

Physical Changes

Appearance

Body Build

Mobility

Vital Body Functions

Bodily Control Systems

Nervous System

Sensation and Perception

Appearance

Skin

Reduction of: oils, elasticity, pigment, thickness
wrinkles

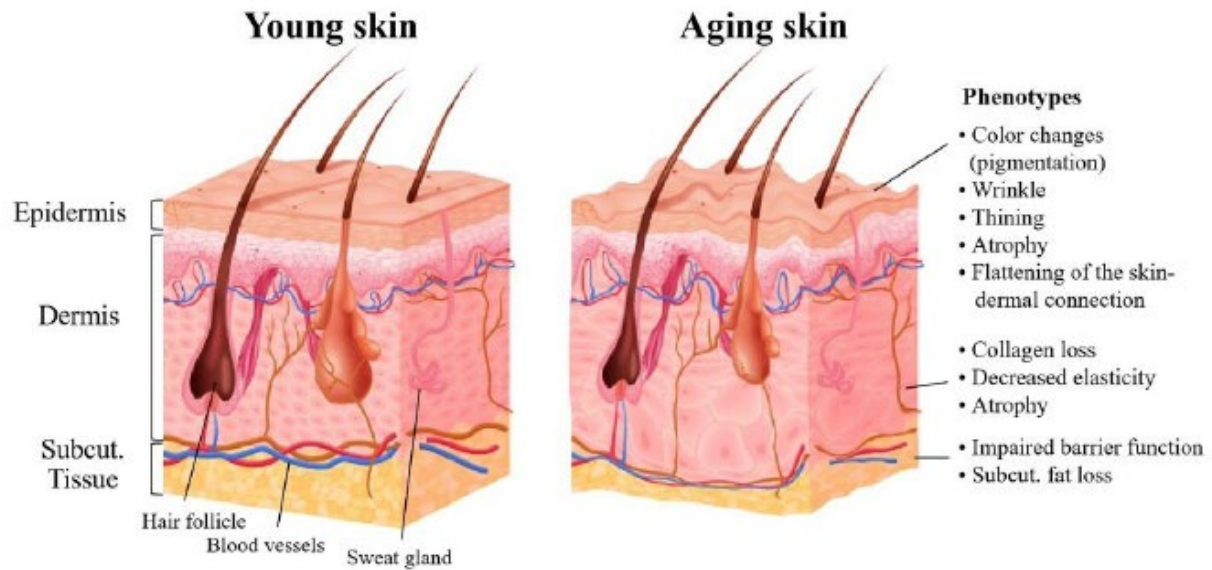


Figure 1. Skin structure and aging phenotypes.

Jin, S., Li, K., Zong, X., Eun, S., Morimoto, N., & Guo, S. (2023). Hallmarks of skin aging: update. *Aging and Disease*, 14(6), 2167.

Appearance

Hair

Loss, graying color (loss of melanin)

Considerable variation across individuals

Jin, S., Li, K., Zong, X., Eun, S., Morimoto, N., & Guo, S. (2023). Hallmarks of skin aging: update. *Aging and Disease*, 14(6), 2167.

