The New York Times Magazine

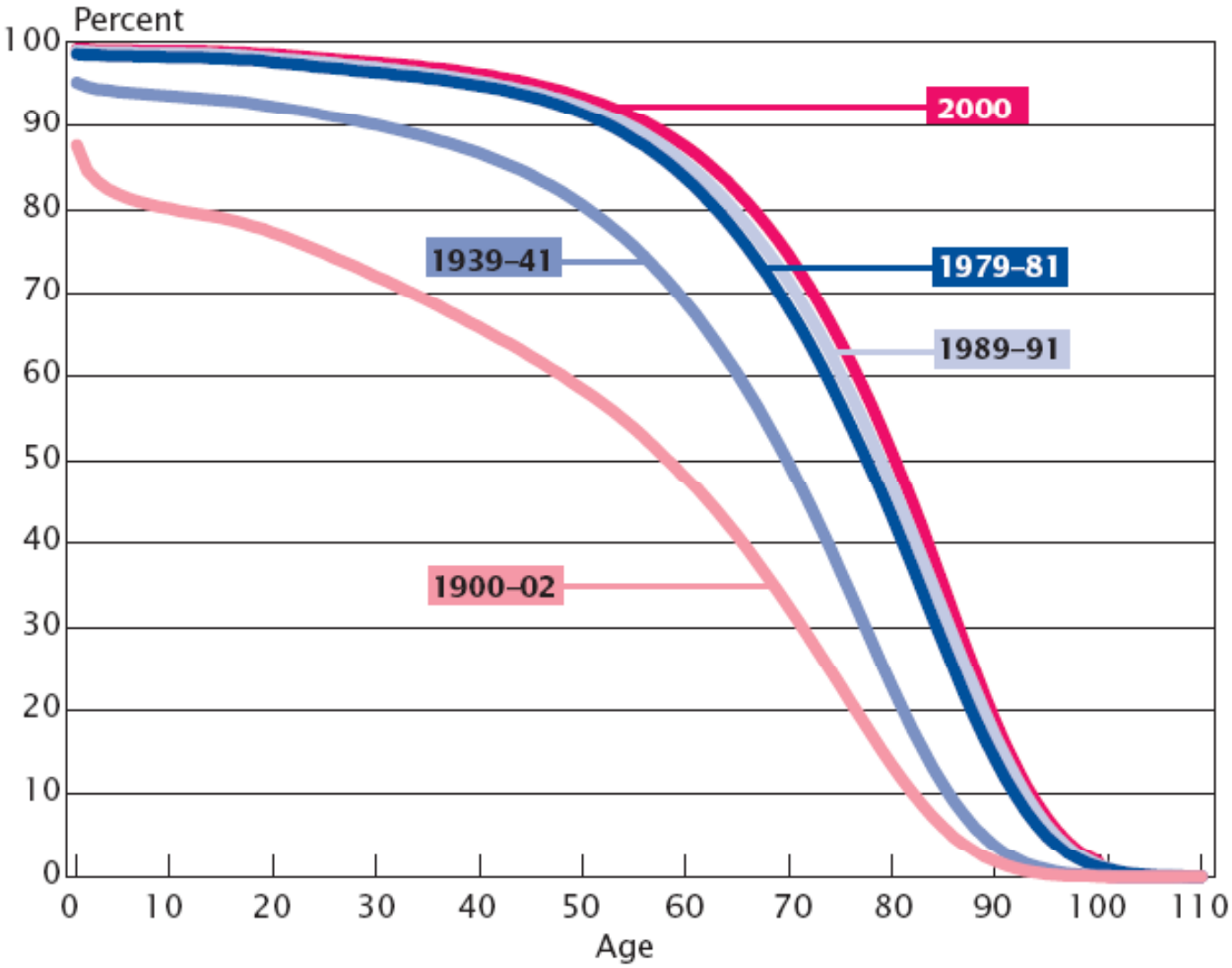
SECTION 6 MARCH 9, 1997

Funny, We Don't Feel Old

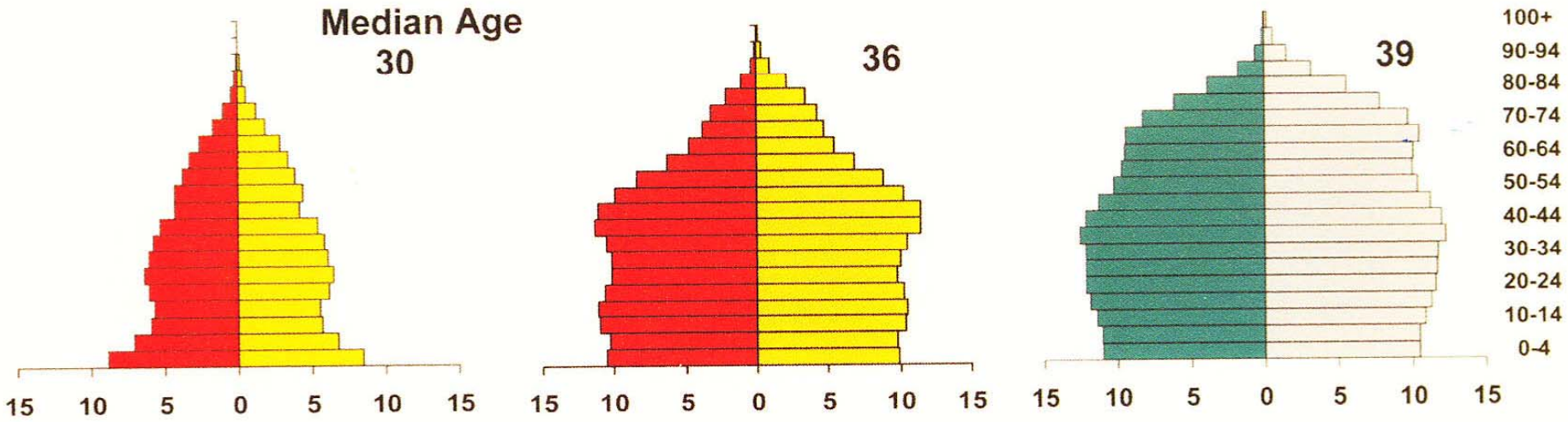
America discovers a new stage of life – after middle age.

The Age Boom **A Special Issue**

People Surviving to Selected Ages According to Life Tables for the United States: 1900–1902 to 2000



United States: From pyramid to cube as the population ages



1950
157.8 million

2005
298.2 million

2030
360.9 million

Population in millions by five-year age bracket; males on left, females on right.

