



Enlightened Aging: Building Resilience for a Long, Active Life

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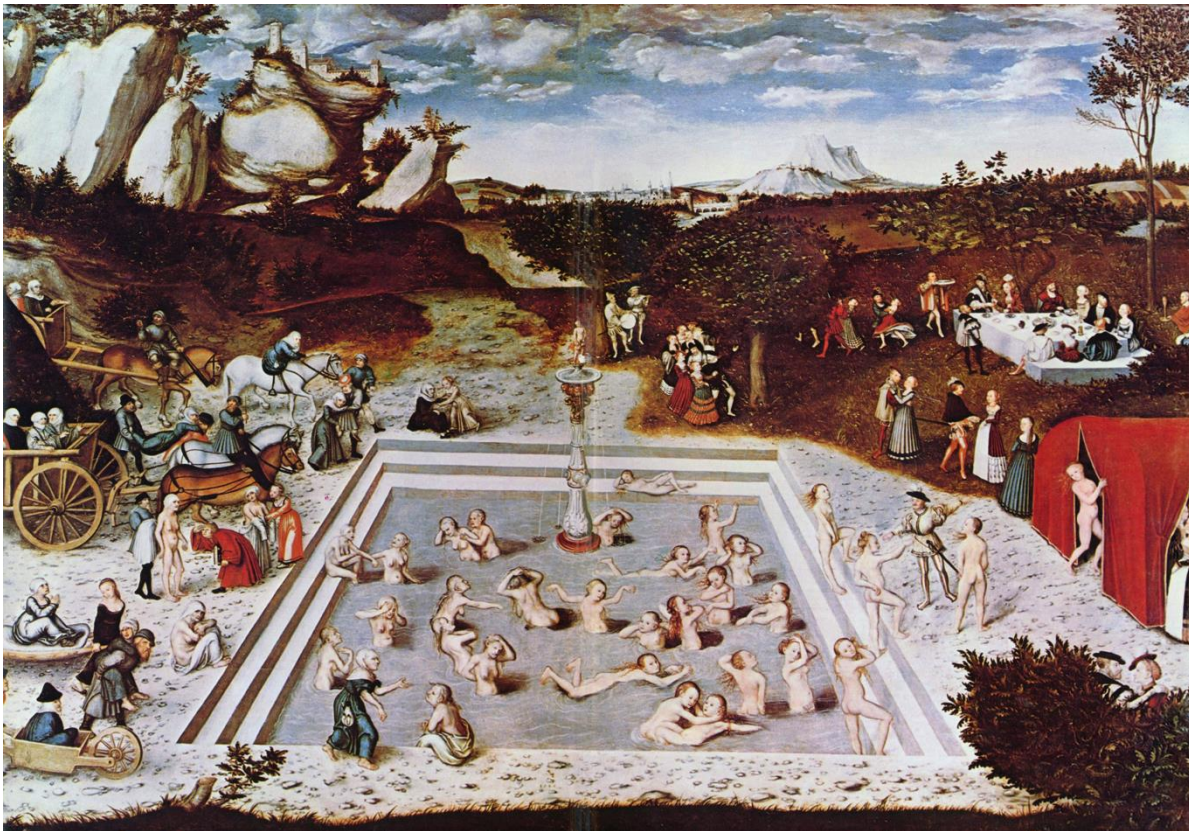
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ACT study participant Evangeline Shuler, age 100



- Community activist, mother, social worker...and tango dancer
- A role model for “enlightened aging”
- Most of us have the potential to live a shockingly good life into our 90s and 100s.

No magic bullet, no fountain of youth



“The Fountain of Youth” by German painter Lucas Cranach the Elder (circa 1546)

Looks good, but search for anti-aging “cures” can lead to:

- Over-diagnosis
- Too much medicine
- Unnecessary surgeries and treatment
- Medical harm

What is “enlightened” aging?



Knowledge of healthy aging + foresight to use it.

- We take concrete steps to prepare well for late life.
- We adapt to changes that are natural part of aging.

The ACT Study: Adult Changes in Thought

- A longitudinal study focused on promoting healthy aging.
- A collaboration of Kaiser Permanente and the University of Washington
- Continuously funded for more than 30 years by the National Institutes of Health
- Maintains an enrollment of 2,500 people age 65 and older
- Now includes one of the world's largest research populations of very old participants (over age 85).