Body Build

Decrease in Height

Bone loss in vertebrae

Increase in Weight

Common to gain in 20s until their mid-50s

Body Build

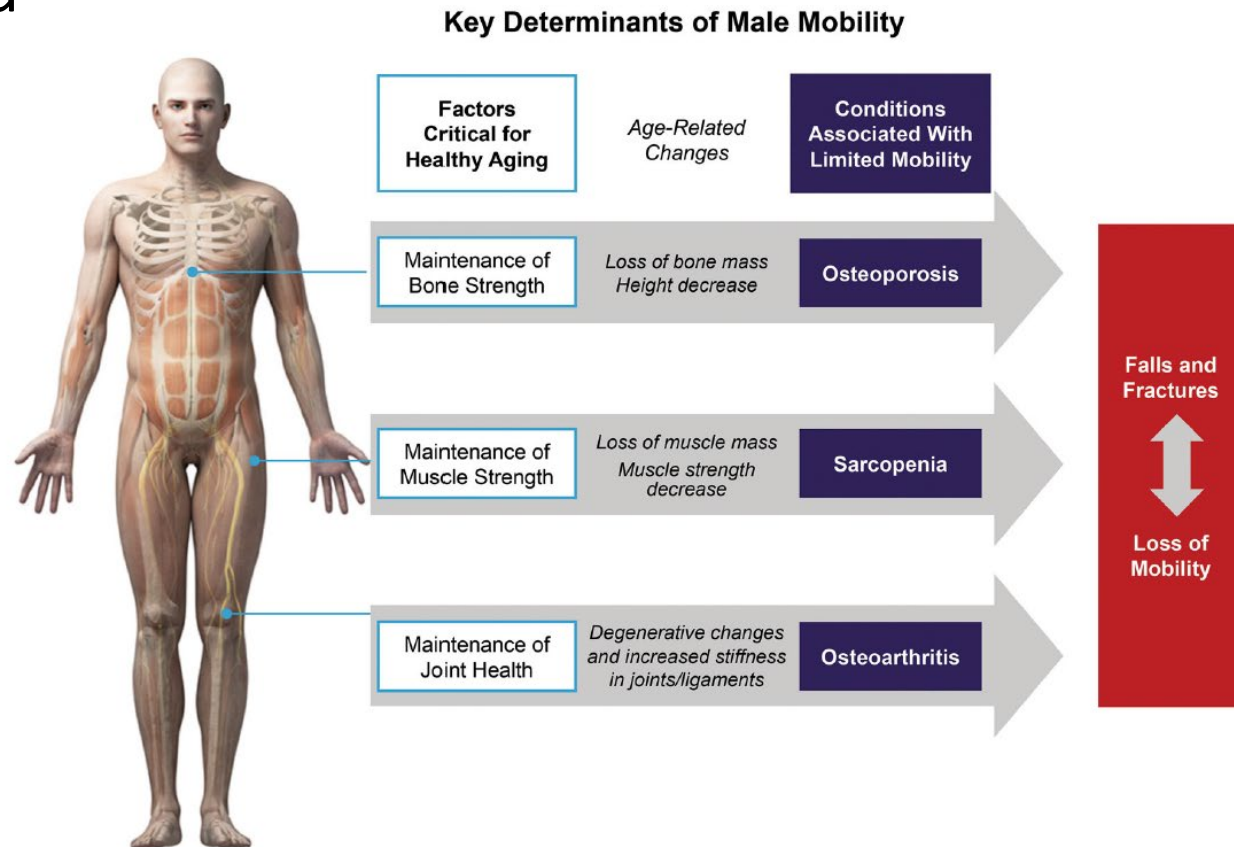
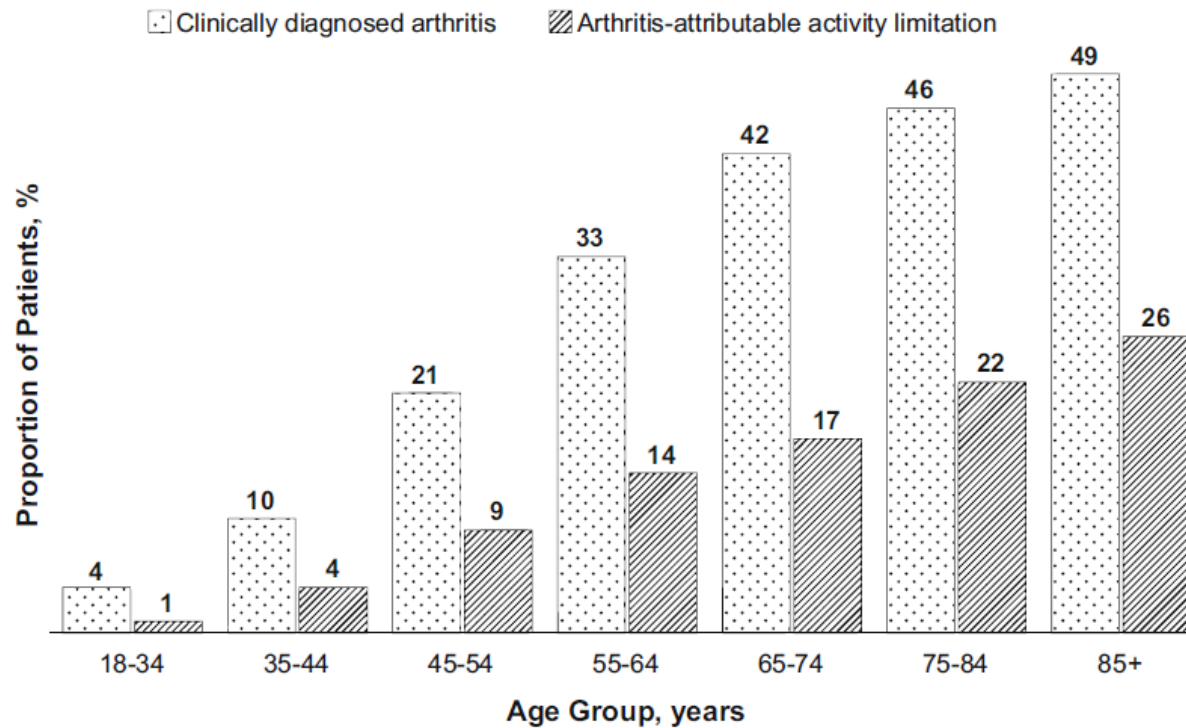