Source: United Nations 2004 medium variant forecast

Men Per 100 Women

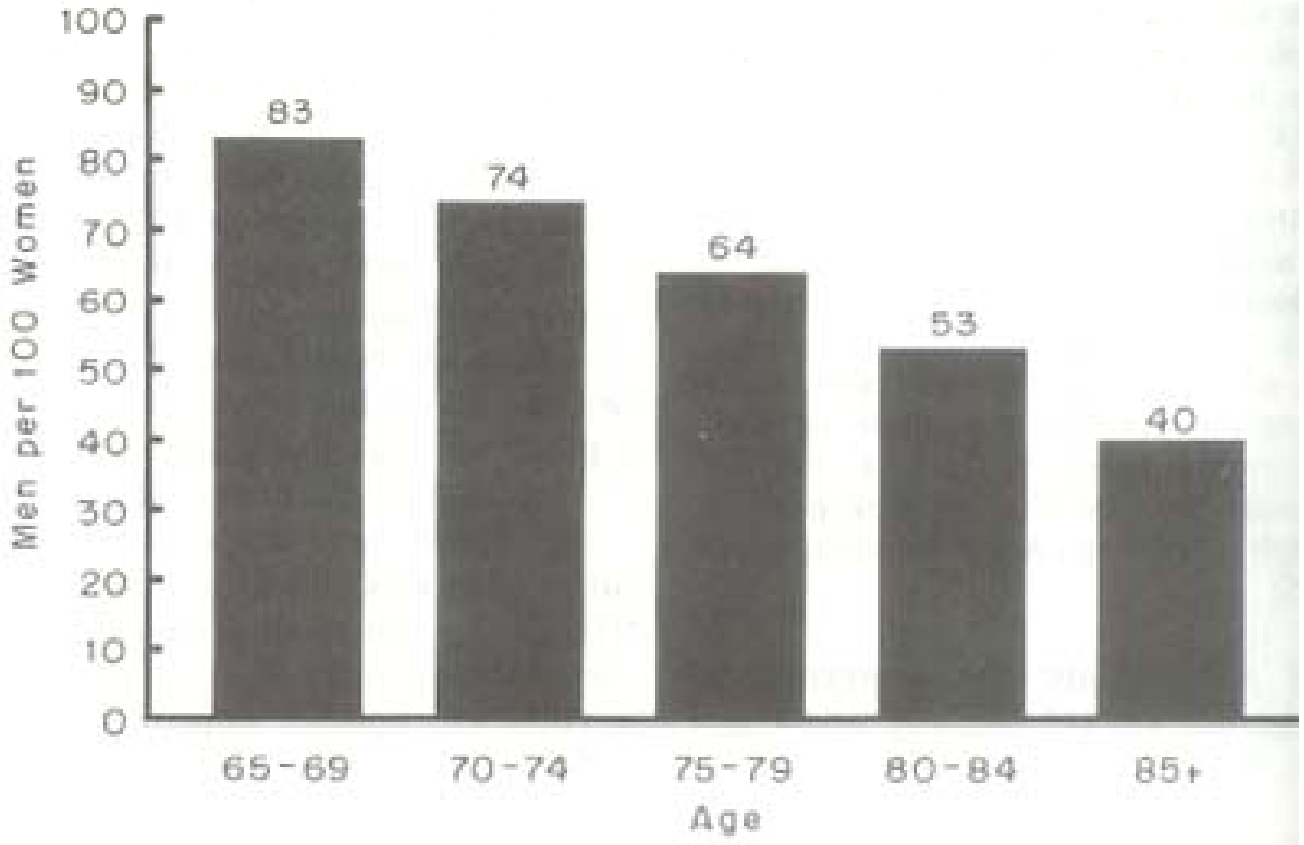
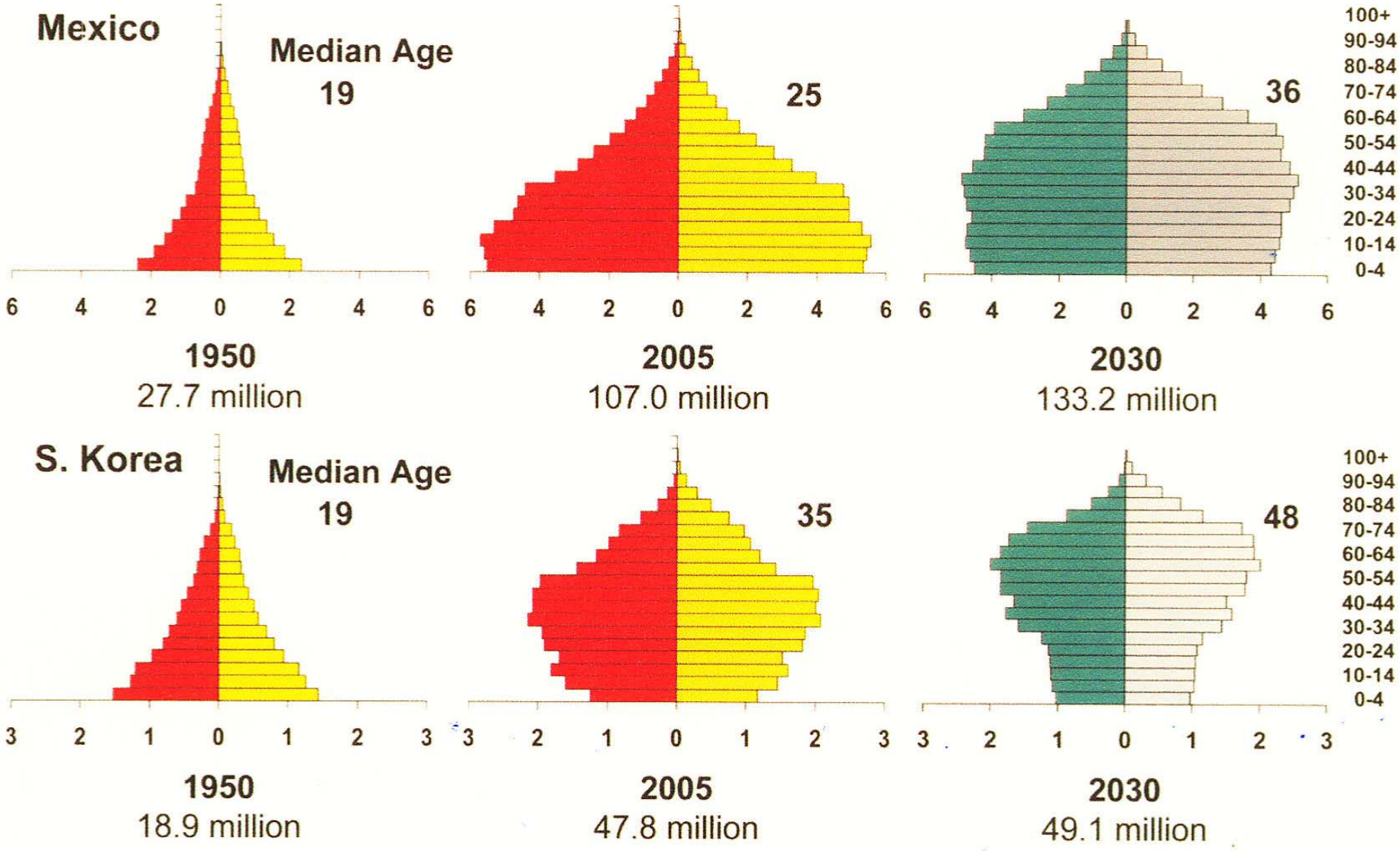


