

AGING BIOLOGY UPDATE

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

Featured

[A metabolomic profile of biological aging using data from the UK Biobank](#)

[Metformin decelerates aging clock in male cynomolgus monkeys](#)

Basic Biology

[Increasing maternal age increases selection against inherited mitochondrial genome mutations in mice](#)

[A microRNA that drives early cell senescence](#)

[A robust inference framework shows two distinct processes confounding current epigenetic clocks](#)

[Young mouse follicles rejuvenate aged oocytes](#)

[Spermidine surge required for rapamycin-induced autophagy and longevity](#)

[Restoration of LAMP2A expression in old mice improves immune function](#)

[Single housing of juvenile killifish accelerates early-stage growth *and* extends adult life](#)

Resource: [Induced pluripotent stem cells from centenarians and their offspring](#)

Review: [Early life interventions, aging and longevity](#)

Review: [The role of the hematopoietic stem cell niche in development and aging](#)

Review: [Dysfunctional mitochondria and melatonin in age-related neurodegeneration](#)

Review: [ALS as a model of sarcopenia?](#)

Preprint: [Common DNA sequence variation influences epigenetic aging in African populations](#)

Clinical

[Compared to continued medical management, dialysis in older adults led to fewer at-home days but longer survival](#)

[Socially disadvantaged status associated with greater denial of insurance claims for preventative care](#)

[Resistance exercise training improves outcomes of hospitalization in older adults with mobility limitations](#)

[Plasma markers of neurodegeneration, latent cognitive abilities and physical activity in healthy aging](#)

[Anticoagulant treatment in older people with atrial fibrillation reduces mortality](#)

[Surgeries are cumulatively associated with cognitive decline and neurodegeneration](#)

RCT: [Not by medication alone: quality of life and pain in people living in care homes](#)

Review: [Chronic opioid use accelerates aging](#)

Review: [Efficacy and safety of antidepressants for pain in older adults is unclear](#)

Review: [Strategies to optimize vaccine immunogenicity in older people](#)

Epidemiology/Demography

[Discovery of germline variants associated with longer reproductive life but increased cancer risk](#)

[Archeological evaluation of 500 skeletal remains suggests higher female than male mortality in Milan from Roman until modern times](#)

[White matter resists structural change in 80+ people with preserved "young" memory](#)

[Heavy metal exposures associated with reproductive timing and lifespan of U.S. women](#)

[Individuals who predominantly engaged in sitting at work exhibited a higher risk of all-cause mortality and cardiovascular disease compared with those who predominantly did not sit](#)

[Mind the gap: The gap between care needed by older adults and care received will increase in the future](#)

[Multimorbidity and frailty in adult UK hospital admissions increased over last 15 years](#)

[Different epigenetic "clocks" are variably successful at predicting age of healthy subjects from global populations](#)

[Shocking: healthy lifestyle increases Chinese 80-year-olds' odds of becoming centenarians](#)

[Women experiencing premature menopause still had lower risks of all-cause mortality than men](#)

Review: [The role of frailty in hypertension management has yet to be addressed](#)

Energy/Nutrition

[Obesity increases hallmarks-of-aging-related disease in UK and Finland databases](#)

[When do sons shorter mothers' lifespan?](#)

[Intensity of physical activity rather than the quantity appears to matter most for longevity](#)

[Lifespan effects of calorie and protein restriction in mice are consistent with predicted impacts on entropy generation](#)

[Should ethnicity be considered in BMI cutoffs for categorizing obesity severity?](#)

[Mildly overweight nonagenarians have extended lifespans in the Sardinian Blue Zone](#)

[A bio-thermodynamic approach quantifying rates of entropy generation to predict mouse lifespan exposed to variable levels of calorie and protein restriction](#)

[Meta-analysis finds reduced mortality when replacing 5% of dietary carbohydrates with specific fats](#)

Review: [Coffee consumption variably affects the risk of different cancer types](#)

Contrary or Null Results

[Heart rate variability is not associated with age in healthy adults](#)

[DNA methylation aging does not exhibit a statistically significant causal effect on menopausal age](#)

Evolution/Comparative Biology

[Comparative genomics of aging in closely related long- and short-lived fishes](#)

[Equations linking methylation dynamics to maximum lifespan across mammals](#)

[Differentially expressed genes associated with annual, semi-annual, and non-annual killifishes](#)

[Antler size in red deer: declining selection and increasing genetic variance with age, but little senescence](#)

[Germline mutation rate predicts cancer mortality across 37 vertebrate species](#)

[Reproductive endocrinology and aging in human males: An evolutionary perspective](#)

[A theory of mortality patterns across the primate lineage](#)

Novel Organisms

[Spatial cognitive ability is associated with longevity in Mountain Chickadees](#)

[Sex-specific social aging in wild African lions](#)

[Cumulative adversity associated with reduced longevity and pup survival in wild yellow-bellied marmots](#)

Review: [Mechanisms of tree longevity](#)

Preprint: [Long-lived Greenland shark \(*Somniosus microcephalus*\) genome sequenced](#)

Caregiving

[Family need drives the trajectories of informal caregiving in later life](#)

Review: [Poor health literacy is associated with sociodemographic, care-related, quality of life-related, and cognitive factors](#)

Policy/Ethics

[Pandemic preparedness: 20-year-old stockpiled vaccines cross-react with current strains of A\(H5N1\) influenza](#)

[Medicare cuts cost of 10 common drugs covered by Part D](#)

Commentary

[Defining an aging-related pathology, disease or syndrome: International Consensus Statement](#)

[Consequences of declining faith in science and medicine in the United States](#)

[Challenges and recommendations for the translation of biomarkers of aging](#)

[Obesity drugs—a silver bullet for everything?](#)

[Could gene length be a critical factor in the aging genome?](#)

[Rethinking multivitamin supplements](#)

[What defines a healthy gut microbiome?](#)

Opinion: [How frailty might influence care planning](#)

Odd and Ends

[Interventions Testing Program re-funded and ready to find more mouse longevity drugs](#)

[Blue Zones: a review of the Netflix Documentary](#)

[Human heart organoid culture shows signs of aging after a month in space but recovery on return from space](#)

Special Issue: [Complex systems dynamics and the aging process](#)

Headline vs Study

Headline: [Study Reveals Superfood That May Reduce Alzheimer's Risk, Promote Longevity](#)

Study: [Phytoene and phytoene-rich microalgae extracts extend life and reduce A \$\beta\$ toxicity in worms](#)

Headline: [Estrogen: Women's Secret Recipe To Longevity](#)

Study: [Estrogen replacement therapy induces antioxidant and several longevity-related genes in blood from women after medically induced menopause](#)

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.](#)



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