Fig. 1 Key determinants of male mobility [4–7]

Ebeling, P. R., Cicuttini, F., Scott, D., & Jones, G. (2019). Promoting mobility and healthy aging in men: a narrative review. *Osteoporosis International*, 30(10), 1911-1922.

Body Build



Ebeling, P. R., Cicuttini, F., Scott, D., & Jones, G. (2019). Promoting mobility and healthy aging in men: a narrative review. *Osteoporosis International*, 30(10), 1911-1922.

Body Build

Sex differences in incidence of arthritis

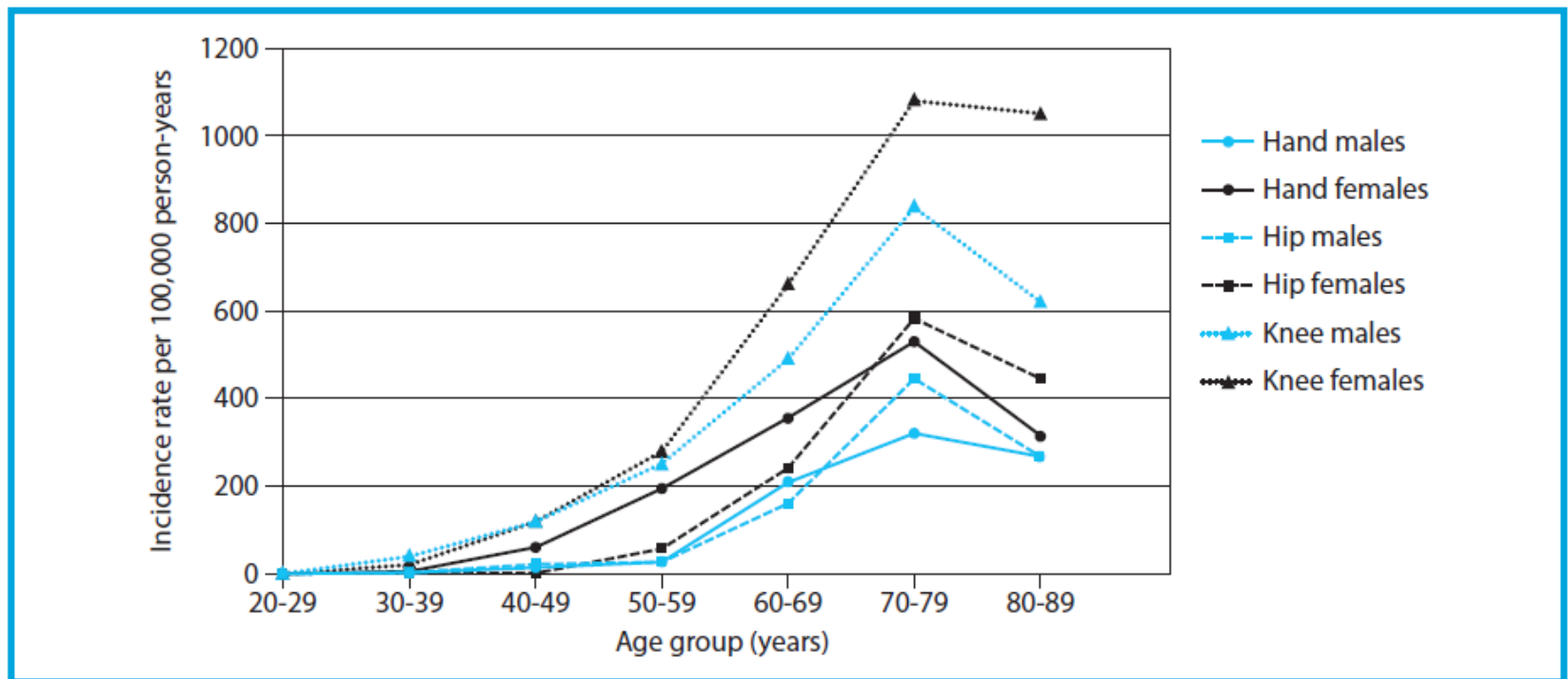


Figure 2. Incidence of OA of the hand, hip and knee in members of the Fallon Community Health Plan 1991-1992, by age and sex¹⁰.

Migliore, A., & Picarelli, G. (2018). Is osteoarthritis a gender-specific disease?. *Journal of Sex and Gender-Specific Medicine*, 4(1), 13-20.

Mobility

Muscles

Loss of strength due to fiber loss, 10-15% per year after age 40-50, greater for men, tendons less flexible, offset by strength exercises

Bones

Loss of mineral content and rebuilding (.5% - 1% per year), rate double among women, considerable variability, offset by exercise and diet

