Featured
Ant workers infected with tapeworms live longer than uninfected nest-mates

Whole-genome sequencing of semi-supercentenarians identifies efficient DNA repair alleles

Headline vs study
Headline: Scientists just moved a step closer to reversing aging in humans
Study: The central role of DNA damage in the aging process

Headline: A single protein might be key to slowing the aging process
Study: Vesicular glutamate transporter modulates sex differences in dopamine neuron vulnerability to age-related neurodegeneration

Headline: Aging reversed: Study shows how you can become 3 years 'younger' in just 8 weeks!
Study: Potential reversal of epigenetic age using a diet and lifestyle intervention: A pilot randomized clinical trial

Contrary or Null Findings
Rapamycin does not improve induced right heart failure in old mice

mTOR inhibitors fail to reduce respiratory infections in older humans in a Phase 3 clinical trial

Energetics/Nutrition
Unrelated, but not related, group-housed CB6F1 males show increased aggression in a short-term caloric restriction study

Mediterranean diet is associated with reduced brain atrophy and improved memory in older adults

Fasting in C. elegans has both positive and negative transgenerational effects on mortality and fecundity

Increased dementia risk associated with overweight and obese young adults independent of BMI in later life

Intranasal oxytocin improves lean muscle mass and lowers cholesterol in older adults
with sarcopenic obesity

Review: Benefits of caloric restriction beyond weight loss

Review: Cross talk between dietary restriction and circadian rhythms for healthy aging

Review: Effects of exercise on cellular and tissue aging

Review: Diets targeting the gut microbiome to promote healthspan

Review: Sex differences, aging, and brown adipose tissue

Basic Biology
Adiponectin overexpression improves metabolic health with age in male mice

Correlations of longevity genetic variations and the proteome

Nicotinamide riboside improves metabolic function of aged hematopoietic stem cells

An aged immune system can drive mouse cell senescence and aging in other organs

Slower cognitive decline is associated with familial longevity

Common genetic associations between age-related diseases

A calcineurin inhibitor protects against age-associated microstructural changes in the beagle brain

Review: Functional conservation in genes and pathways linking aging and immunity

Review: mTOR in Alzheimer’s disease and its earlier stages

Review: Sex differences in human biological aging

Review: Aging and infection response in Drosophila

Review: Urolithin A on health, disease, and aging

Review: Circular RNAs and aging

Review: Hallmarks of T cell aging

Ecology & Evolution
Viral load, not food availability or temperature, predicts yellowjacket wasp colony survival

Linking maximum lifespan to aging rates with computer simulation in wild birds

A simulation model of the effects of predation on the evolution of aging rates

Aging as a consequence of selection to reduce the environmental risk of dying

Brown-banded bamboo sharks can live up to 14 years

Long telomeres are associated with increased reproductive output in female but not male wild house sparrows
Review: Mating and longevity in worms

**Novel Organisms/ Comparative**

*Ocular health as a marker of age-related neurodegeneration in the degu, a colony-living rodent*

*Neuropathology of aging in house cats*

*Rhesus monkeys as a translational model of late onset Alzheimer’s disease*

*The Nile grass rat as a model of diabetic cataracts*

*Metabolomic biomarkers of aging in laying hens*

*No signs of transcriptional aging in old ant queens compared to young*

*Long-lived termite queens display sudden transcriptional changes shortly before death*

*Proteomic sex differences in spontaneous osteoarthritis in very young guinea pigs*

*Longevity measures for seven species of macrourid fish*

*Single nucleus transcriptomic profile finds neural TAPC and microglia most affected by age in the hippocampus of cynomolgus monkeys*

*Social aging in Barbary macaques*

*Perspective: Identifying aging categories of pet dogs*

*Review: The marmoset as a model of neurocognitive aging*

**Epidemiology/Demography**

*Agricultural related poor air quality is linked to thousands of deaths in the United States*

*Poor sleep behaviors are associated with shortened healthspan*

*Greater temperature changes associated with more hospitalizations for cardiovascular diseases in those 75 and older*

*Alzheimer’s mortality rates are highest in the United States on the Alabama, Tennessee, Georgia border*

*Review: Socioeconomic position and healthy aging*

**COVID-19 and aging**

*Over 30% of hospitalized COVID-19 patients develop delirium*

*The impact of COVID-19 on global population aging*

*Low socioeconomic status is associated with increased mortality due to COVID-19 in Santiago, Chile*

**Clinical**

*Women are more likely to be prescribed potentially inappropriate medications than*
men

Metformin use is associated with slower emphysema progression

Review: Aging and inflammatory bowel disease: A new challenge for clinicians and researchers

Review: Aging, the immune system, and the human female genital tract

Review: Age-related macular degeneration

Care-giving
Caring for the caregivers of dementia patients

Wellbeing of caregivers declines at similar rates across socioeconomic levels, but starts higher for wealthy caregivers

Mental health among spousal caregivers of older adults

Policy/Ethics
Robots may improve health in low-skill workers

Long-term care market trend and patterns of caregiving in the United States

Commentary
Uncoupling aging from chronological time

Odd and Ends
Challenges in dog brain biobanking

A conversation with Judith Campisi

How bowhead whales live for 200 years

Aging Biology Update is brought to you by the UAB Nathan Shock Center and compiled by Jessica Hoffman, Heather Patterson, Joseph Palmer, and Steven Austad. Subscribe to this newsletter.