Featured
Changes in total daily energy expenditure across the human lifespan

Increased VEGF signaling lengthens mouse life

Upcoming conference of interest:
2nd Euro Geroscience Conference in Toulouse, France

Headline vs study
Headline: Doctors claim to have discovered how to reverse cell aging
Study: Peripheral B-cells repress B-cell regeneration in aging through TNFalpha/IGFBP-I/IGF1 immune-endocrine axis

Contrary or Null Findings
No association with optimism and risk of mortality in older adults

No association of age at menarche or menopause on risk of Alzheimer’s disease

Rapamycin supplementation negatively effects bone health in adult mice

IGF-I knockdown leads to impaired cerebrovascular health in mice

Energetics/Nutrition
Aging and exercise: does exercise increase daily energy expenditure?

High dietary flavonoid intake correlates with decreased risk of cognitive decline

Extreme obesity but longer life and protection from metabolic disease in FBF1 knockout mice on high fat diet

Effects of time-restricted feeding of a Western diet are both age and sex dependent in C57BL/6 mice

Low protein intake improves wound healing in young adult male mice

Metabolic rates are similar between worker and long-lived queen honeybees, but queens have different fatty acid membrane compositions
Pickleball as an intervention to improve physical function and cognition in older adults

Higher mortality risk from nutritional frailty compared with physical or cognitive frailty

Diets associated with dilated cardiomyopathy in dogs

Review: White adipose dysfunction in obesity and aging

Review: Nutrition and frailty

**Basic Biology**

How many mice will I need?

Heritability of nine common diseases decreases with age

Age-related changes in proteome ubiquitination and longevity in worms

Enrichment of novel bile acid biosynthetic pathways in the microbiome of centenarians

Fecal transplants from young to old male mice improves immune function and cognition

Higher circulating omega-3 fatty acids associate with improved blood brain barrier function in older adults

Extracellular matrix homeostasis as a marker of lifespan extending compounds in worms

Pre-weaning antibiotic exposure shortens life in male mice depending on later life microbiome

Main genetic variants associated with human menopause also affect reproductive aging in mice

Describing sex and age effects on the circulating immunocyte transcriptome

Changes in gait signatures as markers of end of life in mice

Genetic factors associated with frailty linked to expression in the brain

Review: The degree of frailty as a measure of health

Review: Procaine less bogus than thought?

Review: Retrotransposable elements in aging

Review: Endoplasmic reticulum stress response in cellular aging and Alzheimer’s

Review: Autophagy in human disease

Review: Hallmarks of lens aging

Review: Sex differences in frailty

Review: The role of cellular senescence in type II diabetes
Review: tRNA-derived fragments in aging

Review: Maintaining proteostasis under mechanical stress

Review: Healthy aging and the blood-brain barrier

Ecology & Evolution
Is circulating insulin-like growth factor 1 concentration antagonistically pleiotropic?

New evolutionary convergence rate analysis program discovers novel gene sets evolving with longevity

Genetic variation effects on longevity costs of reproduction

Review: Cancer evolution: Darwin and beyond

Novel Organisms/Comparative
Larger speckled cockroaches are longer lived than smaller individuals

Changes in the microbiome with age in yaks

Amyloid-beta levels in the companion dog brain correlate with canine cognitive dysfunction scores

Evidence of immunosenescence and inflammaging in a natural population of great tits

Episodic-like memory is preserved with age in cuttlefish

Age-related changes in the microbiome of companion dogs

Big dogs die sooner and die from cancer

Is there tree senescence? The fecundity evidence

New book: The extraordinary biology of the naked mole rat

The killifish visual system as a model to study brain aging and rejuvenation

Review: Fish models of human disease

Review: Telomeres and bat longevity

Review: Aging in non-model vertebrate animals

Epidemiology/Demography
50% of Canadian older adults may be taking potentially inappropriate medications

Widening of longevity gap between high and low education groups

Clinical
Older cancer survivors have reduced physical function compared to those without a history of cancer

Blood markers of aging rate predict mortality in COVID-19 patients better than chronological age
Policy/Ethics
The economic benefits of targeting aging

Aging in the 21st century
Regulatory changes needed to maintain stability in the life insurance sector
Mental health services for autistic individuals across the lifespan

Commentary
Centenarians may hold a key to continued rise of human longevity
Potential for companion animal aging research in China
Learning from centenarians who survive COVID-19
Yoga for healthy aging
Geroscience approaches to women’s health in an aging world

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.