Joints

Articular cartilage loss, tendon and ligament flexibility loss, considerable variability (e.g., genetics, use, weight)

Vital Bodily Systems

Cardiovascular System

plaque accumulation, reduced blood flow, reduced heart ventricle strength, reduced blood vessel flexibility

<https://www.youtube.com/watch?v=ON49FzenS7w>

<https://www.youtube.com/watch?v=OsJEZztUPY>

Respiratory System

Muscles, tissue flexibility

Urinary System

Reduction of bladder, kidney, ureters, and urethra

Digestive System

Slower digestion, less flexibility in esophagus, reduced gastric juices

Vital Bodily Systems

Respiratory System

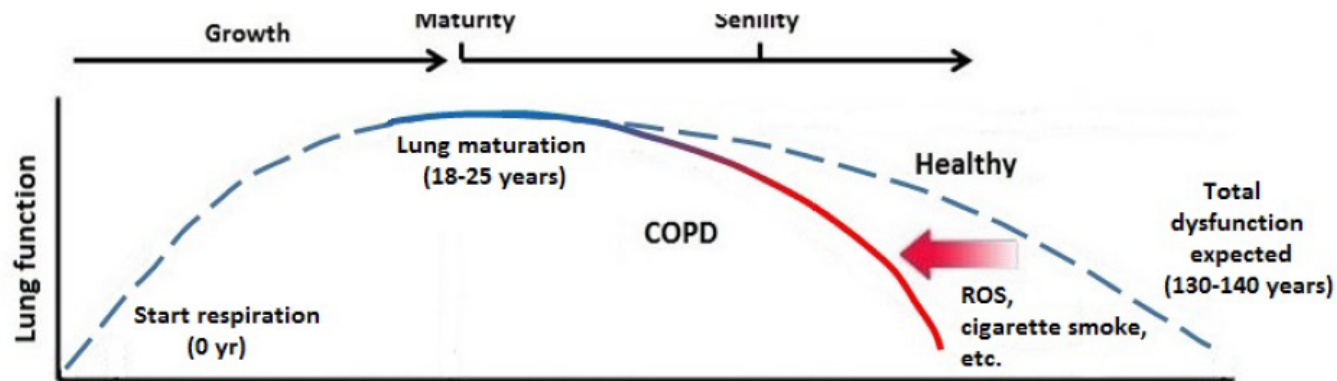



Figure 1: Correlation of lung function and age. Lung function increases with growth until maturity and drops with age. Environmental factors such as smoking (amongst others producing reactive oxygen species (ROS)) can negatively influence lung function. Modified from Ito and Barnes (21)

