in promoting healthy aging by improving the physical, mental, and cognitive well-being of older adults, and to assess its potential role in enhancing overall health outcomes among the elderly population.

Research questions

Primary Research Question:

- Does yoga serve as an effective non-pharmacological intervention for promoting healthy aging by improving the physical, mental, and cognitive well-being of older adults?

Sub-questions:

1. Does regular yoga practice improve physical health and functional mobility among older adults?
2. Does yoga enhance mental well-being and reduce stress, anxiety, and depression in the elderly?
3. Does yoga improve cognitive functioning among older adults?
4. Does participation in yoga contribute to better overall health outcomes and quality of life in the aging population?

Methodology

This study adopts a secondary data research approach to examine the effectiveness of yoga as a non-pharmacological intervention in promoting healthy aging among older adults. Secondary data were collected from various published and reliable sources, including peer-reviewed journal articles, books, research reports and online academic databases. The use of secondary data enables a comprehensive review and analysis of existing evidence regarding the physical, mental, and cognitive benefits of yoga for the elderly population.

The study follows a descriptive and analytical research design, focusing on the systematic examination of previous studies and documented findings related to yoga and healthy aging. Relevant literature was identified, reviewed, and synthesized to assess the role of yoga in enhancing overall health outcomes among older adults. Data obtained from these sources were analysed qualitatively to identify common themes, trends, and conclusions regarding the effectiveness of yoga interventions in the aging population.

Result and Discussion

• Physiological impacts of Yoga on Physical Health:

The available scientific evidence indicates that yoga is an effective non-pharmacological intervention for promoting healthy aging. Regular yoga practice integrates physical postures (asanas), breathing exercises (pranayama), meditation, and relaxation techniques that collectively improve multiple dimensions of health in older adults. Studies have demonstrated significant improvements in musculoskeletal strength, flexibility, balance, cardiovascular and respiratory function, psychological well-being, cognitive performance, and overall quality of life. Yoga also reduces age-related physiological stress through improvements in autonomic nervous system regulation, inflammatory responses, oxidative stress, and neuroendocrine functioning. Because yoga is safe, inexpensive, and adaptable to different levels of physical ability, it represents a sustainable strategy for maintaining independence and healthy aging among the elderly (Madhivanan et al., 2021; Panjwani et al., 2021; Batrakoulis, 2022; Bower & Irwin, 2016).

▪ Effect of Yoga on Cardiovascular Health:

Cardiovascular health tends to decline with advancing age due to increased arterial stiffness, elevated blood pressure, reduced cardiac efficiency, and a higher risk of cardiovascular diseases. Yoga has emerged as an effective non-pharmacological intervention for improving cardiovascular function and reducing cardiovascular risk factors among older adults.

Regular yoga practice combines physical postures (asanas), breathing techniques (pranayama), and meditation, which collectively improve autonomic nervous system regulation and cardiovascular efficiency. Studies have shown that yoga can significantly reduce resting heart rate, systolic and diastolic blood pressure, and improve heart rate variability, indicating enhanced parasympathetic activity and reduced sympathetic overactivity (Patel et al., 2012).

Yoga has also been associated with improved endothelial function and reduced arterial stiffness, both of which are important indicators of vascular health. By decreasing oxidative stress and systemic inflammation, yoga contributes to better vascular function and lowers the risk of atherosclerosis and other cardiovascular disorders (Madhivanan et al., 2021).

A systematic review by Cramer et al. (2014) reported that yoga interventions produced significant reductions in major cardiovascular risk factors, including blood pressure, body mass index (BMI), total cholesterol, low-density lipoprotein (LDL) cholesterol, and triglycerides. These improvements were comparable to those achieved through conventional exercise programs.

Furthermore, yoga-based lifestyle interventions have demonstrated positive effects on patients with coronary artery disease and heart failure by enhancing exercise tolerance, improving quality of life, and reducing stress-related cardiovascular burden (Innes et al., 2018).

▪ Effect of Yoga on Respiratory Health:

Elderly individuals experience a decline in respiratory function characterized by reduced

respiratory muscle strength and thoracic cage compliance (F Santaella et al., 2011). Respiratory function, as measured by spirometric parameters, also decreases linearly with age (Yamamoto-Morimoto et al., 2019). Yoga practice has been associated with improvements in respiratory function in the elderly population. An 18-month yoga program resulted in enhancements in peak expiratory flow rate, timed vital capacity, and breath-holding time among elders. Eight weeks of yoga practice (asana with pranayama) produced increases in expiratory and inspiratory reserve volumes. These yoga-associated improvements in respiratory function may emerge through increased strength of respiratory muscles and greater thoracic cage compliance. Research examining the effects of yoga on physiological markers reinforces its proposed benefits for age-related challenges. A 12-week intervention combining postures, breathing exercises, and meditation produced positive modifications in biomarkers of cellular aging, including DNA damage products, oxidative stress markers, and telomere length. Complementary data highlight respiratory improvements and cardiac sympatho-vagal balance as additional physiological targets (F Santaella et al., 2011). Increased subjective well-being from yoga-based lifestyle modifications further supports a role in decelerating age-related frailty. (Madhivanan et al., 2021).