Figure 2 Number of men per 100 women by elderly age group: 1986. (From United States Senate Comm
1987)

Mexico and South Korea: Rapidly aging



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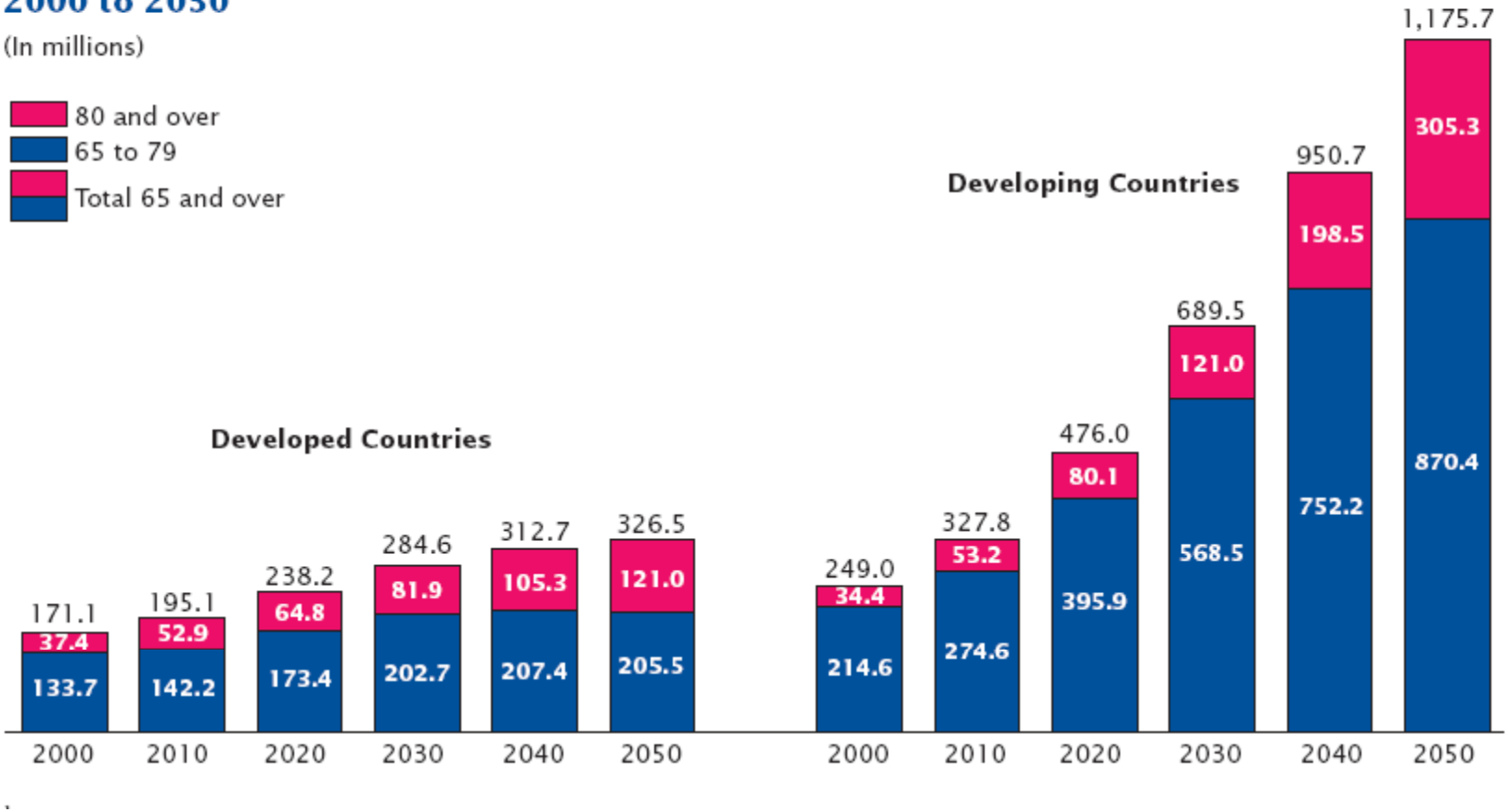
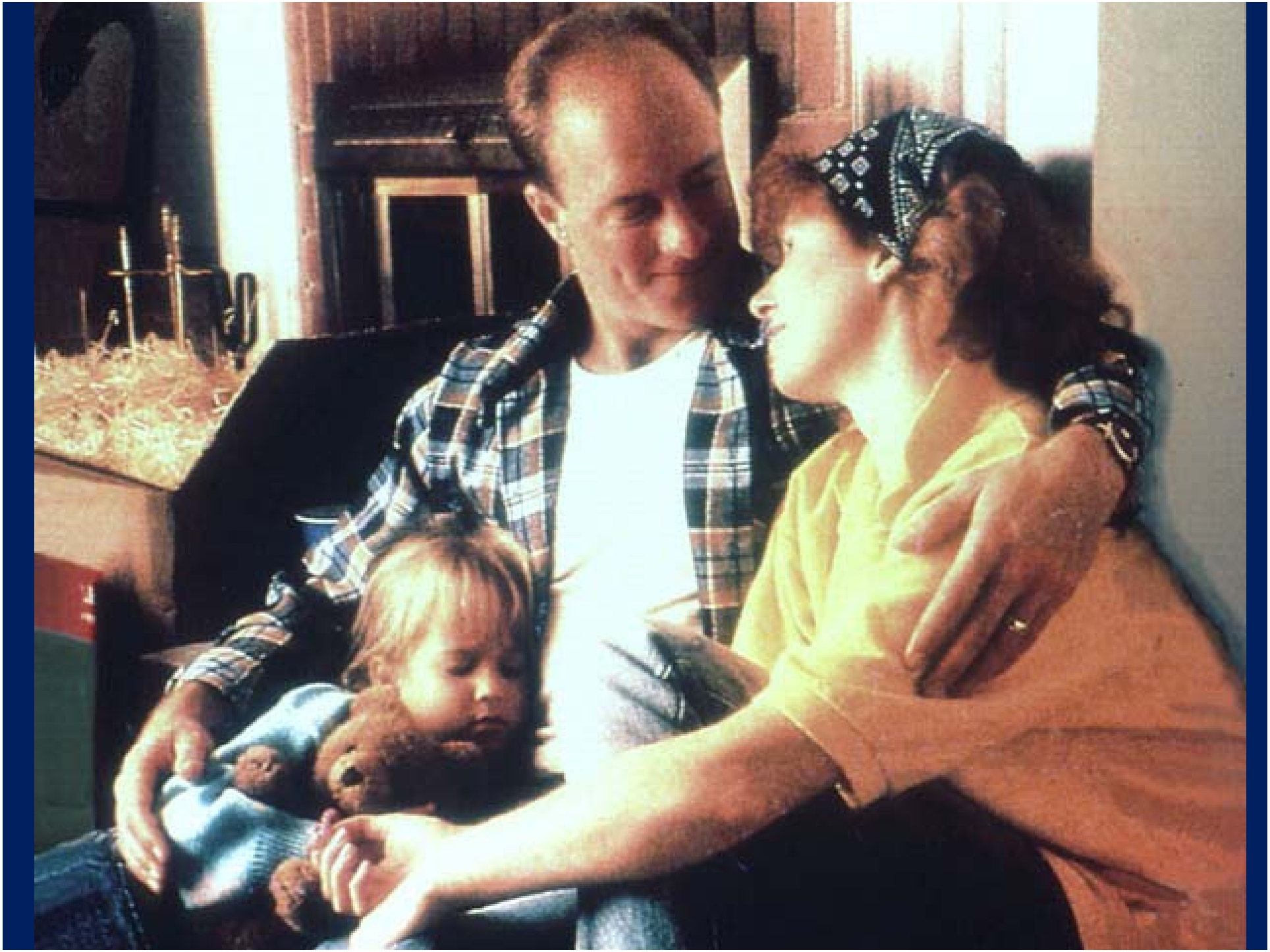
Population Aged 65 and Over for Developed and Developing Countries by Age: 2000 to 2050[1]