Why research on healthy aging matters

Fastest growing segment of our population is the oldest old:

- 1980: 720,000 Americans over age 90.
- 2010: 1.9 million Americans over age 90

And here comes the Baby Boom!

- From 2010 to 2050, the total population aged 90 and over will more than *quadruple*.

If current trends continue...

Half of all babies born in 2000 will live to see the year 2100!



Risk of dementia grows with age

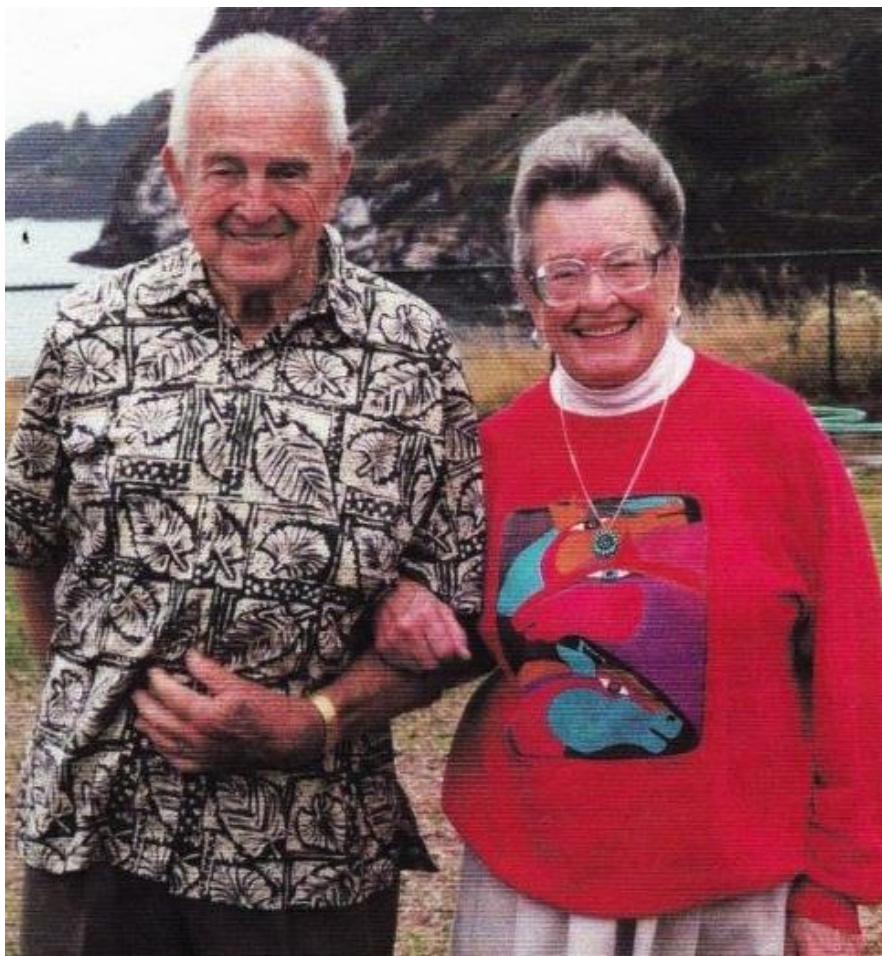
Dementia currently affects:

- 3% of people age 65-75
- 19% of people age 75-85
- 35% of people age 85-90
- 50% of people age 90-95
- 75% of people age 95 and older

But what if we could change this? What if we don't?

Much of our research focuses on ways to prevent or delay the onset of dementia.

