# aging news

NEWSLETTER OF THE INSTITUTE ON AGING (IOA) | UNIVERSITY OF WISCONSIN-MADISON | Winter/Spring 2024

**Relishing positive experiences, such as those below, may improve our long-term survival:**

- *seeing beautiful scenery*
- *praying or meditating*
- *seeing old friends*
- *sitting in the sun*
- *sleeping soundly*
- *taking a relaxing bath*
- *being complimented*
- *laughing*
- *being with animals*
- *having a lively talk*
- *having peace & quiet*
- *eating good meals*
- *smiling at people*
- *teaching someone*
- *having spare time*
- *feeling no pain*
- *giving thanks*
- *thinking about a good future*

**MIDUS.wisc.edu**

*Midlife in the United States (MIDUS) is an ongoing multi-disciplinary study administered by the Institute on Aging.*

## The Link Between Positive Experiences and Survival

A lot of research has focused on how adverse events can negatively impact our lives. Less research has been done on the impact of positive events. This study used MIDUS data to look at whether a range of positive experiences and our appreciation of them can affect how long we live. The study measured:

- Frequency of positive events: Participants were asked how often in the last month they participated in 49 experiences that involved positive activities like relaxation, physical comfort, recreation, entertainment, appreciating nature, social engagement, intimacy, and achievement.
- Enjoyment of events: Participants rated their degree of enjoyment in each event, ranging from "neutral or unpleasant" to "very enjoyable."
- Mortality: In the sample of over 1200 participants, 205 died during the follow-up period, 12-16 years later.

Researchers also looked at several variables linked to better health and longevity to see if they were the mechanisms by which positive events could influence mortality, including:

- Positive emotions: assessed by how much participants felt cheerful, optimistic, hopeful in the past week.
- Perceived stress: assessed by questions such as how often in the past month participants had been upset by something unexpected.
- Allostatic load: involved measurement of 24 biological systems (heart, metabolism) that assess risk for later illness.
- Depression: assessed via 20 psychological and physical symptoms of depression reported during the past week, such as being bothered by things that usually aren't bothersome or having a poor appetite.

Results showed that:

- Having more positive events and enjoying them more were both significantly associated with reduced risk of dying.
- Being less depressed was a significant mediator of this association, indicating that emotional experience may be an important pathway through which positive events can affect longevity.

### Can interventions increase positive events?

The researchers point out that this study focused on people who freely chose to engage in positive experiences. The results might not be the same for interventions that have people participate in pre-arranged positive activities. Some research indicates this type of intervention might be detrimental to some vulnerable groups, so the recommended approach would instead be to have participants identify which positive experiences they might want to pursue. Nonetheless, positive events do not likely have as strong an impact on mortality as basic material needs, such as access to health care. A key message is that increasing participation in positive events requires ensuring that everyone has the time, money, and access to freely choose to pursue and relish such experiences.

**Source:** *Podber, N., & Gruenewald, T. L. (2023). Positive life experiences and mortality: Examination of psychobiological pathways. Social Science and Medicine. https://doi.org/10.1016/j.socscimed.2023.116192*

## Are High or Low Protein Diets Better for Healthy Aging?

IOA Affiliate Dudley Lamming (UW-Madison Dept. of Medicine- Endocrinology) has been spearheading research on the health effects of *low* protein diets. Proteins are made up of amino acids that are essential to life and only available in food. His previous research has shown that diets low in the amino acid isoleucine reduced obesity and increased lifespan in some mice. A new study looked at a different strain of mice (UM-HET3) used extensively in aging studies because they better reflect human genetic diversity, thus making the results more generalizable.

Six-month-old mice (equivalent to a 30 year old person) were fed either a diet low in isoleucine (67% less), low in all amino acids, or a balanced control diet, for the rest of their lives. Results showed that the mice fed the low isoleucine diet:

- lost weight, which the males didn't regain
- maintained healthier blood sugar levels
- showed reduced frailty
- lived longer– on average 33% longer for males and 7% for females.
- Males also had less age-related prostate enlargement and less cancer.