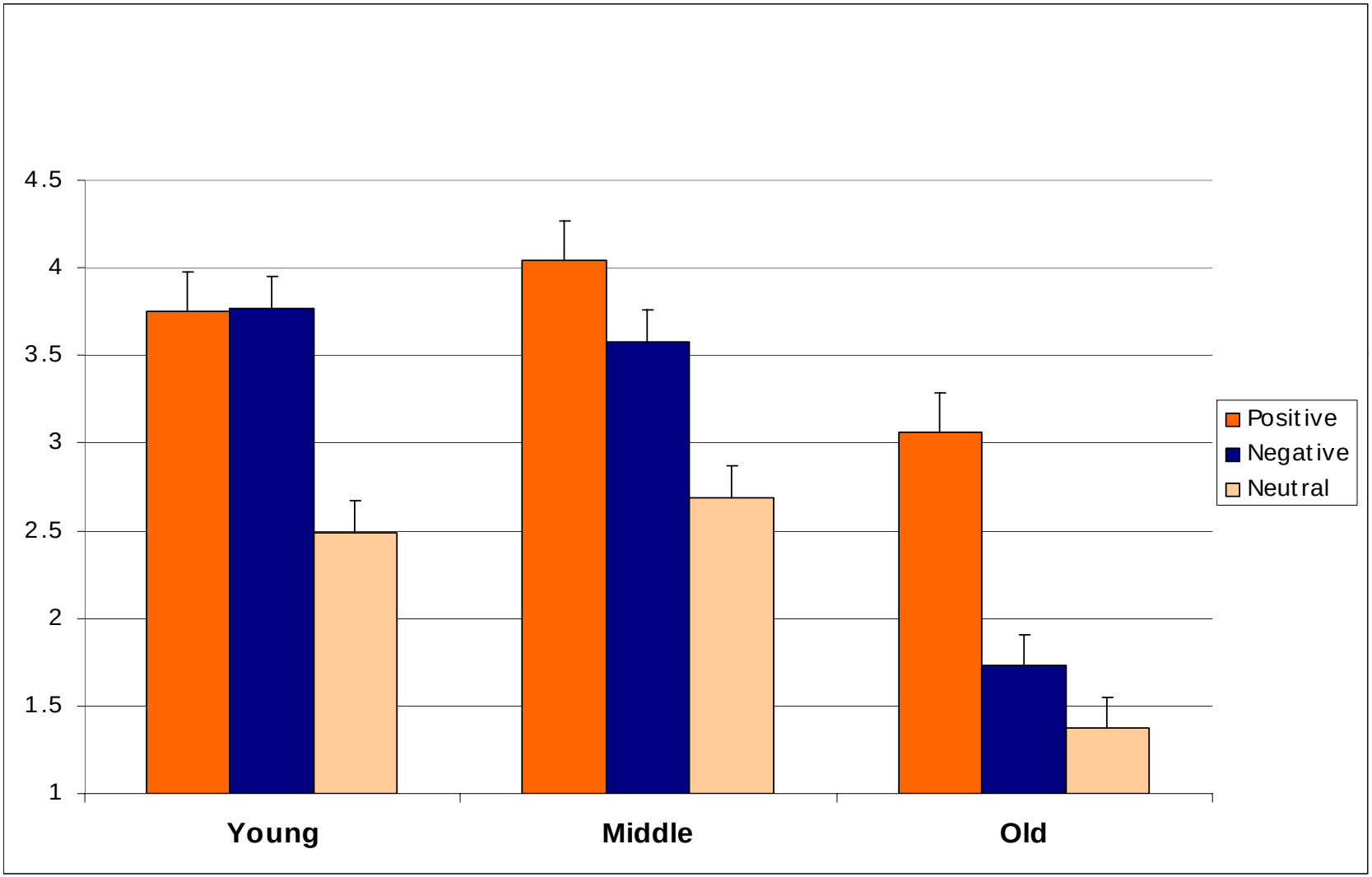
Positive Self-Perceptions of Aging Increase Longevity