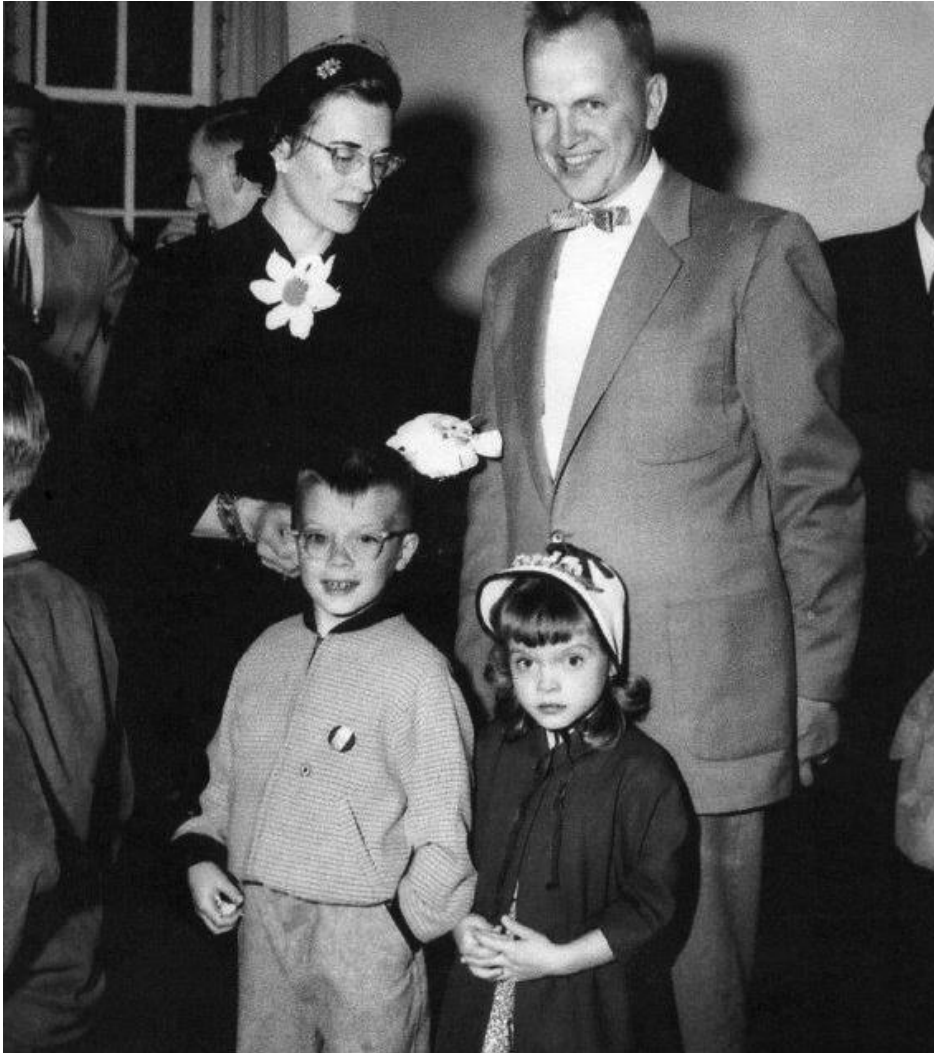
Lessons from “The Greatest Generation”



- My parents cohort lived longer than they ever imagined they would.
- We witnessed their victories and struggles.
- What will we do differently?
- How will we benefit from new discoveries in healthy aging?
- How can we experience “enlightened aging”?

Palmer and Marion Larson, 2003

Our parents, ourselves



*Mom, Dad, Grethe Ann
& me, 1953*

Good news: Compression of morbidity

Goal: To postpone disability and illnesses of old age until the very end.

Our studies show this compression is happening with Alzheimer's disease.

Rates of dementia are declining, showing that late-life dementia is preventable or at least can be delayed.

- Number of people with Alzheimer's and dementia is growing.
- *But the percentage of very old with these conditions is actually dropping!*
- Greater percent of very old people with Alzheimer's disease and dementia are staving off symptoms *until just a year or two before they die.*

What's behind this compression of aging?

- Advances in education
- Better health care
- Declines in cardiovascular risk (less smoking, better control of blood pressure and cholesterol)
- Healthier lifestyles
- Better socioeconomic conditions

Obesity epidemic and more diabetes could wipe out these gains.

But healthy lifestyles and better health care can turn the tide!

Cause for optimism: *We can* take steps to prevent or postpone disability until well into late life.

