Yoga and the Elderly

Yoga Alliance Webinar
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Aging Consequences and Challenges

- Diminution in most psychological and physical functioning
- Decline in brain function and structure: risk for cognitive decline, memory deterioration, depression, anxiety
- Bone shrinkage in size and density: risk of fracture
- Loss of muscle strength, endurance, flexibility: risk of falls/balance
- Stiffening blood vessels/arteries: risk of hypertension and CVD’s
- Reduced immune function: risk for infectious diseases and cancer
- Weakened sleep integrity: risk for insomnia
- Structural changes in intestines, bladder and prostate: risk for constipation, weak and/or frequent urination, incontinence
- Declines in vision, hearing, skin integrity, sexual health, metabolism
- Overall increase in stress and fall in well-being and quality of life
Elderly Physical Postures and Exercises?
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Yoga Practices
Postures, Breathing, Relaxation, Meditation

Fitness
- Flexibility
- Strength
- Coordination/Balance
- Respiratory Function
- Self-Efficacy

Self-Regulation
- Stress Regulation
- Emotion Regulation
- Resilience
- Equanimity
- Self-Efficacy

Awareness
- Attention
- Mindfulness
- Concentration
- Cognition
- Meta-cognition

Spirituality
- Unitive State
- Transcendence
- Flow
- Transformation
- Life Meaning/Purpose

Global Human Functionality
- Physical & Mental Health
- Physical Performance
- Stress & Emotion Regulation
- Awareness/Mindfulness
- Meta-cognition
- Positive Behavior
- Wellbeing
- Values
- Life Purpose & Meaning
- Spirituality
This review provides preliminary evidence that balance and mobility can be safely improved with participation in yoga by people aged 60 and over. Physical yoga warrants investigation as a potential intervention to prevent falls in older age.
Yoga-based exercise improves health-related quality of life and mental well-being in older people: a systematic review of randomised controlled trials

Alice Tulloch¹, Hannah Bombell¹, Catherine Dean¹, Anne Tiedemann²

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Figure 2: Effect size (95% CI) of yoga on HRQOL by pooling data from 12 studies comparing yoga versus control using random effects meta-analysis (n = 752).
The effects of yoga compared to active and inactive controls on physical function and health related quality of life in older adults—systematic review and meta-analysis of randomised controlled trials

Divya Sivaramakrishnan¹*, Claire Fitzsimons¹, Paul Kelly¹, Kim Ludwig², Nanette Mutrie¹, David H. Saunders¹ and Graham Baker¹

“…yoga interventions improve multiple physical function and HRQoL outcomes in this population… This study provides robust evidence for promoting yoga in physical activity guidelines for older adults as a multimodal activity that improves aspects of fitness like strength, balance and flexibility, as well as mental wellbeing.”

“Overall, we observed significant time effects for each of the balance, flexibility, strength, and mobility measures, indicating that both groups improved and Hatha yoga was just as effective as the conventional CDC strengthening guidelines in improving these functional fitness outcomes in community-dwelling older adults.”

“These findings have important clinical implications as yoga may serve as an alternate form of physical activity for individuals who may be unable to perform stretching and strengthening exercises using resistance bands or free weights. The gentle and modifiable nature of practically all Hatha yoga postures promises to be a well received, safe, and enjoyable exercise that is easy to adopt and maintain for older adults.”

[link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5864160/pdf/glv127.pdf)
Yoga was as effective as Tai Chi and standard balance training for improving postural stability and may offer an alternative to more traditional programs.
Pain and Physical Function in Osteoarthritis


https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5357158/
Electromyographic Pattern during Gait Initiation Differentiates Yoga Practitioners among Physically Active Older Subjects

Thierry Lelard¹*, Pierre-Louis Doutrellet¹,², Abdou Temfemo¹,³ and Said Ahmaidi¹

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“Gait initiation parameters…may be sensitive indicators of balance dysfunction and the risk of falls in older adults.”
“Our results suggest that the neuro-adaptation related to yoga performance can modify leg muscle pattern during gait initiation.”

"My memory is so bad."

"How bad is it?"

"How bad is what...?"
Mind-Body Therapies for Late-Life Mental and Cognitive Health

Kelsey T. Laird¹ · Pattharee Paholpak¹,² · Michael Roman³ · Berna Rahi¹ · Helen Lavretsky¹,⁴

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Abstract

Purpose of Review A growing body of research supports the use of mind-body therapies (MBTs) as minimally invasive and effective approaches for the management of late-life mood and cognitive disorders.

