



aging news

NEWSLETTER OF THE INSTITUTE ON AGING (IOA)

| UNIVERSITY OF WISCONSIN-MADISON

| Fall/Winter 2024

Source: Hamm, J. M., Parker, K., Lachman, M. E., Mogle, J. A., Duggan, K. A., & McGrath, R. (2024). *Increased frequency of light physical activity during midlife and old age buffers against cognitive declines.* *Journal of Behavioral Medicine.* <https://doi.org/10.1007/s10865-024-00478-2>

Light Physical Activity May be Just as Important to Thinking Skills as Vigorous Exercise for Older Adults

Research has shown that moderate-to-vigorous physical activity reduces problems with thinking skills or cognitive decline as we age, but less is known about whether light physical activity, such as easy walking, sweeping, folding laundry, and washing dishes, has similar benefits. This might matter especially for older adults, who may not be physically capable of engaging in vigorous exercise.

Data from over 2000 MIDUS participants aged 33-83 was used to investigate whether light physical activity was associated with cognitive functioning. Researchers looked at changes over a 9 year period in:

- **Physical activity:** how often participants engaged in light activity (housework, fishing), moderate activity (low impact aerobics, brisk walking), and vigorous activity (jogging, heavy lifting).
- **Cognitive function/thinking skills:** Researchers looked at skills known to be sensitive to early age-related declines:
 - **Executive function-** helps us manage our daily lives, and was measured by tasks such as counting backwards and completing the pattern in a series of numbers.

- **Episodic memory-** is our long-term memory that allows us to store information, measured by recalling a list of 15 words.



Results showed that:

- Declines in episodic memory were reduced by 50% and executive functioning by 55%, for those who *increased* their light physical activity over the 9 years (by 1 standard deviation), even when controlling for how much moderate or vigorous exercise they did.
- When analyzed by age, the benefits of increasing light physical activity for *episodic memory* were more pronounced for older adults, beginning at age 56 and becoming stronger with each passing year.

These results suggest that light physical activity, in addition to moderate and vigorous exercise, may diminish cognitive decline with aging, and that light physical activity may be even more helpful at older ages. Increasing light physical activity may be more feasible for older adults, as it is part of the everyday activities that most are still able to do. Promoting increases in light physical activity may be a viable target for interventions aiming to boost or maintain thinking skills as we age.



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Midlife in the United States (MIDUS) is an ongoing multi-disciplinary study administered by the Institute on Aging that is following over 11,000 US residents to understand factors that influence their health and well-being across the decades of adult life.



Religion & Spirituality May Improve Health by Reducing Inflammation

People who are religious and/or spiritual often live longer, healthier lives, but the biological mechanisms that explain this association are not well understood. Religion and spirituality may help people manage stress or help them make healthy choices, which may reduce inflammation that is implicated in many chronic diseases. This study used data from over 2000 MIDUS participants to look at whether religion and spirituality was associated with lower inflammation.

Attendance at religious services is often the measure of whether a person is religious, although other dimensions of religious and spiritual practice may also be important. This study used the following measures:

- **Spirituality:** how spiritual participants considered themselves to be and how important spirituality was in their lives.
- **Religious coping:** whether participants used their religion or spirituality for comfort, such as “I look to God for strength, support, and guidance.”
- **Daily spiritual experiences:** frequency of daily experiences of deep inner peace or harmony.
- **Mindfulness:** included questions such as, “Because of your religion or spirituality, do you try to be more engaged in the present moment?”
- **Private religious practice:** how often participants meditated, chanted, prayed privately, or read religious texts.
- **Service attendance:** participation in religious or spiritual services at least weekly, less than weekly, or never.
- **Inflammation:** assessed by blood levels of IL-6 and CRP (see sidebar).

Results showed that:

- Those who reported *more* daily spiritual experiences, more religious coping, more mindfulness, and being more spiritual showed significantly *lower* levels of **IL-6**.
- This association was less among those who smoked, had higher BMI, or exercised less. After controlling for these variables, only being more spiritual remained significant.
- Being more spiritual was also associated with *lower* levels of **CRP**.
- Engagement in private religious practices and service attendance were *not* associated with levels of either IL-6 or CRP.

These results show the importance of studying multiple forms of religious and spiritual expression when looking at how it influences health. Most previous studies also have not used large, nationally representative samples of Americans, and focused instead on unique samples, such as people who were highly stressed.

These new findings indicate that religion and spirituality may contribute to lower inflammation, which in turn may help prevent many aging-related diseases. Future research could explore the mechanisms of this association. It may be that religion and spirituality encourages healthy behaviors. Or it may be that social support, which has been linked to better health and may be part of religious or spiritual communities, plays a role in lowering inflammation.