The Adult Changes in Thought Study: Selected findings

Selected ACT findings: Falls & Footwear



1985-88: Early studies showed just how devastating falls are—and how frequent. Contributing factors: sleeping pills, other common psychoactive drugs, weakness, and impaired balance. (Buchner, et al)

2004: To avoid falls, wear lace-up or Velcro shoes with adequate heel support and non-slip soles. Avoid high heels. And don't walk around barefoot or in stocking feet—even indoors. (Koepsell, et al)

Selected ACT findings: Drug effects



1987: Certain drugs, especially sedatives, can cause confusion and falling. (Larson et al)

2006: Statin drugs, used to treat high cholesterol, may be linked to fewer of the microscopic brain changes that are typical of Alzheimer's disease. (Li, et al)

Selected ACT findings: Drug effects

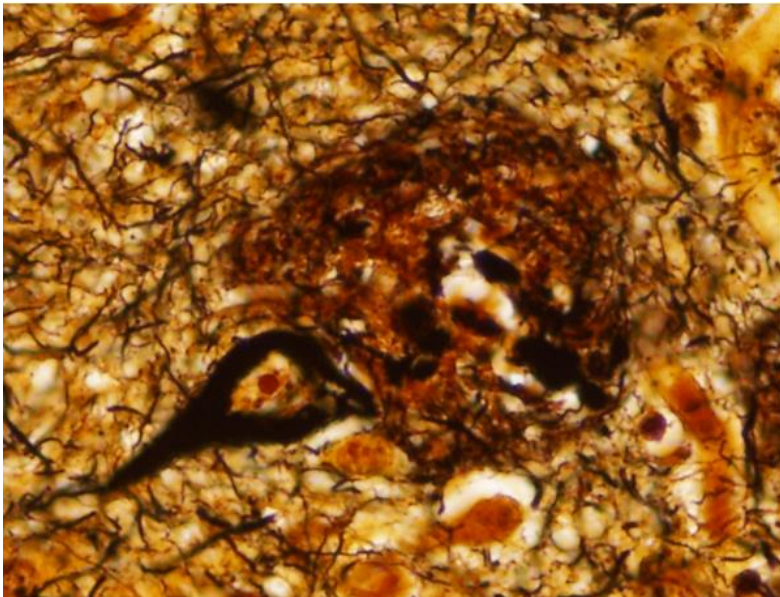


2015: Long-term use of high doses of anticholinergic drugs such as Benadryl were linked to greater risk of dementia. (Gray, et al)

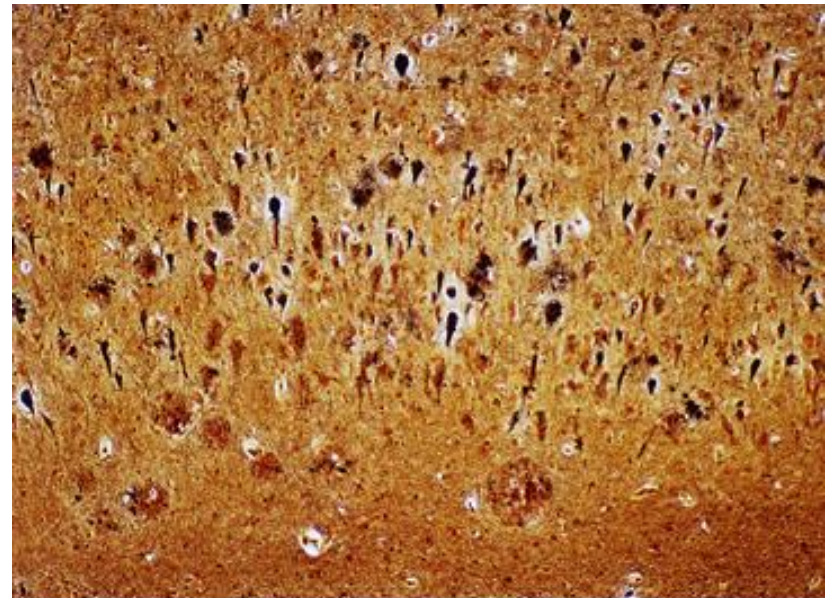
2016: Benzodiazepines (Valium, Zanax) and opioids do not seem to increase risk of dementia, but have other dangers in older people. (Gray, et al)

Selected ACT findings: “Mixed dementia”

2011: Ecology of the aging brain: People without signs of dementia can live to old-old age (older than 90)—even though their brains have advanced changes of Alzheimer’s disease (plaques and tangles). (Sonnen, et al)