https://www.researchgate.net/profile/Srikanth-Karnati-2/publication/312165160_COPDemphysema_cause_or_consequence_of_agingsenescence/links/5873a37d08ae6eb871c64f3e/COPD-emphysema-cause-or-consequence-of-agingsenescence.pdf?origin=figuresDialog_download&_rtd=e30%3D&_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6Il9kaXJlY3QiLCJwYWdlIjoicHVibGJlYXRpb24ifX0

Vital Bodily Systems

Urinary System


URINARY INCONTINENCE

 NINKATEC
Right at home


TYPES & SYMPTOMS

- **Stress urinary incontinence:** urine leakage when exerting efforts (exercising, coughing, laughing)
- **Urge urinary incontinence:** strong urge & inability to hold
- **Overflow incontinence:** frequent urination, dribbling, difficulty starting to urinate despite urge


TREATMENTS




Normalise it as a medical condition & talk to the doctor




Bladder training: following a fluid and voiding schedule




Treatment involves medications, tools, & medical procedures if appropriate to improve bladder control



Dietary changes: e.g., avoid bladder irritants (caffeinated drinks, alcohol, spicy food, etc)



Treatment of underlying conditions: UTI, kidney stone or prostate problem



Pelvic floor muscle training: Kegel exercises

<https://ninkatec.com/urinary-conditions-in-elderly-incontinence-uti-kidney-stones/>