Notably, these mice ate more calories than the control mice, but still lost weight because their metabolism increased, enabling them to burn more calories.

These results provide further evidence that low isoleucine diets may promote healthy aging. However, isoleucine is essential in the diet and found in many foods, so it would not be easy to switch everyone to this type of diet. Instead, the long-term focus of this research is to develop drugs that can mimic the benefits of reducing dietary isoleucine.

Given the above results, a second study looked at recent trends promoting *high* protein diets, and why they seem to be beneficial for some. For instance, serious weight lifters sometimes consume protein supplements to encourage the growth of muscles, but do not become fat as a result.

Researchers fed mice either a high or low protein diet and had them pull a cart three times a week that was either empty or had an increasing load of weight (known as resistance training). Results showed that:

- Mice fed *low* protein diets were healthier than the *high* protein mice. They remained leaner and had better blood sugar balance.
- Mice fed *high* protein who pulled the *empty* carts gained fat.
- Mice fed *high* protein who pulled the *increasingly weighted* carts gained muscle and *did not* gain fat. However, their blood sugar levels were *not* protected from the negative effects of high protein diets.

These results may explain why some high protein diets appear to be healthy. They also suggest that sedentary people on a high protein diet may benefit from resistance training exercises.

**Sources:** *Green, C. L., Trautman, M. E., Chaiyakul, K., Jain, R., Alam, Y. H., Babygirija, R., ... Lamming, D. W. (2023). Dietary restriction of isoleucine increases healthspan and lifespan of genetically heterogeneous mice. Cell Metabolism. https://doi.org/10.1016/j.cmet.2023.10.005*

*Trautman, M. E., Braucher, L. N., Elliehausen, C., Zhu, W. G., Zelenovskiy, E., Green, M., ... Lamming, D. W. (2023). Resistance exercise protects mice from protein-induced fat accretion. Elife. https://doi.org/10.7554/elife.91007.2*

## Childhood Maltreatment May Affect Whether We Can Turn to Siblings for Support as We Age

Our siblings can be a significant source of friendship and social support as we face aging-related changes, such as becoming an empty-nester, or contracting a chronic illness. Research has shown that older adults usually report having better relationships with their siblings than younger adults, and this closeness has been associated with better mental health. However, previous research has not taken into account how the experience of childhood maltreatment may affect later life sibling relationships.

This study, co-authored by IOA Affiliate Jooyoung Kong (UW-Madison School of Social

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**IOA Director**
Carol D. Ryff, PhD
*Prof. of Psychology*

**IOA Associate Director**
Neil Binkley, MD
*Prof. of Medicine-Geriatrics*

***Aging News***
**Editing & Layout**
Theresa Berrie
*Communications Specialist*

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Work), used data from over 4700 adults in the Wisconsin Longitudinal Study, which follows high school graduates from 1957. Data from three waves of assessment, when participants were between the ages of 54 and 72, were used to look at:

- Sibling closeness: assessed by asking how close a person felt toward a randomly selected sibling.
- Psychological well-being: measured with 20 questions, such as how much participants felt in charge of their situation and how positive they felt about themselves.
- Childhood maltreatment: assessed by asking to what extent their parents insulted or swore at them, treated them in a way they now considered physical abuse, or how often they knew there was someone who would take care of and protect them.

Results:

- Those who experienced childhood maltreatment reported *lower* sibling closeness at the beginning of the study that also *did not improve* over time for most participants.

- In contrast, sibling closeness was likely to *increase* over time for participants who were *not* maltreated.
- Further, those who reported more sibling closeness over time tended to report *less* of a decline in psychological well-being, whether or not they had a history of maltreatment.

The findings imply that improvement in sibling relations, which most people experience as they grow older, is less likely to happen for those who experienced childhood trauma. It may be that harmful dynamics of early parent-child bonds made it difficult for children to learn how to establish positive relationships. When sibling relationships fail to improve, older adults may be deprived of emotional support that can help them adapt to aging-related changes. **Source:** *Kong, J., Homan, K. J., & Goldberg, J. (2023). Longitudinal trajectories of adult sibling relationship quality and psychological well-being: The effect of childhood maltreatment. Family Relations. https://doi.org/10.1111/fare.12945*

## Prohibition May Have Increased Life Span by Two Years

December 5, 2023 marked the 90th anniversary of the repeal of Prohibition, the period from 1920 to 1933 when it was illegal to sell alcohol in the US. IOA affiliate Jason Fletcher (UW-Madison La Follette School of Public Affairs) co-authored the first study looking at the long-term mortality effects of what most consider a failed public policy.