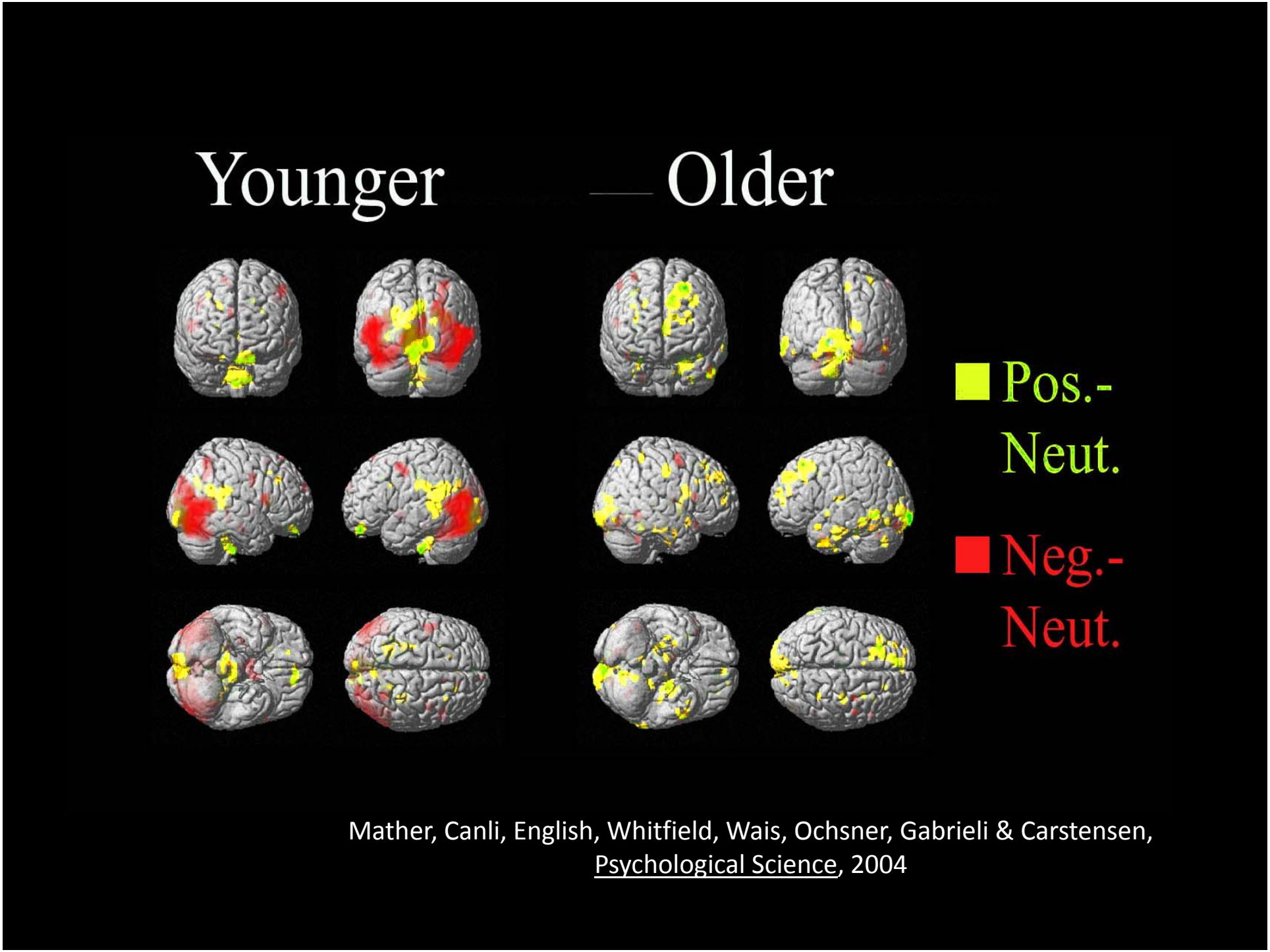
- Positive self-perception – 5 items (1975)
- Subjects: 338 m 322 w (50-94) community dwelling
- Each point of + self-perception of aging ↓ risk of dying by 13%
- Most positive survived 22.5 years, most negative 15 years (~ 7.5 yrs)
- Not affected by self report loneliness or health status

Levy, BR and Slade, MD, Journal of Personality & Social Psychology, 2002, 261-270



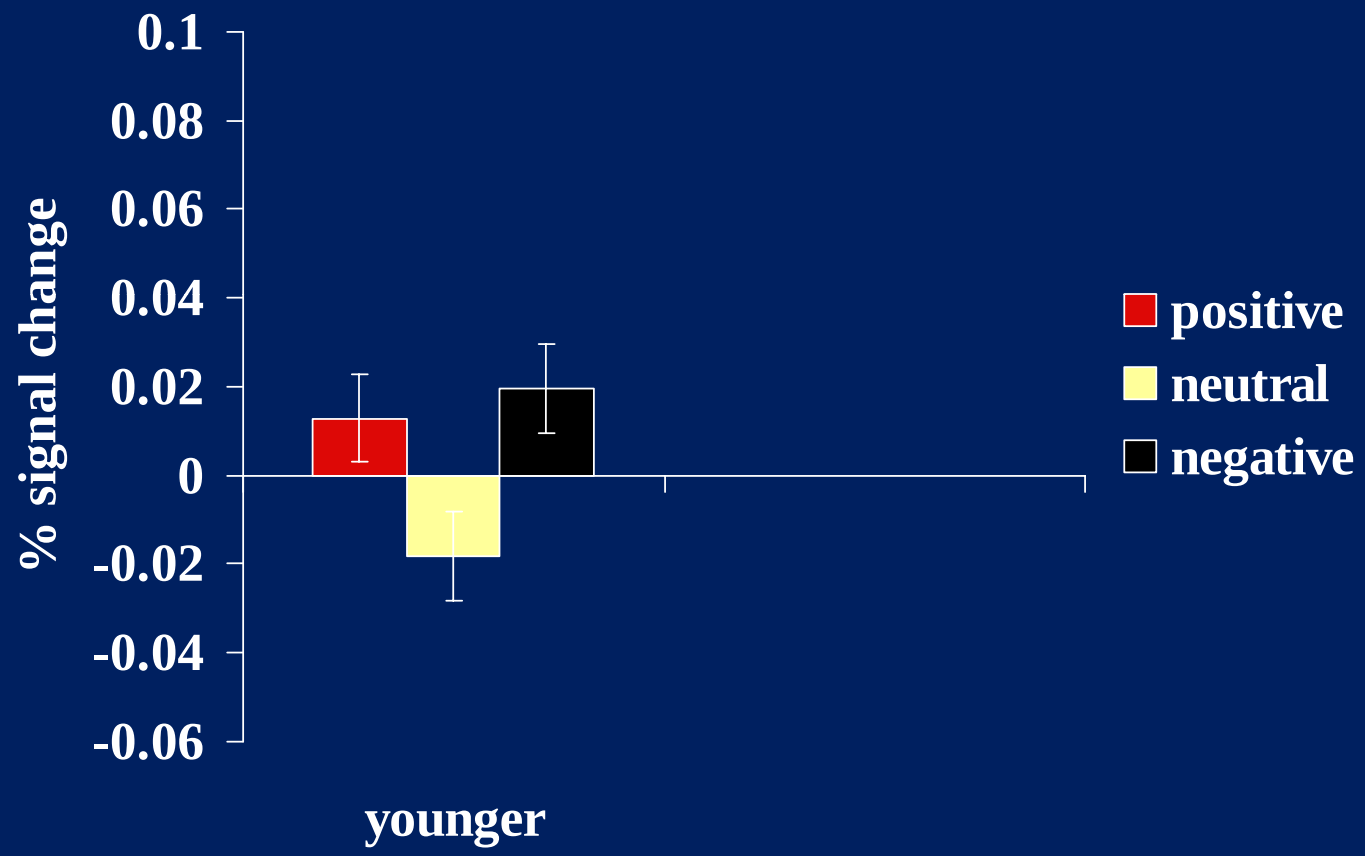
Mean Number of Images Recalled





Mather, Canli, English, Whitfield, Wais, Ochsner, Gabrieli & Carstensen, Psychological Science, 2004