Source: Vagnini, K. M., Morozink Boylan, J., Adams, M., & Masters, K. S. (2024). *Multidimensional religiousness and spirituality are associated with lower interleukin-6 and C-reactive protein at midlife: Findings from the Midlife in the United States study.* *Annals of Behavioral Medicine.* <https://doi.org/10.1093/abm/kaae032>

Chronic Inflammation:

- Inflammation, characterized by heat & swelling, is the body’s natural protective response to injury.
- **Localized inflammation** promotes healing, such as with a sprained ankle.
- **Chronic inflammation** that affects the entire body and lasts for years **is associated with many age-related diseases**, such as Alzheimer’s, cancer, and arthritis.

▪ Inflammation can be measured by blood levels of **IL-6** (interleukin-6) and **CRP** (C-reactive protein), higher levels of which indicate chronic inflammation.



- Levels of **IL-6** & **CRP** have been shown to increase with age.



Understanding How Inflammation Matters for the Link Between Loneliness and Walking Speed



Loneliness has been associated with decline in physical health, including slower walking speed. Slowed gait, in turn, has been linked with lowered life expectancy. However, the mechanism by which loneliness may result in slower walking speed is unknown. This study looked at whether inflammation, which is known to be triggered by emotional stress, plays a role.

Data from over 800 MIDUS participants aged 26 to 78 years was examined:

- **Loneliness:** participants reported their level of agreement/disagreement with statements such as, “No one really knows me well,” and “People are around me but not with me.”
- **Walking Speed:** was assessed by how many seconds it took participants to walk 25 ft.
- **Inflammation:** was measured by blood levels of IL-6 (see sidebar).

Researchers also looked at other factors previously linked to inflammation:

- **Obesity:** measured as body mass index (BMI) and waist to hip ratio.
- **Depression:** how often participants felt sad, worthless, or that nothing was enjoyable.
- **Friendships:** how many friends participants reported having (0-5, 6-10, 11-20, 21-50, or 51+).
- **Number of chronic illnesses:** how many chronic diseases participants had been diagnosed with, such as heart disease, diabetes, and high blood pressure.

Analysis showed that:

- Loneliness contributed to *increased* levels of IL-6, even after controlling for

other established risk factors, such as obesity and age.

- Depression, number of friends, and number of chronic illnesses did *not* contribute to levels of IL-6.

Inflammation was shown to mediate the relationship between loneliness and walking speed through two pathways:

- Loneliness was directly associated with higher IL-6, which was linked to slower walking speed.
- Loneliness was also linked to higher BMI, which was associated with higher IL-6, which in turn was linked to slower gait.

Other results:

- Though having more friends was linked to less loneliness, number of friends did not affect inflammation, perhaps because *quality rather than quantity of social connections may be more important.*
- Though loneliness has been stereotyped as a problem of old age, *no association was found between loneliness and age in this study.*

Inflammation is a major public health concern due to its role in many chronic diseases. Medications meant to reduce inflammation have had limited success, so other types of treatment are needed. These results suggest that interventions that promote meaningful social connections and target loneliness may be one possible alternative treatment.

Source: MacAulay, R. K., Timblin, H. R., & Tallman, M. D. (2024). How loneliness gets under the skin: Inflammation mediates the relationship between loneliness and gait speed. *Psychosomatic Medicine*, 86(2), 99-106. <https://doi.org/10.1097/PSY.0000000000001268>

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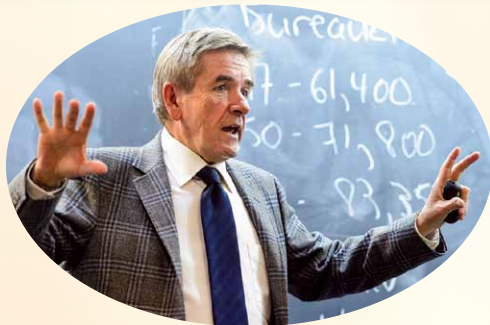
“Try to keep your soul young and quivering right up to old age.”

~ George Sand, French Feminist & Writer

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The Institute on Aging is now hosting this award winning lecture series begun by Emily Auerbach in 1993.



David McDonald, Ph.D.

Alice D. Mortenson/Petrovich Distinguished Professor of Russian History; Professor Emeritus, History; Former Special Assistant to the Chancellor for Athletics; UW–Madison

Wed., Oct. 9, 2024, 2-4 pm

at the Pyle Center, UW–Madison
702 Langdon St., Madison, WI
Refreshments to Follow

A Canadian Cold War Kid and the Persisting Challenge of Russia



This talk will focus on an unlikely career in the study of the Russian Empire and the Soviet Union, leavened with excursions into the realm of modern sports.

Dr. McDonald taught at UW–Madison from 1988 until his retirement in 2023, in a career that took him from his native Saskatchewan, Canada to Toronto, Leningrad, New York, and, ultimately, Madison. During his time at UW–Madison, he taught courses in the history of modern Europe and the Russian Empire, as well as courses on sports, most notably baseball, in collaboration with Major League Baseball Commissioner Emeritus Alan “Bud” Selig. McDonald’s publications include books on imperial Russian foreign policy, sport’s place in modern culture, and, as an editor, a 22-book collection entitled “Russia’s Great War and Revolution, 1914-22.”



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