Vital Bodily Systems

Urinary System

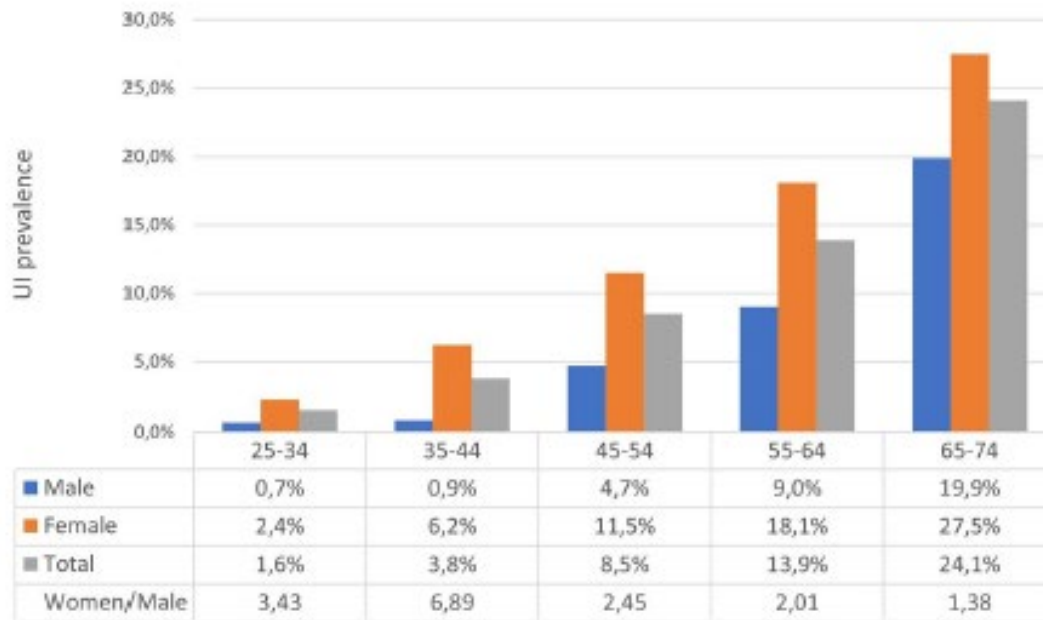
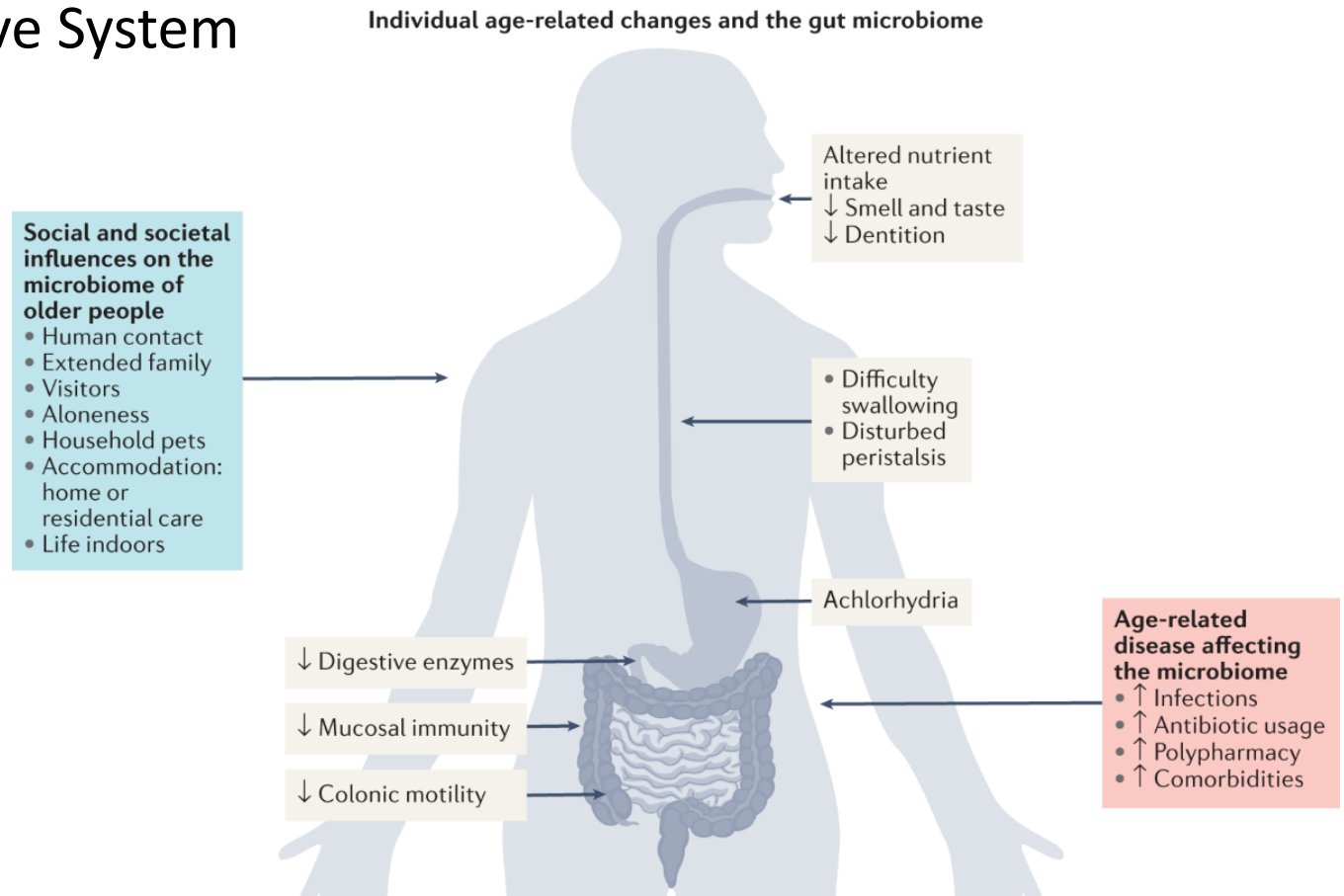


Fig. 1 Prevalence of urinary incontinence according to age and gender groups

Yavuz, M., & Etiler, N. (2023). Addressing urinary incontinence by gender: a nationwide population-based study in Türkiye. *BMC urology*, 23(1), 205.