Amygdala activity



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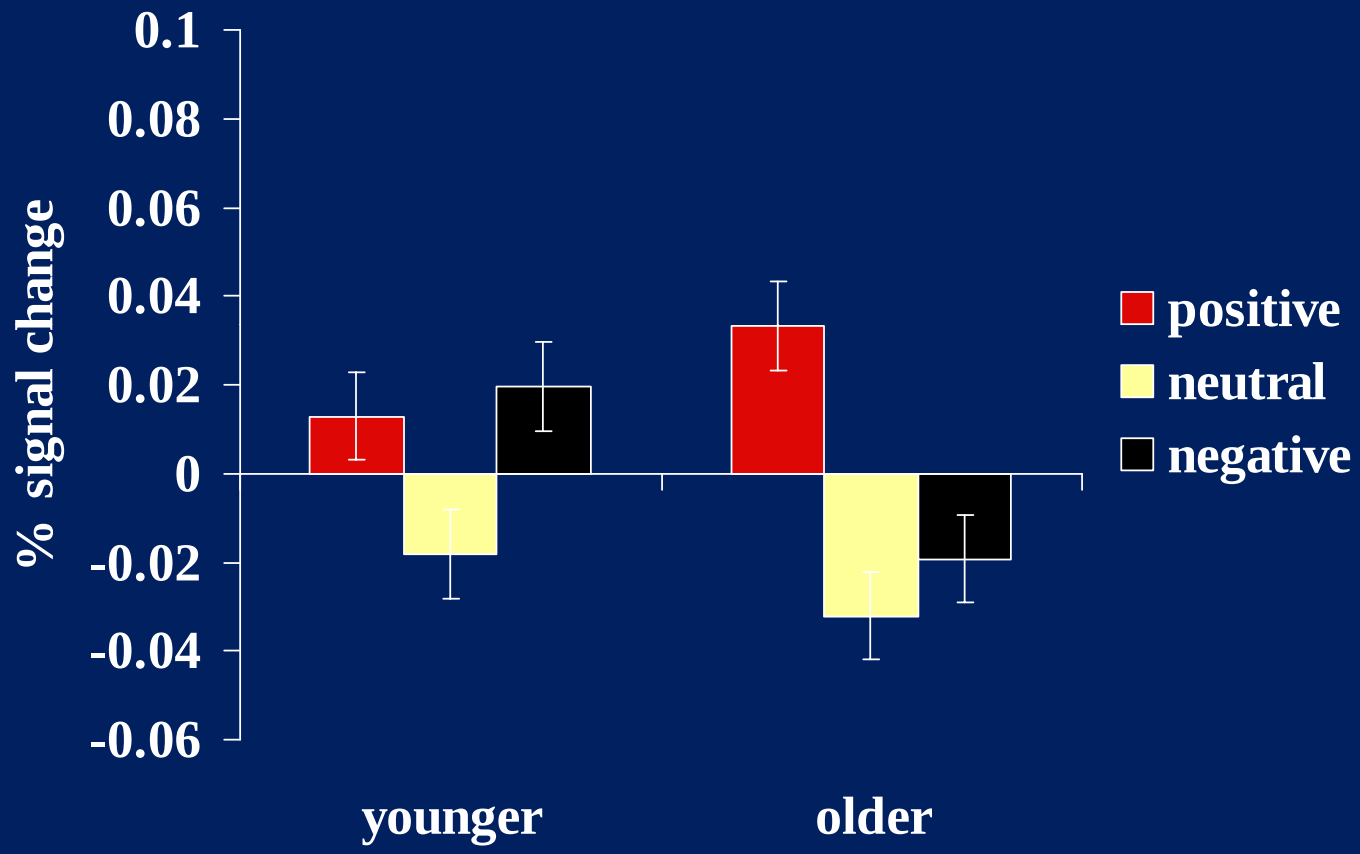
Amygdala Activity



Mather, Canli, English, Whitfield, Wais, Ochsner, Gabrieli & Carstensen
Psychological Science, 2004

And happier:
Longitudinal data

Personality and coping strategies - resilience

Self Confidence increases

Long term helping relationships with elders

Long term partnerships/marriages

Involvement with life and living

Active coping responses

(Vaillant)

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High Self-Efficacy

- Challenge to master
- Requires effort
- Focus on problem solving
- Visualize success
- Calm, clear thinking
- Persistent
- Likely to succeed

Creativity

- Creative people continue to excel in their vocations even unto very old age (80s/90s)
- Examples: Verdi, Pablo Picasso, Henri Matisse, Arthur Rubenstein, Martha Graham, George Bernard Shaw, Georgia O'Keefe, Winston Churchill, Frank Lloyd Wright

