

AGING BIOLOGY UPDATE

BROUGHT TO YOU BY THE
**UAB NATHAN SHOCK CENTER OF EXCELLENCE
IN THE BASIC BIOLOGY OF AGING**

July 2024 ABU

Featured

[SGLT2 inhibition reduces senescent cell burden and alleviates metabolic dysfunction in young obese mice](#)

[Benefits of calorie restriction not mediated by absolute calorie intake](#)

Basic

[Automated assessment of cardiac dynamics in aging *Drosophila* using machine learning](#)

[Senescent glia link mitochondrial dysfunction and lipid accumulation in flies and human cells](#)

[Sex differences in transcriptional profile of aging mouse microglia](#)

[Selective advantage for hematopoietic stem cells resistant to inflammation and aging transcriptomic signatures](#)

[The double-edged effects of IL-6 in liver](#)

[Principal component-based clinical aging clocks identify signatures of healthy aging and targets for intervention](#)

[Changes in ER membrane microdomains impact protein turnover during aging in yeast](#)

[Low protein diet slows the onset and progression of Alzheimer's-like pathology in a mouse model](#)

[Space Oddities: putative aging and frailty biomarkers altered by short-term spaceflight](#)

[*Drosophila* viral infection shortens life by disrupting intestinal stem cell dynamics](#)

[Developmental versus adult diets have independent effects on reproductive aging in *Drosophila*](#)

[Senescent primary oocytes found even in young mice involved in ovarian aging](#)

[Germ cell removal shortens female killifish lifespan, but improves health without](#)

[affecting longevity in males](#)

[Three-dimensional chromatin reorganization helps impair B lymphopoiesis with age](#)

[Perspective: Neuronal senescence may drive brain aging](#)

[Review: Cellular senescence in normal physiology](#)

[Review: Aging-related changes in the mechanical properties of single cells](#)

Methodology

[Digital telomere measurement \(DTM\) finds long telomeres shorten most with human aging and distinguishes healthy people from those with genetic defects in telomere biology](#)

[Telo-seq resolves bulk, chromosome arm-specific and allele-specific human telomere lengths](#)

Epidemiology/Demography

[Meta-analysis: Low testosterone associated with increased mortality in men](#)

[Healthy lifestyle still important for survival after age 80](#)

[Strategies for reaching socioeconomically disadvantaged populations in clinical trials](#)

[Longitudinal analysis of oldest-old finds lower total cholesterol associated with higher mortality](#)

[UK Biobank samples reveal air pollution is a major environmental contributor to aging](#)

[Age- and metabolism-associated gut microbiome signatures associated with cardiovascular disease risk](#)

[DNA methylation in peripheral blood is associated with renal aging in a Taiwan Biobank study](#)

[Heavy lifetime cannabis use associated with increased cardiovascular mortality in women but not men](#)

[Polygenic risk scores can identify those at risk for frailty](#)

[Progressively increasing incidence of early-onset dementia in World Trade Centers attack responders depending on exposure](#)

[Pain prevalence increasing in older Americans](#)

[Mendelian randomization evidence for the causal effect of mental well-being on healthy aging](#)

[Preprint: Is 70 the new 60? Longitudinal analysis of cohort trends in intrinsic capacity in England and China](#)

[Preprint: Plasma proteomics reveals youthful brains and immune systems are associated with healthspan and longevity](#)

Energetics/Nutrition

[Association of circulating bioenergetic metabolites with healthy human aging](#)

[Lower oxygen use, not cardiac output, associated with the longitudinal decline in peak VO₂ in healthy individuals](#)

[Calorie restriction and its mimetics activate chaperone-mediated autophagy in mice](#)

[Growth hormone-releasing hormone deficiency increases lifespan and metabolic resilience in mice fed high-fat diets beginning in mid-life](#)

[Late-life ketogenic diet associated with improved memory in male mice](#)

[Reproductive history predicts late-life adiposity in women](#)

[Accelerated epigenetic aging six decades after prenatal famine exposure](#)

[Body roundness index \(BRI\) shows U-shaped relation to all-cause mortality in US adults](#)

[Review: Impact of early versus late time-restricted feeding on metabolic health](#)

Clinical

[Validation of a simple clinical health assessment tool \(HAT\)](#)

[Should patients with exceptional longevity be treated for osteoporosis after a hip fracture?](#)

[Higher levels of exercise correlate with higher HDL levels in older women, but not men](#)

[NMN and urolithin A supplements often do not contain the chemicals stated on the label](#)

[Loneliness increases with age: nine longitudinal studies](#)

[Replacing nurses with lower trained and paid staff is hazardous](#)

[Review: Top weapons for addressing skin aging](#)

Evolution/Comparative Biology

[What can we learn from long-lived species that live on very high sugar diets?](#)

[Epigenetic predictors of lifespan and other life-history traits across mammals](#)

[Stronger connections between maternal survival and offspring fitness lead to selection for longer lives and slower reproduction in mammals](#)

[Most aging-associated gene families are older than many other gene families](#)

[Evolutionary analysis of multiple insect species leads to identification of a new longevity gene](#)

[Ecological disturbance reveals increased social tolerance can enhance survival](#)

Novel Organisms

[Calorie \(i.e. sunlight\) restriction extends lifespan in a clonal plant](#)

[Kangaroo teeth grow forever – and keep a record of their owner's age and sex](#)

[Coevolution of longevity and female germline maintenance in a seed beetle](#)

Contrary or Null Findings

[RCT: Krill oil supplements fail to improve knee osteoarthritis pain](#)

[Deterioration of neuromuscular function and motor unit characteristics did not differ between sexes, but function was consistently greater in men](#)

[MRI-based Brain Age has limited utility as a biomarker for fluid cognition in older individuals](#)

[Education level independent of parental education determines multimorbidity risk among older European adults](#)

Caregiving

[Home health aides need support as they provide essential patient care](#)

[The high cost of home health care](#)

[Financial consequences of increasing costs for elder care](#)

[Stress and loneliness in family caregivers of elders with cognitive impairment](#)

Policy/Opinion

[Reflections on life extension. Where are we? Where are we going?](#)

[Women's biology matters](#)

[Preventing falls in older persons—a long road ahead](#)

[What happens when states seek to recoup Medicaid costs](#)

Odds and Ends

[Gertrude finds a mate and lays an egg, at 70](#)

[Learning to love an unraveling mind](#)

[My Mom had Alzheimer's. Now I do too. I learned from her not to despair](#)

Announcements

[Diversity in research on aging: a new series](#)

Aging Biology Update is brought to you by the UAB Nathan Shock Center and compiled by Kathleen Fischer and Steven Austad. [Subscribe to this newsletter.](#)



NATHAN SHOCK CENTERS
OF EXCELLENCE IN THE
BASIC BIOLOGY OF AGING