Vital Bodily Systems

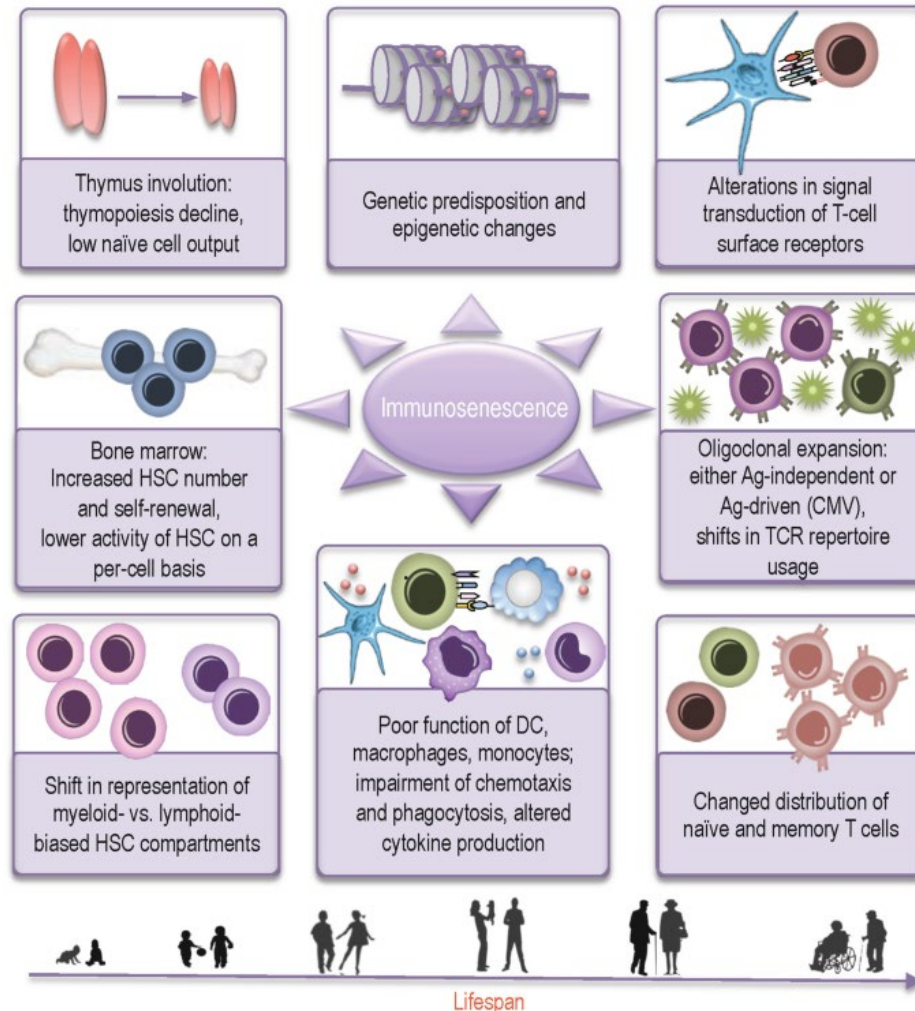
Digestive System



Ghosh, T. S., Shanahan, F., & O'Toole, P. W. (2022). The gut microbiome as a modulator of healthy ageing. *Nature Reviews Gastroenterology & Hepatology*, 19(9), 565-584.

Bodily Control Systems

Immune System



Müller, L., Di Benedetto, S., & Pawelec, G. (2019). The immune system and its dysregulation with aging. *Biochemistry and cell biology of ageing: Part II clinical science*, 21-43.