Brain tissue with neurofibrillary plaque and neuritic tangle



Large numbers of plaques and tangles

Selected ACT findings: Links between dementia and other chronic conditions

2011: The most common kind of chronically irregular heartbeat (atrial fibrillation) is associated with a greater risk of dementia, including Alzheimer's disease. (Dublin, et al)

2011: Depression at age 50 or older is linked to an increase in dementia and may be an early sign of the condition. (Li, et al)

2013: High blood sugar levels averaged over a five-year period were associated with rising risks for dementia, even among people who do not have diabetes. (Crane, et al)

Selected ACT findings: Physical activity



2006: Seniors who exercise three or more times a week have a 30-40% lower risk for dementia vs. those who exercise less. Risk reduction was greatest for those with lower performance levels. Even small change linked to big improvement.
(Larson, et al)

Selected ACT findings: Physical activity

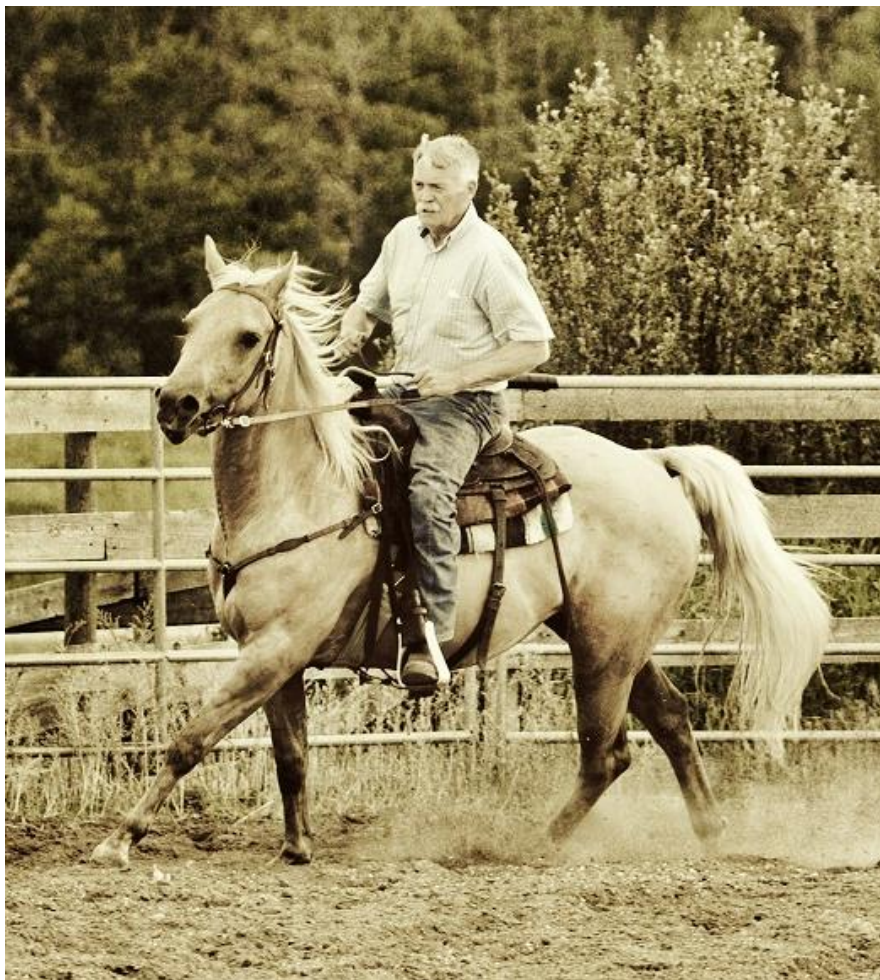


2006: First signs of dementia may be changes in physical function, often preceding mental decline. Good physical function is linked to delay in Alzheimer's, so re-engaging in physical activity may help to stop or slow cognitive decline. (Wang, et al)

2008: Seniors who participate in fitness programs like Silver Sneakers have lower health care costs. (Nguyen, et al)

The key to well being as we age: Resilience

Case in point: Ben Stevenson



- Professor, writer, world traveler, horseman
- Built brain and body reserves through exercise and education
- Stayed resilient through physical, mental and social activity
- Lived to age 101

Resilience: The ability to adapt to adversity



Resilience allows people to bounce back from physical set backs, illness, and hardships.