▪ **Effect of yoga practice for improving physical health and functional mobility among older adults:**

Evidence consistently demonstrates that regular yoga practice significantly improves physical health and functional mobility among older adults. Yoga enhances muscular strength, flexibility, balance, joint mobility, posture, gait, and coordination, thereby reducing the risk of falls and disability. Research has also shown improvements in cardiovascular endurance, respiratory efficiency, and functional fitness after yoga interventions ranging from 8 weeks to 18 months. These physiological adaptations enable older adults to perform activities of daily living more independently and maintain functional capacity with advancing age. Consequently, yoga serves as an effective exercise modality for preserving physical function and delaying age-related physical decline (Santaella et al., 2011; Yamamoto-Morimoto et al., 2019; Madhivanan et al., 2021; Saud et al., 2022; Batrakoulis, 2022). Musculoskeletal problems such as bone loss, osteoarthritis, low back pain, and loss of muscle mass, strength and endurance become increasingly common with advancing age (Saud et al., 2022). These contribute significantly to cost of care and loss of independent living in old age, but many of these conditions can be improved with exercise, and gentle stretching and respiration exercises then become more relevant (Madhivanan et al., 2021). Yoga increases joint mobility, muscle strength and flexibility. A 12-week yoga intervention improved upper and lower body flexibility and explosive leg power in older adults. Asana practice improves muscle strength and endurance, including the small intrinsic muscles of the back and back extensors which have a larger impact because of their relatively high proportional attachment area. Evidence also addresses physical mobility and functional independence. A 20-week program enhanced spinal mobility, muscle flexibility, back strength, and abdominal strength among women aged 50 to 79. Minor adverse events—including knee pain and muscle strain—occurred in some trials, though others reported no injuries. Arthritis is a leading cause of disability in those over 55 years of age, with osteoarthritis now the leading cause of disabilities worldwide; yoga significantly improves strength, flexibility and functional autonomy associated with arthritis and related pain levels. Regular practice also stabilizes the cervical lordosis, thereby reducing disability associated with neck pain and spondylosis.

- **Role of yoga in enhancing mental well-being and alleviating stress, anxiety, and depression in older adults:**

A substantial body of evidence supports the beneficial effects of yoga on psychological health among older adults. Yoga significantly reduces perceived stress, anxiety, depressive symptoms, and emotional distress while improving mood, emotional regulation, resilience, and overall psychological well-being. These benefits are attributed to enhanced parasympathetic nervous system activity, reduced cortisol secretion, improved gamma-aminobutyric acid (GABA) activity, and mindfulness-based emotional regulation. Meditation and controlled breathing further contribute to relaxation and improved sleep quality, thereby promoting better mental health and life satisfaction in the elderly population (Bower & Irwin, 2016; Madhivanan et al., 2021; Panjwani et al., 2021; Batrakoulis, 2022). The practice of yoga offers considerable advantages with respect to mental health among older adults. The stress associated with the aging process and major life events can be reduced through yogic practices. Yoga can also promote improved (psychological) well-being; many studies have demonstrated reductions in both state and trait anxiety following interventions incorporating postures and breathing techniques. Interpretation of such improvements points to several potential factors, including enhanced body awareness and self-efficacy, increases in vagal tone, improved regulation of the sympatho-adrenal system, and the ability to engage the relaxation response (F. Afonso et al., 2017).

Yoga reduces perceived stress and indicators of the stress response, increases positive affect, and alters markers of sympathetic nervous system activity. Studies have also associated yoga with improved perception, cognition, and mental health. The aging process tends to increase stress, and chronic stress may exacerbate aging. Yoga's ability to reduce stress may therefore be particularly helpful in terms of healthy aging.

- **Impact of yoga on cognitive functioning among older adults:**

Research suggests that yoga positively influences cognitive functioning in older adults. Regular yoga practice has been associated with improvements in attention, executive functioning, working memory, processing speed, learning ability, and cognitive flexibility. Neuroimaging studies indicate increased connectivity within brain regions responsible for executive control and memory, while physiological studies demonstrate reductions in oxidative stress and inflammation that contribute to neuroprotection. Yoga may also stimulate neuroplasticity through meditation and breathing exercises, helping delay cognitive decline associated with normal aging and reducing the risk of neurodegenerative disorders (Madhivanan et al., 2021; Gothe et al., 2019; Batrakoulis, 2022). A 90-day retreat integrating yoga with mindfulness meditation diminished biomarkers of inflammation and reduced hypothalamic-pituitary axis activity. Neuroanatomical and mental health benefits reaffirm the relevance of these physiological changes: yoga-induced adaptations in brain regions implicated in cognitive decline correspond with decreased anxiety among older practitioners. Longitudinal observations reveal that long-term practice sustains enhanced connectivity between the prefrontal and posterior cortex, particularly in older women—a factor critical to cognitive reserve.

