

# AGING BIOLOGY UPDATE

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IN THE BASIC BIOLOGY OF AGING

## **August ABU 2024**

### **Featured**

[Genetic or pharmacologic inhibition of IL-11 in middle age increases mouse health- and life-span](#)

[Six months of high intensity interval training but not other exercise regimes improve learning in healthy older adults](#)

### **Basic Biology**

[TERT activation targets DNA methylation and multiple aging hallmarks](#)

[Methyltransferase complex coordinates its enzymatic activity-dependent and independent functions to regulate human cellular senescence \*in vitro\*](#)

[Transcriptional drift in aging cells](#)

[Targeting senescent cells with a polyphenol-rich natural extract improves longevity and healthspan in mice](#)

[Dissolution of cell-senescence-linked aggregated glycolytic enzyme improves mouse health and survival](#)

[Overexpression of Nur77 improves ovarian function in aging mice](#)

[Oral viral infection leads to intestinal stem-cell proliferation and a decrease in \*Drosophila\* lifespan](#)

[Conditional inhibition of Eip75B mediates the effects of mating and mifepristone on female \*Drosophila\* midgut hypertrophy, egg production, and lifespan](#)

[Transcriptional changes during aging restricted by gene body DNA hydroxymethylation](#)

[Combination of niacinamide and hyaluronic acid improves skin aging](#)

[Polyphenol-rich plant extract improves longevity and healthspan in mice](#)

Preprint: [Long-term nicotinamide mononucleotide treatment has sex-dependent effects on lifespan and healthspan in mice](#)

## **Clinical**

[Exercise intervention outperforms multifactorial fall prevention strategy](#)

[Causal link between skin microbiota and facial aging](#)

[Polypharmacy Nearly Doubled in 20 Years Among Older Adults in US](#)

[Longitudinal study finds frailty increases faster in people with fewer than 20 remaining teeth](#)

Position paper: [Executive summary on the conceptual definition of sarcopenia](#)

Review: [Causes and risk factors of Vitamin B12 deficiency over the lifespan](#)

Review: [Does urolithin target human aging?](#)

Review: [Factors affecting age at menopause and their relationship with ovarian reserve](#)

Review: [Dysphagia in aging populations](#)

## **Epidemiology/Demography**

[Meta-analysis: Intrinsic capacity is inversely associated with functional decline and mortality risk in older adults](#)

[PRC2-AgeIndex is a universal biomarker of aging and rejuvenation?](#)

[Why children born in November live longer](#)

[The resilience of older centenarians to COVID-19 associated with 100-year-old antibodies to 1918 flu](#)

[Early menarche and/or menopause and higher parity linked to greater visceral and subcutaneous adiposity in postmenopausal women](#)

[Cross-platform proteomics signatures of extreme old age](#)

[Higher residential levels of traffic-related air pollutants associated with greater risks of lost independence in the US](#)

[Smoking associated with cognitive decline in older adults](#)

[Gut mycobiome \(gut fungi\) signatures in long-lived humans](#)

[Dogs, but not other pets, reduced loneliness among German oldest old during Covid-19](#)

[Older women more vulnerable to heat stress than age-matched men](#)

[Older women experience more potentially inappropriate prescribing and adverse drug reactions during hospitalization](#)

[Excess deaths and loss of life expectancy attributed to long-term NO2 exposure](#)

[19th century Estonian mothers of twins had higher old-age survival than mothers of singletons](#)

[Inbreeding has a detrimental effect on longevity in men, but not women in a 19th century Swedish population](#)

### **Energy/Nutrition**

[Obesity and risk of diseases associated with cellular aging](#)

[Food density inversely related to longevity and directly related to fecundity in female \*Drosophila\*](#)

[Interleukin-10 ameliorates endoplasmic reticulum stress via exercise in older male mice](#)

[Physical inactivity increased globally over past two decades for people over age 60](#)

[Skin fibroblasts from sporadic Alzheimer's patients show signs of mitochondrial and lysosomal dysfunction](#)

[Aging alone and aging with obesity increase white adipose tissue inflammation in male mice](#)

[Some circulating bioenergetic metabolites associated with healthy human aging](#)

RCT: [Short-term switch to whole foods diet improves health markers in adults age 65+](#)

[Poor appetite's paradoxical effects on dietary intake in community-dwelling older adults](#)

Review: [Impact of diet and lifestyle on the gut microbiome to promote healthy aging](#)

### **Contrary/Null Results**

[Multivitamin use not associated with mortality benefit in large prospective cohort studies](#)

[No association found between vascular aging and sarcopenia](#)

[Phase II Intermittent senolytic treatment failed to reduce bone resorption in postmenopausal women](#)

## **Evolution/Comparative Biology**

[A somatic genetic clock for clonal species](#)

Review: [Understanding seasonal telomere length dynamics in hibernating species](#)

Review: [Selectively advantageous instability \(SAI\): implications for evolution and aging](#)

Preprint: [Selection for early reproduction leads to accelerated aging and metabolic remodeling in fly populations](#)

## **Novel Organisms**

[Transgenic mouse with bat gene shows reduced aging-related inflammation](#)

[In dogs, methylation-related markers reflecting biological age are rare and do not colocalize between datasets](#)

[Prion-like protein aggregates in aging African turquoise killifish brains](#)

[Gut microbiome diversity and composition do not change with age in Seychelles warblers](#)

[No evidence that sex-naive prairie voles age differently from pair-bonded animals](#)

[Offspring nursing and maternal longevity positively correlated in a maternal care spider](#)

[Analysis of bat versus human fibroblasts reveals altered central metabolism](#)

[Adult telomere length is positively correlated with short-term survival, independent of age, in an insular population of house sparrows](#)

[Longevity of termite kings and queens is accompanied by extranuclear localization of telomerase](#)

Review: [Selectively advantageous instability \(SAI\): implications for evolution and aging](#)

Preprint: [Big brown bats show resistance to age-related hearing loss](#)

## **Scholarly Debate**

[Reduced oxidative capacity of skeletal muscle mitochondria is a fundamental consequence of aging](#)

[Reduced oxidative capacity of skeletal muscle mitochondria is NOT a fundamental consequence of aging](#)

## Resources & Methodology

Resource: [Guide to using Bloomington \*Drosophila\* Stock Center and FlyBase for aging research](#)

Methodology: [Issues in the use of housekeeping proteins in Western blot analysis](#)

Methodology: [Validity of predictive equations for total energy expenditure against doubly labeled water](#)

Methodology: [Do we need to revise classification of physical activity intensity in older adults?](#)

[Methodological choices can lead to vastly different estimates of the economic burden of disease](#)

## Policy/Opinion

[Senescence-associated secretory phenotype, a therapeutic target?](#)

[Aging as a process analogous to tumorigenesis](#)

[All the Alzheimer's Research We Didn't Do](#)

[Strengthspan is distinct from healthspan](#)

## Announcements

[The 11th Aging Research and Drug Discovery Meeting \(ARDD 2024\) and XPrize Healthspan Team Summit. Sept 26-30, Copenhagen, Denmark](#)  
(<https://agingpharma.org/> )

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