

How We Age and What to Expect

Nature vs Nurture in Aging (Warning: Science Slide!)

Nature (Genetic)

- Our DNA carries instructions for our entire lifespan, including built-in programmed cell death ("apoptosis")
- ▶ DNA is on chromosomes, which can show signs of aging ("telomeres")



Multiple genes involved in aging process as well ("progeria")

Nurture (Life Experiences)

- But it's more than just our genes that controls when & how we age
- Identical twins in general die years apart
- "Epigenetics": Our individual burden of illnesses, physical & emotional trauma, toxins, and environmental exposure can affect aging, by changing how DNA is read

Aging ("Senescence") is a Process, Not a Disease

- Aging is hard to define but involves plateauing and ultimately some degree of loss of previous function. It may be very obvious or totally silent
- Varies tremendously from person to person
- Different organ systems age at different rates
- In addition to "epigenetics", direct effects of illnesses and injuries can speed up aging
- When does it start? Depends on where you set the bar & your expectations





How our brains, nerves and muscles age

- Although major variability from person to person, aging is universal
- Some things change in most everyone:
 - Vision
 - Hearing
 - Muscles
 - Mobility
 - Memory
 - ► Main question is always: "How does this change affect my ability to function here and now?"

What are some common Aging Changes?

- ▶ Vision: pupils smaller, slower accommodation, decrease acuity
- ► Hearing: loss of high frequencies
- Motor activities: slowing of reflexes and reaction time
- Mobility: change in stride, pace, posture, balance
- ► Fine Motor: Mild tremor
- Mental Processing: can get a bit slower.
- Memory: "Benign Senescent Forgetfulness"
 - Forget someone's name, but know who they are. "It's on the tip of my tongue"
 - Remember an event, but not sure exactly when. "Was that in 2017 or 2018?"

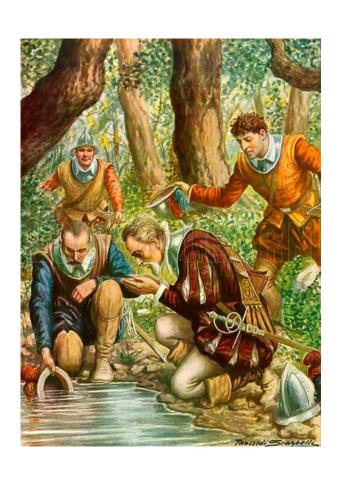


Aging itself is a normal process, but...

- As people age, the # of medical problems they face increases, at times without warning
- Just to name a few: hypertension, cardiac problems, Type 2 diabetes, arthritis, cancer, neurological problems like dementia, Parkinson's
- Leading to visits to multiple new health care providers and settings
- And new medications that need monitoring and adjusting
- And new financial pressures
- ▶ Which can lead to anxiety and/or depression
- Which can worsen many health problems and cause new ones
- Setting up a bad feed-back loop

So How Should We React?

So Now What Should I Do? Maybe Ponce de Leon Was Right?



21st century equivalents of P-de-L's fountain of youth:

- Special Diets
- Mega Vitamins
- Extra Supplements
- Various Physical Regimens
- Snake Oils



Back to Basics

- ► Keep track of your diet. See a nutritionist if needed.
- ► Stay hydrated. Kidney function ages too
- Moderation with alcohol consumption
- ► Sleep:
 - Normal to go to sleep and to arise earlier
 - ▶ Still should get around 8 hours sleep each night

More Basics:

- Stay active:
 - Physically: Too much "sedentary" isn't good at any age. Stretch, walk, yoga, age-appropriate gym activity (seated if needed), get-up-and-move-around
 - Mentally: Read, do puzzles, Wordle, anything that stimulates thinking and memory
 - Socially: Family, friends, church, other interest groups

Some Medical Thoughts

- Value of a "Medical Home": one that is "patient-centered, comprehensive, team-based, coordinated, accessible, and focused on quality and safety"
- As part of that, make sure your doctor(s) perform a periodic medication review
- As medical problems increase, care should be "Patient-Centered, Family-Focused"
- Do your annual wellness exam.
- Keep up to date with immunizations: Pneumonia Vaccines (Pneumovax and Prevnar), Shingles (2-shot Shingrix), annual Flu Shot, and (? Annual) COVID boosters

Other Health Providers

- ► Keep up dental care. Periodontal disease can have distant effects, even on the nervous system ("inflammation")
- ► Periodic eye exams. Not just for glasses, but to check for glaucoma, cataracts, retinal disease
- Annual skin examination
- At some point, have your hearing checked. Social and neurological value to correcting hearing loss.

And Be Extra Careful About Falls



- Very common as we age
- ► Falls from shorter distances though more likely to lead to serious injury or death
- Part of annual wellness visit is checking on falls and ways to prevent them