

AGING BIOLOGY UPDATE

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

Featured

[US life expectancy predicted to decline 1.13 years in 2020 due to COVID-19](#)

[Actual CDC data: US life expectancy declined 1 year in the first half of 2020](#)

Headline vs study

Headline: [Fossil fuel air pollution causes almost 1 in 5 deaths globally each year](#)

Study: [Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem](#)

Contrary or Null Findings

[Metformin decreases median lifespan in older female mice](#)

[No effect of maternal age on offspring body condition in roe deer](#)

[Chronological age predicts mortality better than multiple summary measures of biological age](#)

[Canine cognitive dysfunction not associated with plasma A-Beta levels](#)

Energetics/Nutrition

[Review: Mediterranean diet and hallmarks of aging](#)

[Review: Functional nutrients to improve frailty syndrome](#)

[Review: Caloric restriction as a treatment for inflammatory diseases](#)

[Review: Molecular mechanisms of obesity and aging](#)

[Review: Pasteurized non-fermented, but not fermented, milk increases mTOR activity](#)

Basic Biology

[Centenarians develop aging protein signatures at later ages than other humans](#)

[Gut microbiome composition predicts survival in humans](#)

[More human gut microbiome: Microbiome differs significantly between healthy and unhealthy long-lived people](#)

[Neurofilament light chain is associated with mortality in the oldest old and mice](#)

[Mutations in different parts of the insulin receptor gene differentially modulate aging and reproduction in fruit flies](#)

[Inhibition of 15-PGDH improves muscle mass and function in old mice of unknown sex](#)

[Correlations of microbiome and metabolome with age in male mice](#)

[Neuronal cell-type specific roles of Forkhead transcription factors in Drosophila health and longevity](#)

[Brain pH decreases with age and Alzheimer's disease](#)

[Nicotinamide supplementation improves heart function in aged and diseased rats and mice](#)

[Sodium rutin extends lifespan and improves health in male mice](#)

[A machine learning framework to identify signatures of human frailty](#)

[Rapamycin treatment reduces senescence of rat tendon stem cells](#)

[Insights into epithelial cell senescence from human oral keratinocytes](#)

[New resource for design of functional longitudinal studies in C57BL/6 mice](#)

[Review: Hallmarks of aging and immunosenescence](#)

[Review: Aging biomarkers and the brain](#)

[Review: TOR signaling in cardiac aging and heart failure](#)

[Review: Aging and the deterioration of nuclear morphology](#)

[Review: Splicing alterations in healthy aging and disease](#)

[Review: Regulation of wound healing response during aging](#)

[Review: Oxygen sensing and age-related phenotypes](#)

Ecology & Evolution

[Longevity genes are under positive selection in capuchin monkeys](#)

[Experimentally decreasing body size in hydra leads to reduced fecundity but increased survival](#)

[Increased paternal age reduces offspring sperm production in the African houbara bustard](#)

[Costs of reproduction in female field crickets](#)

[Transposable element insertions are higher, but expression is lower in fruit fly lines selected for longevity](#)

Novel Organisms/ Comparative

[Cognitive performance of aged rhesus macaques](#)

[Canine cognitive dysfunction associated with reduced hippocampal volume in older dogs](#)

[Declines in oocyte and embryonic metabolic activity with increasing maternal age in horses](#)

[Meta-analysis: Tissue specific aging of the transcriptome across species](#)

[Review: Parasitic worms as anti-inflammaging therapy?](#)

[Review: Killifish as models of age-related neurodegeneration](#)

[Review: Aging, stress, and senescence in plants](#)

Epidemiology/Demography

[Climate change is predicted to cause 5.5% of deaths in China by the 2090s](#)

[Meta-analysis: Mortality is higher in individuals with vision impairment as compared to mild vision impairment or normal vision](#)

[Review: Demographic perspectives on the rise of longevity](#)

COVID-19 and Aging

[Age and frailty status are independently associated with COVID-19 mortality](#)

[COVID-19, biogerontology, and the aging of humanity](#)

[medRxiv: COVID-19 hospitalization rates soar with age, plummet with thymic T-cell production](#)

[Cardiovascular risk factors and COVID-19 outcomes](#)

[Dynamics of age and COVID-19 mortality across countries](#)

[COVID-19 mortality as a fingerprint of biological age](#)

Clinical

[Using different definitions of sarcopenic obesity can change the prevalence from 0-85%](#)

[Review: Genetic insights into Alzheimer's disease](#)

[Review: Testosterone replacement: should you or shouldn't you?](#)

Care-giving

[Caregivers of dementia patients report increased burden during COVID-19 quarantine](#)

[What's important when caring for a loved one? Results of an online survey of informal caregivers](#)

Policy/Ethics

[More accurate forecasting of mortality to better inform healthcare policies](#)

[Effects of public support policies on caregiver health](#)

Commentary

[The future of healthy aging: translation of geroscience discoveries to public health practice](#)

[Longevity pharmacology comes of age](#)

[Use machine learning to improve omics data analysis in aging research](#)

Odd and Ends

[Examining muscle regeneration in zebrafish models of age-related muscle wasting](#)

[bioRxiv: HumGut: Novel resource for human prokaryotic genomes](#)

Aging Biology Update is brought to you by the UAB Nathan Shock Center and compiled by Jessica Hoffman, Heather Patterson, Joseph Palmer, Melissa Harris, Anna Thalacker-Mercer, and Steven Austad. [Subscribe to this newsletter.](#)



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