In the two decades before 1920, bans on alcohol were enacted by various counties and states, resulting in parts of the country becoming "dry" and others staying "wet." This created a real life experiment about the effects of drinking alcohol during pregnancy, during a time when little was known about its ill effects on the fetus.

Recent advances in analytical tools and availability of big data (millions of death records connected to places of birth) made it possible to look at this issue. Social Security Administration death records for men from 1975 to 2005 associated with the 1940 census were linked to county of residence at birth and whether it was wet or dry.

Results found that being born in a dry county was associated with a roughly two-month increase in lifespan. This result may be due to fetal alcohol exposure. Although the researchers did not know which mothers actually drank, they estimated the full effect of being born in a dry county was actually closer to two years.

Given that 14% of women currently drink alcohol during pregnancy (according to the CDC), these results indicate the importance of preventative programs. They also illustrate how we can continue to learn relevant lessons from the past, even if most celebrated the end of the historical policy under study. **Source:** *Noghanibehambari, H., & Fletcher, J. (2023). In utero and childhood exposure to alcohol and old age mortality: Evidence from the Temperance Movement in the US. Economics and Human Biology. https://doi.org/10.1016/j.ehb.2023.101276*


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University of Wisconsin–Madison
2245 Medical Sciences Center
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Madison, WI 53706

**www.aging.wisc.edu**
aging@ssc.wisc.edu
(608) 262-1818

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*"By the time you're 80 years old, you've learned everything. You only have to remember it."* ~ *George Burns*

## Participants Sought for Healthy Aging Study

IOA affiliate Adam Konopka (UW Dept. of Medicine- Geriatrics) and his clinical research program have begun the first National Institutes of Health (NIH) human clinical trials testing whether drugs that inhibit a protein called mTOR can extend healthy aging.

The mTOR inhibitors rapamycin (sirolimus) and a rapamycin analog (everolimus) are FDA approved. They have been shown to extend *lifespan* in multiple species. However, it is not known whether they can extend human *healthspan*, which is the number of years that people live without age associated chronic disease or disability. The Konopka lab will be conducting two clinical trials to begin exploring this question.

They are recruiting adults aged 55-89 years who are without chronic disease (such as diabetes or heart problems). Studies involve several visits to UW Hospital and will allow participants to learn more about their health through assessments of body composition, exercise capacity, clinical labs, and collection of blood and muscle samples. There are no costs involved and participants will be compensated for their time.

For more information contact:
rap.pac@medicine.wisc.edu or
everlast@medicine.wisc.edu or
see clinicaltrials.gov

## Bob Auerbach Wins AARP Award

At the age of 94, retired IOA Affiliate Bob Auerbach has received the 2023 AARP Wisconsin Andrus Award for Community Service. He is affectionately known as the "Piano Man" for volunteering at retirement centers and assisted living facilities, where residents enjoy singing along to the songs from their youth that he plays.

Additionally, Bob has inspired others by turning his 90th birthday into a benefit for the UW Odyssey Project, offering $100,000 of his own money as a donation match. He is offering another match for his 95th birthday later this year. The Odyssey Project was launched by his daughter, Emily Auerbach. It helps families break cycles of generational poverty through accessing higher education, which was part of Bob's own life story. Born in Germany, he escaped the Holocaust and fought to overcome poverty here in the US. After receiving a free college education and government supported graduate study, he later became a UW scientist doing important work on cancer and immunology. He believes that the Odyssey project "is a model for how to help overcome social, racial, religious, and age-associated barriers." He chose the Odyssey Project to receive a $1000 donation as part of his AARP award. See more at: *https://odyssey.wisc.edu/bob/*