Older, But Wiser

Wisdom

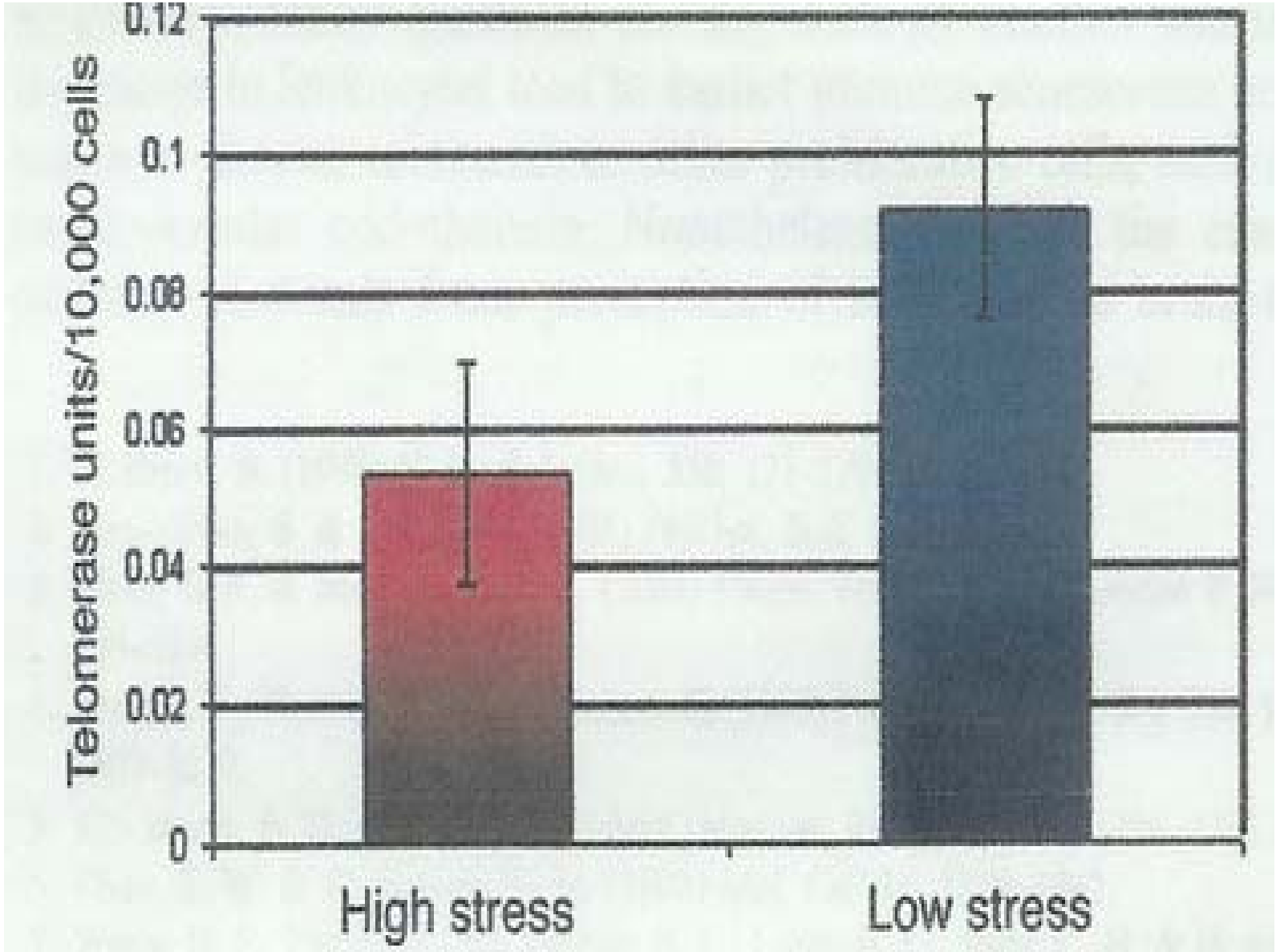
Expert knowledge about life and sound judgment in managing life's complexities and uncertainties

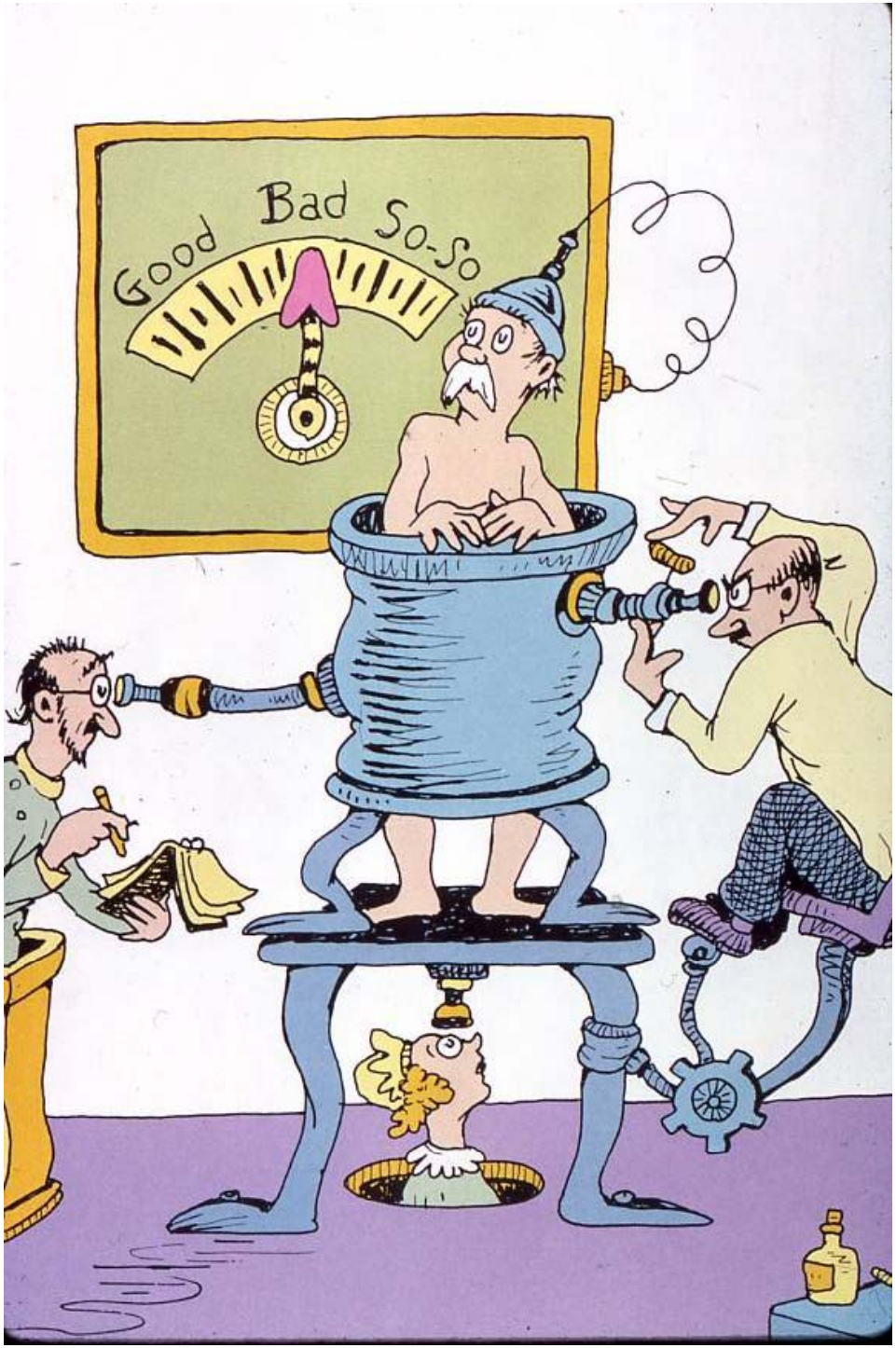
(Baltus *Wisdom)*

BIOLOGY OF AGING

Telomeres and Telomerase

- Telomeres – protective DNA complexes at end of chromosome
- Telomerase – specialized cellular ribonucleoprotein reverse transcriptase
- By copying a short template sequence within its RNA, telomerase synthesizes the telomeric DNA strand towards the distal end of the chromosome- thus extending it


Telomerase units/10,000 cells
0.12
0.1
0.08
0.06
0.04
0.02
0
High stress
Low stress