Recent Findings Recent randomized controlled trials and meta-analyses indicate that MBTs are effective for enhancing well-being, mood, sleep, and cognition in older adults. Evidence suggests that mindful movement (e.g., yoga, tai chi, walking meditation) may even outperform conventional physical exercise with regard to effects on quality of life, mood, and cognitive functioning.

Summary Practitioners may recommend MBTs as holistic, effective approaches for the management of common late-life mood and cognitive disorders. Continued research on MBTs will inform the development of even more effective/targeted interventions and contribute to greater acceptance and integration of these therapies into geriatric medicine and psychiatry.

Keywords Mind-body interventions · Geriatric mood disorders · Cognition
A relatively large number of studies with fair to good methodological quality have been conducted to evaluate the efficacy of mind-body exercise on cognitive functions among elderly. The findings from this review generally suggest that mind-body exercise could be safe and effective in enhancing cognitive function for people aged 60 years or older.

These findings reveal the possibility to increase resilience and to slow the decline of fluid intelligence and brain functional architecture and suggest that mindfulness plays a mechanistic role in this preservation.


https://www.frontiersin.org/articles/10.3389/fnagi.2014.00076/pdf
Elderly women with at least 8 years of yoga practice presented greater intra-network anteroposterior brain functional connectivity of the [default mode network]. This finding may contribute to the understanding of the influences of practicing Yoga for a healthier cognitive aging process.

Randomized clinical trial of yoga-based intervention in residents from elderly homes: Effects on cognitive function

V. R. Hariprasad, V. Koparde, P. T. Sivakumar, S. Varambally, J. Thirthalli, M. Varghese, I. V. Basavaraddi¹, B. N. Gangadhar

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Yoga group showed significant improvement in immediate and delayed recall of verbal and visual memory, attention and working memory, verbal fluency, executive function and processing speed than waitlist group at the end of 6 months...

Changes in Neural Connectivity and Memory Following a Yoga Intervention for Older Adults: A Pilot Study

Harris A. Eyre, Bianca Acevedo, Hongyu Yang, Prabha Siddarth, Kathleen Van Dyk, Linda Ercoli, Amber M. Leaver, Natalie St. Cyr, Katherine Narr, Bernhard T. Baune, Dharma S. Khalsa and Helen Lavretsky

aSemel Institute for Neuroscience and Human Behavior, UCLA, Los Angeles, CA, USA
bDiscipline of Psychiatry, University of Adelaide, Adelaide, South Australia, Australia
cAhmanson-Lovelace Brain Mapping Center, Department of Neurology, UCLA, Los Angeles, CA, USA
dAlzheimer’s Research and Prevention Foundation, Tucson, AZ, USA

The yoga group demonstrated a statistically significant improvement in depression and visuospatial memory. We observed improved verbal memory performance correlated with increased connectivity…”

“…[Kirtan Kriya and memory enhancement training were both] as effective in improving memory functions (namely memory recall) and functional connectivity related to verbal, attentional, and self-regulatory performance.”

Hatha Yoga Practice Improves Attention and Processing Speed in Older Adults: Results from an 8-Week Randomized Control Trial

Neha P. Gothe, PhD, Arthur F. Kramer, PhD, and Edward McAuley, PhD

“…yoga practice that includes postures, breathing, and meditative exercises lead to improved attentional and information processing abilities.”

“The 8-week yoga intervention had positive effects on attention and processing speed capacity when compared with stretching and strengthening exercises for healthy but sedentary older adults.”
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Learn more.
Elderly and Aging balance, falling, mobility, cognition, memory, sleep, dementia, etc.

Review Papers

The effects of yoga compared to active and inactive controls on physical function and health related quality of life in older adults: systematic review and meta-analysis of randomised controlled trials.
[full text]

Yoga-based exercise improves health-related quality of life and mental wellbeing in older people: a systematic review of randomised controlled trials.
Tulloch A, Bombeil H, Dean C, Tiedemann A.
[full text]

Mind-Body Therapies for Late-Life Mental and Cognitive Health.
Laid K, Paholpak P, Roman M, Rahi B, Lavretsky H.
[abstract]

Notable Publications

Greater Anteroposterior Default Mode Network Functional Connectivity in Long-Term Elderly Yoga Practitioners.
Front Aging Neurosci. 2019 Jul 2;11:158.
[full text]

Effects of yoga on well-being and healthy ageing: study protocol for a randomised controlled trial (FitForAge).
Östh J, Diwan V, Jrwe M, Diwan V, Chouchary A, Mahadik VK, Pascoe M, Hallgren M.
[full text]

Hatha Yoga Practice Improves Attention and Processing Speed in Older Adults: Results from an 8-Week Randomized Control Trial.
Gothe NP, Kramer AF, McAuley E.
[abstract]