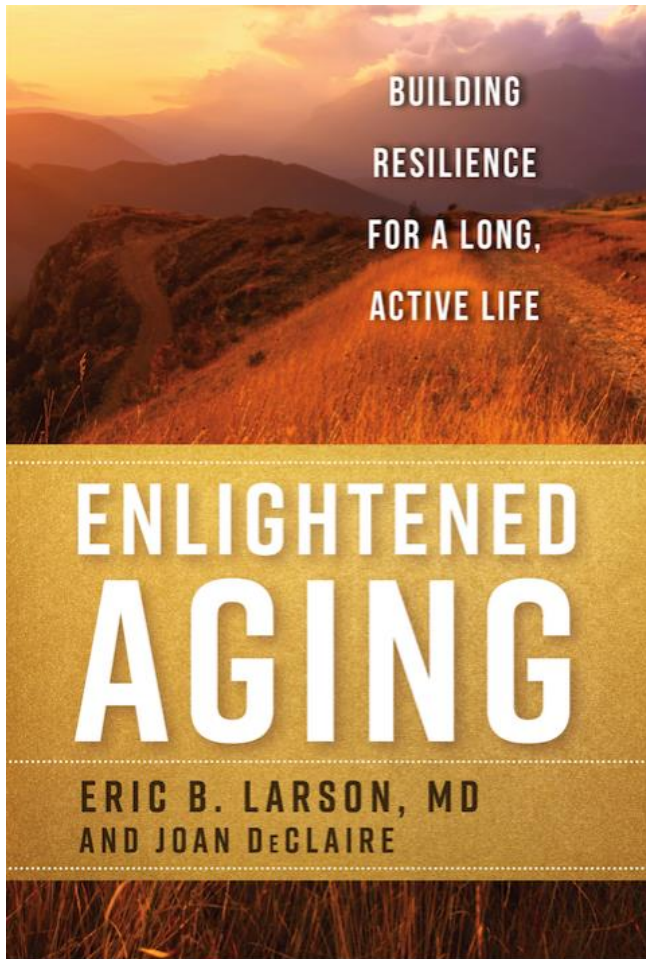
Like a tree in a windy climate, they don't break, they bend.

Remember Evangeline Shuler



- Widowed at 60, became a world traveler
- Adapted well to changes in her living arrangements, physical limitations, eventual blindness.
- Built resilience by staying active physically, mentally.
- Lived to age 107.

Enlightened aging follows a PATH that leads to resilience



The steps on this PATH are:

Pro-activity: Take an active role in managing your own health and well being.

Acceptance: Know that changes will come and accept them with mindfulness and equanimity.

THree reservoirs: Build your reserves of well being in three ways: Mentally, physically, and socially—for the long, fulfilling road ahead.

Pro-activity: Take an active role in health

Aging is *NOT* an inevitable downward spiral.



Older people now have a greater chance of avoiding disability than ever before!

Better control of cardiovascular risk means lower rates of dementia.

Up to half of all Alzheimer's cases may be attributable to modifiable risk factors.

Pro-activity: Take an active role in your own health and well being

Take charge of your health by preventing illness and managing chronic conditions:

- Don't smoke or chew tobacco
- Avoid excessive alcohol use
- Maintain a healthy weight
- Exercise regularly
- Manage stress by learning to cope with problems

Pro-activity: Take an active role in your own health and well being



Partner with your health care providers to take care of yourself :

- “Shared decision-making” about your care
- Avoiding over-diagnosis, over-treatment, over-prescribing

Acceptance: Prepare for change with equanimity and mindfulness

What do older people want? Survey of ACT and Kame participants' definition of "successful aging" showed:

- Longevity? Not so much.
- Meaning, fulfillment, purpose mattered most.
- Strong relationships with friends and family
- The ability to continue contributing through work, volunteerism, hobbies.
- Independence ("I don't want to be a burden to others.")

When you plan for the changes aging brings, keep these values in mind.

Acceptance: Prepare for change with equanimity and mindfulness

Myth: Young people are happier than old people. Not true!



