

# AGING BIOLOGY UPDATE

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UAB NATHAN SHOCK CENTER OF EXCELLENCE  
IN THE BASIC BIOLOGY OF AGING

## Featured

[What does AI say about taking rapamycin for a longer, healthier life?](#)

[Cell senescence and inflammaging blunts muscle regeneration in young and old mice](#)

[Exposure to female olfactory cues early in life increases longevity in female mice only](#)

## Headline vs study

Headline: [To live longer, pick up the pace for just three minutes a day](#)

Study: [Association of wearable device-measured vigorous intermittent lifestyle physical activity with mortality](#)

Headline: [Aging is driven by unbalanced genes](#)

Study: [Aging is associated with a systemic length-associated transcriptome imbalance](#)

## Contrary or Null Findings

[Deep phenotyping finds little change in aging rate of longevity enhancers in male C57BL/6J mice](#)

[Estimated glomerular filtration rate fails to predict mortality in hospitalized nonagenarians](#)

[Obesity is associated with reduced age-related muscle mass loss in older Korean women but not men](#)

[Health advantage associated with volunteering is larger for older, less healthy Europeans](#)

[Six month randomized clinical trial fails to show significant effect of mindfulness training, exercise, or both on cognitive function in older adults](#)

## Energetics/Nutrition

[Long-lived Sicilians \(90–111 years old\) have distinct fatty acid profiles](#)

[Association between specific gut bacteria and human longevity](#)

[Sex-specific correlations between BMI and cognitive impairment among oldest-old Chinese](#)

Review: [Adipose-muscle crosstalk in age-related metabolic disorders](#)

### **Basic Biology**

[Age, sex, and frailty modify the expression of common reference genes in skeletal muscle from old, individually-housed C57BL/6 mice](#)

[Cardiac-specific SIRT3 KO mice show aged-dependent reduction in metabolic flexibility and proteostasis](#)

[Molecular signature defining exercise adaption in old female mice and partially reprogrammed skeletal muscle](#)

[Unlike males, wild-type and GHR-KO female mice survive as well under mild cold stress as under normal temperature](#)

[Autophagy promotes cell survival by maintaining NAD levels](#)

[Neuron-specific deletion of MnSOD in mice leads to phenotypes associated with multiple sclerosis](#)

[Transcriptomic profiles of the brain correlated with aging and social status in rhesus macaques](#)

[Multigenerational downregulation of insulin/IGF-1 signaling in adulthood improves lineage survival, reproduction, and fitness in \*C. elegans\*](#)

[Acarbose maintains altered redox homeostasis during aging by targeting glucose metabolism in male rat erythrocytes](#)

[Gut microbial DNA and immune checkpoint gene Vsig4/CRIg are antagonistic players in aging mice](#)

Review: [Longevity and macroautophagy in quiescent and senescent cells](#)

Review: [Sedentary behavior and the biological hallmarks of aging in muscle cells](#)

Review: [CISD2 in aging](#)

### **Rigor and Scholarly Debate**

[Opportunity to enhance rigor in aging research](#)

[Interdependency in aging research: no person or mouse is an island](#)

### **Ecology & Evolution**

[Surprise: small-brained whales live longer](#)

[Evolutionary biology of cancer resistance](#)

[Evolution of long life associated with reduced sex differences in gene expression in the seed beetle \*Acanthoscelides obtectus\*](#)

Review: [Obesity in an evolutionary context](#)

[Do sex chromosomes explain sex differences in lifespan across tetrapods?](#)

[Aging-associated pathways conserved from fungi to animals](#)

[Growth arrest, resource allocation and the evolution of longevity](#)

[Senescence, immune function and reproductive trade-offs in female mealworm beetles](#)

### **Novel Organisms/Comparative**

[Physiological mechanisms associated with extreme longevity in mountain pines](#)

[Ocean quahogs exhibit greater mitochondrial H<sub>2</sub>O<sub>2</sub> removal capacity than other clams tested](#)

[Longevity correlated with ratio of tumor-suppressor-- to proto-oncogenes in fish](#)

[Changes during retinal mitochondrial aging in the zebrafish](#)

[Longevity in zoo-housed mangabeys](#)

[Implementation of an aging dog biobank](#)

Protocol: [Molecular sexing of \*Nothobranchius furzeri\* embryos and larvae](#)

### **Epidemiology/Demography**

[American life expectancy is now at its lowest in nearly two decades](#)

[Women with age-associated skewed X chromosome inactivation have more adverse health outcomes in humans](#)

[The 45 and Up Study, a longitudinal study of healthy aging among Australians](#)

[The 3 Ages of Man: what self-reported sleep duration may reveal about the adult life-course](#)

[Socioeconomic and race/ethnic differences in immunosenescence](#)

[Great Depression exposure in utero leaves epigenetic mark on aging](#)

[Severe COVID-19 associated with molecular signatures found in aging human brains](#)

[Old fathers produce shorter-lived sons](#)

[How long do house cats live and what kills them?](#)

[Epigenetic aging faster in men than women in two Mediterranean Blue Zones](#)

[Can metformin be repurposed to reduce the risk of dementia?](#)

### **Clinical**

[Natural Killer cell dysfunction varies with age in severe COVID-19 patients](#)

[Age of examiner positively correlated with cognitive testing outcomes in older adults](#)

[Small 2-month trial of safety and health impact of NMN supplementation](#)

### **Caregiving**

[It's complex: Swedish nurses' attitudes and perceptions toward the oldest-old](#)

[Adult day services improve well-being and sleep among dementia care dyads](#)

[Clinical implications of antipsychotic use in dementia](#)

### **Policy/Ethics**

[Healthspan extension, completeness of life and justice](#)

[Country-level income inequality as a predictor of loneliness](#)

[Ageism is one form of bigotry that never seems to get old](#)

### **Commentary**

[Raising retirement age coming soon](#)

[A global roadmap to seize the opportunities of healthy longevity](#)

Review: [Status of sex as a biological variable in preclinical aging research](#)

[Population aging in China: crisis or opportunity?](#)

### **Odd and Ends**

[Do sexually-satisfied individuals expect to live longer?](#)

Tools: [Gene co-expression database for humans, mice and other model organisms](#)

[Life in the slow lane: Jonathan is 190 years old or thereabouts](#)

[Aging rhesus monkeys stick to friends and family](#)

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Aging Biology Update is brought to you by the UAB Nathan Shock Center and compiled by Kathleen Fischer, Jessica Hoffman, Heather Patterson, and Steven Austad.

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