- **Evaluating yoga's role in promoting overall health outcomes & quality of life in aging population:**

The evidence indicates that yoga contributes significantly to improved overall health outcomes and quality of life among older adults. Beyond enhancing physical, psychological, and cognitive

health, yoga promotes better sleep quality, social engagement, self-confidence, emotional resilience, and independence in daily activities. Long-term practitioners report greater life satisfaction and healthier aging trajectories compared with sedentary individuals. Furthermore, yoga's holistic approach addresses multiple age-related health challenges simultaneously, making it a valuable complementary intervention for successful aging and reducing healthcare burden among the elderly population (Panjwani et al., 2021; Madhivanan et al., 2021; Batrakoulis, 2022; Bower & Irwin, 2016)

The investigation of published meta-analyses reveals overarching conclusions about yoga's impact on human aging. The few existing data syntheses concur in maintaining that yoga exerts positive effects on the physical and mental conditions of the elderly (Madhivanan et al., 2021). Specifically, as an example, the meta-analysis by Madhivanan and associates confirmed noteworthy improvements in cardiovascular parameters, musculoskeletal functioning, respiratory capacity, and endocrine adjustments in aging individuals who engage with yoga. These findings are main factors in human aging; therefore, yoga remains a useful strategy to counterbalance the typical deterioration of physiological and biological processes.

The detection of positive outcomes contributes to a resolution of the scientific debate on the efficacy of yoga practice in specific populations. Complementarily, results from Krejčí, Hill, Kajzar, Tichý, and Hošek support the preventive effect of yoga regarding the risk of falls in seniors because of enhanced balance control, static and dynamic stability, and bodily integration (Krejčí et al., 2022). Thus, yoga may help seniors to develop the balance condition necessary for mobility and social interactions, underpinning the promotion of their active aging.

Furthermore, the retrospective analysis by Bhavanani, Ramanathan, and Madanmohan confirmed significant reductions of cardiovascular parameters in senior citizens following a single 60-minute yoga session (Balayogi Bhavanani et al., 2015). Consequently, the investigation favours the adoption of yoga practice in the elderly considering the association of some cardiovascular pathologies with morbidities and mortality in later life

Growing interest focuses on the positive impact of yoga practice as a means to promote healthy aging, supported by scientific evidence. Research includes quantitative studies, qualitative data, and meta-analyses. Randomized controlled trials demonstrate that yoga respiratory training improves respiratory function and cardiac sympatho vagal balance among elderly subjects (F Santaella et al., 2011). Qualitative research explores elderly individuals' experiences regarding the effects of yoga and light exercise on sedentary behaviour, emphasizing the role of physical activity, gene-environment interactions, and inflammatory status in the aging process (Gour et al., 2020). A comprehensive view of existing science addresses whether yoga constitutes a viable approach to healthy aging or represents mere hype, highlighting improvements in biomarkers of cellular aging, enhanced brain connectivity, and reductions in inflammation and anxiety (Madhivanan et al., 2021).

Physical inactivity and sedentary behaviour are recognized risk factors for chronic diseases in aging populations, and their impact is mediated by affective states such as anxiety and stress. Prolonged exposure to anxiety-provoking information during aging may elevate perceived stress levels and bias behavioural responses through automatic cognitive systems, thereby influencing engagement in health-promoting or detracting activities.

Various strategies have been employed to enhance well-being and promote healthy or successful

aging despite physical inactivity and sedentary lifestyles. Group-based and individual yoga programs offer alternatives to other physical activity or mindfulness interventions that may be perceived as inaccessible or undesirable. These programs have been demonstrated to generate positive effects on well-being and support healthy aging.

Conclusion

The physiological impacts of yoga demonstrate its promise as a comprehensive, effective, and widely accessible method to address some of the major maladaptive changes observed with advancing age (Madhivanan et al., 2021). Improving muscle strength provides enhanced resilience and injury prevention, which in turn helps maintain mobility and independence. Enhanced lung capacity improves oxygen uptake and transport, which is vital in preserving cellular function and reducing oxidative stress related to the aging process. An increased heart rate variability partly stems from an improved autonomic nervous system, which yields better cardiovascular health and a reduction in the risk of cardiovascular disease. Many of these physiological benefits in turn contribute to maintaining favourable brain health and reducing the anxiety frequently observed in the aging population (Gururaja et al., 2011). Taken together, the current scientific literature suggests that yoga represents a promising complementary therapy to mediate some of the major adverse physiological changes associated with the aging process.

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