Journal of Happiness:
researchers surveyed 2
groups: 30s & late 60s.

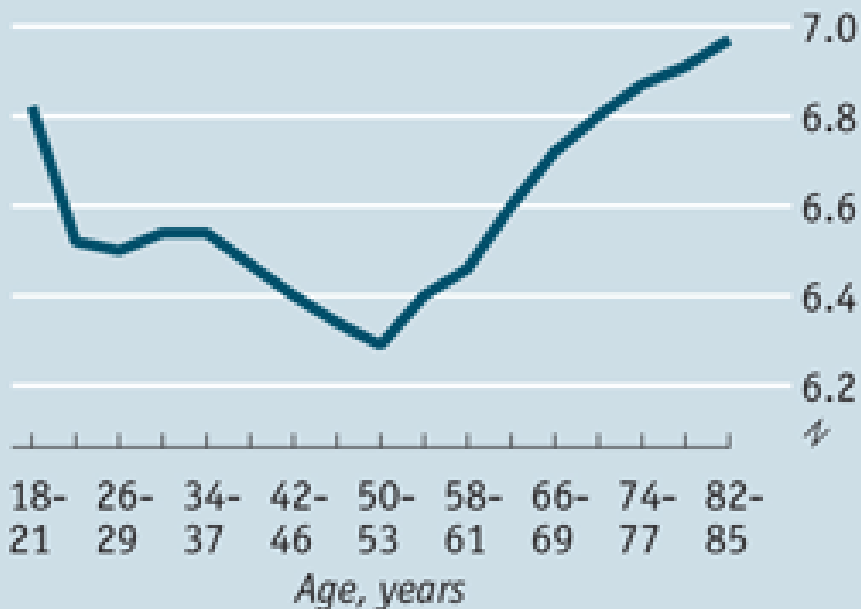
Which group did participants
believe to be happier?
“The youngsters,” they said.

But when they asked both
groups to rate *their own* well
being, the older group was the
happier bunch!

Acceptance and the U-shaped happiness curve

The U-bend

Self-reported well-being, on a scale of 1-10



Source: PNAS paper: "A snapshot of the age distribution of psychological well-being in the United States" by Arthur Stone

Many studies have reached the same conclusion about happiness:

- High at age 18-21
- Low in middle age
- Rises again in old old age.

Three reservoirs: Mental, physical, and social

- Mental reserves may be measured in brain development and education.
- Research shows people with higher levels of education face a lower risk of Alzheimer's disease later in life.

THree reservoirs: Mental, physical, and social

- Build bone strength, muscles, cardiovascular system, vision, and hearing.
- Because the mind and body are linked, your physical reserves have a tremendous influence on your mental capacity.
- Our findings on regular physical activity to lower risk of dementia demonstrate this connection.

THree reservoirs: Mental, physical, and social



Social connection gives life meaning and purpose

A strong social network helps older people to grow old in a place that's safe, comfortable, stimulating, and stable.

Three reserves: mental, physical, social

Staving off disability requires four inter-related functions:

1. Cognitive function (Remember: The brain relies on whole-body health, especially avoiding heart disease and stroke.)
2. Mobility (Takes balance, bone strength, and muscle strength)
3. Hearing
4. Vision

Preserve, protect, and enhance these functions by staying active mentally, physically, and socially.

We're like athletes in a marathon. We need resources all the way to the finish line!

Societal challenges ahead

Baby Boom generation is predicted live longer than any previous generation.

Social policies are needed to:

- Extend productive years, including working later without the drudgery that makes retirement more attractive than work.
- Adopt effective programs to reduce vascular risk factors, especially obesity and diabetes.
- Focus on health promotion and maintenance while meeting everyday health care needs of people as they grow old.
- Promote better late-life planning and decision making.

To address societal challenges

For the health of tomorrow's generations of elderly:



Assure high-quality
early-life education

Create strong
communities:

- Social and economic well being
- Fewer disparities
- Reduced poverty

And remember...

“There is only one solution if old age is not to be an absurd parody of our former life, and that is to go on pursuing ends that give our existence a meaning—devotion to individuals, to groups or to causes, social, political, intellectual.”

--Simone de Beauvoir (1908-1986)

A conversation and questions