Nervous System

Central Nervous System

Video: “What happens to your brain as you age”

<https://youtu.be/cMim0uU1yzA>

Sleep

Sleep problems in up to 50% of older adults, take longer to fall asleep, wake more frequently, needs are about the same as younger adults

Temperature Control

Greater susceptibility to hyperthermia and heat stroke due to health conditions and other physiological aging

Sensation and Perception

Vision

Presbyopia (loss of close vision), loss of visual acuity (loss of far vision), light sensitivity (“night blindness”), cataracts, macular degeneration (loss of central vision) less commonly, glaucoma

Hearing

Presbycusis (loss of high pitch hearing), tinnitus (“ringing in the ears”)

Balance

Smell and Taste

Somatosensory System

Sensation and Perception

Vision

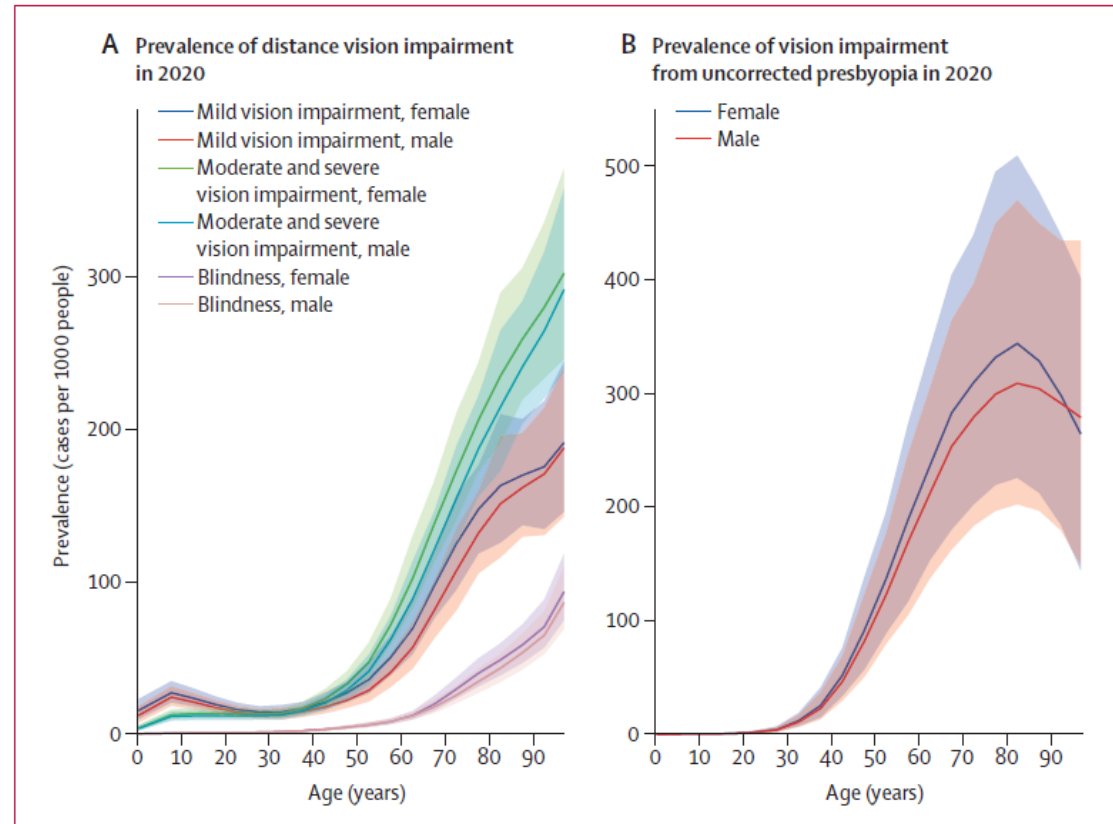


Figure 1: Estimated age-specific prevalence of distance vision impairment (A) and vision impairment from uncorrected presbyopia (B), by sex, in 2020

Solid lines show sex-specific prevalence estimates, with shaded areas indicating 95% uncertainty intervals.

Bourne, R., Steinmetz, J. D., Flaxman, S., Briant, P. S., Taylor, H. R., Resnikoff, S., ... & Tareque, M. I. (2021). Trends in prevalence of blindness and distance and near vision impairment over 30 years: an analysis for the Global Burden of Disease Study. *The Lancet global health*, 9(2), e130-e143.