Good
Bad
So-So

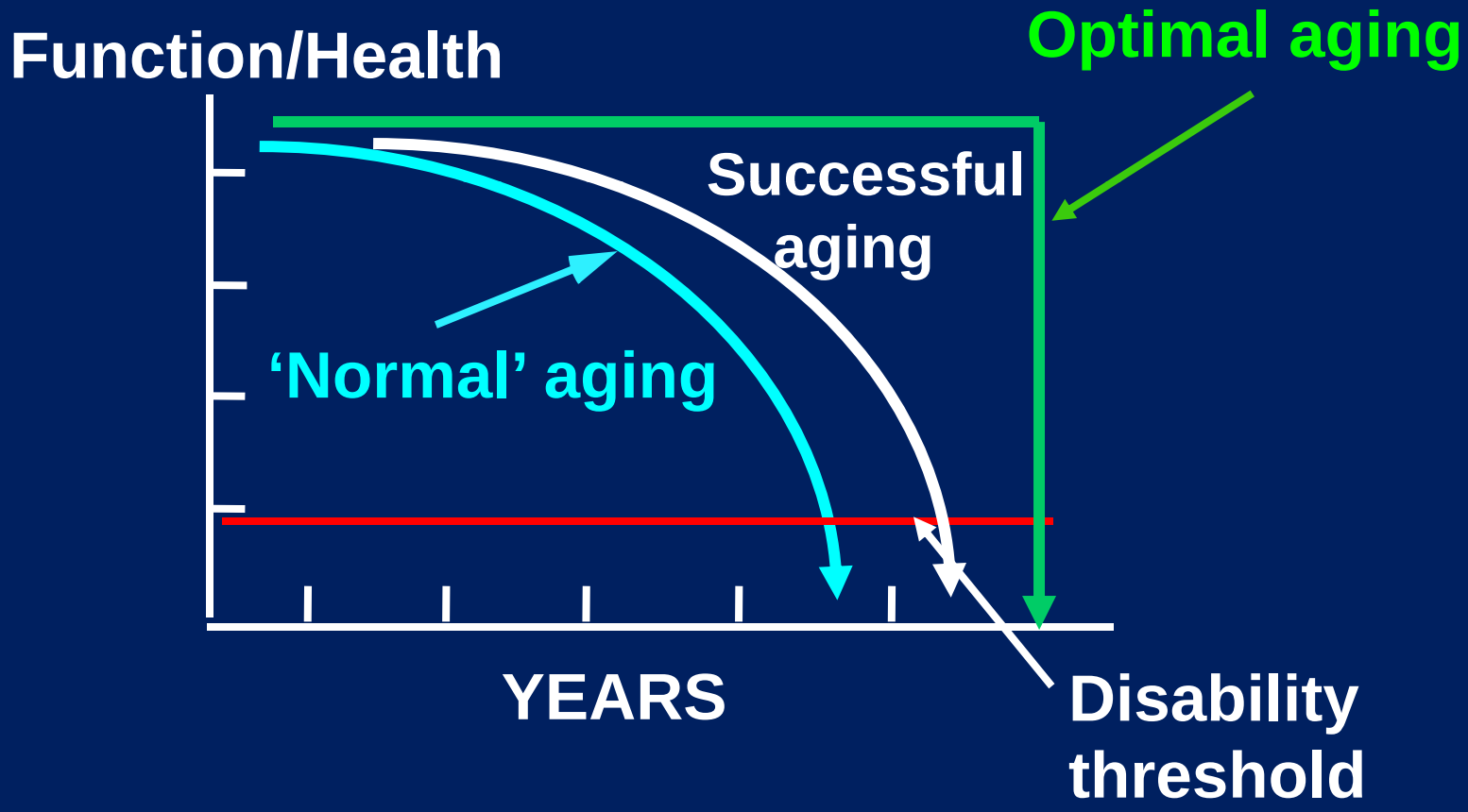
Usual Aging Summary

- Sedentary lifestyle $\Rightarrow \downarrow\downarrow$ functional capacity equal to losses of aging per se
- Major contribution to development/ severity of chronic diseases is related to habitual levels of physical inactivity/activity
- Genetic factors and environmental insults- (i.e. pollution, chemicals, and infectious agents) play some role

Adapted from Friedlander 2006 and Singh 2004

PROMOTION OF SUCCESSFUL AGING

(goal: slow rate of decline)



SUCCESSFUL AGING

- Overall physical, mental, social, and spiritual well-being
- Minimize disability
- Increase longevity
- Decrease morbidity
- Improve physical and mental function
- Enhance quality of life

Centenarians

- Fastest growing segment of population, ≥ 85 second fastest
- Currently 40,000 (1/10,000)
- 3 million baby boomer estimate
- Markedly delay or escape age-related diseases (Heart, Stroke, Diabetes, Alzheimer's)
- 90% independent at 90, 75% at 95
- Older you get, healthier you've been

Longevity Factors

- Apo E2 gene → increased longevity
- Apo E4 → increased Alzheimer's risk

- Other genes
  angiotensin converting enzyme
  HLA - immune function variants
  plasminogen activator inhibitor 1

- Good genes ⇒ age-related disease in late 90s

- Child born naturally > 40 ⇒ 4x↑ likelihood live to 100

- Healthy lifestyle ⇒ live to 80s – lean, no tobacco, handle stress well, exercise, social contact

Promoting Healthy Aging through Lifestyle Changes


BUS
GO
SCAT
257-8426
transit information

Walk Performance Study

- Subjects: 1491 men, 3075 women
  community dwelling, ages 70-79,
  no difficulty walking ¼ mi, 1 flight, or ADL
- Measurements: long distance corridor walk (400meters), and total performance time
- Outcomes: total mortality, cardiovascular disease, mobility limitation, mobility disability after ~ 5 years

Newman et al, JAMA, 2006, 2018-2026

Walk Performance: Hazard Ratios

Mortality

Excluded	Stopped	Adjusted	(age, sex, smoking, leg function)
1.38	1.17	1.00	p<.001 (quartiles for women)

Cardiovascular events

Excluded	Stopped	Adjusted	(age, sex, smoking, leg function)
1.29	1.20	1.00	p=.16 (quartiles for women)

Mobility limitation

Excluded	Stopped	Adjusted	(age, sex, smoking, leg function)
1.52	1.86	1.00	p<.001 (quartiles for women)

Mobility disability

Excluded	Stopped	Adjusted	(age, sex, smoking, leg function)
1.64	1.95	1.00	p<.001 (quartiles for women)

Newman et al, JAMA, 2006, 2018-2026

Person-Environment Interactions may be particularly important for Older Adults

Neighborhood Environment, Physical Activity, and Older Adults

Results from Cross-Sectional studies:

- **Higher pedometer readings among older women living within walking distance (< 20 min. walk) of biking/walking trail, park, or department, discount, or hardware store.**

King WC et al. *Am J Health Promotion* 2003; 18: 74-82.

Results from Prospective, Observational Studies:

- **5-yr survival rates higher in Older Japanese living closer to *walkable green spaces***
  (adjusting for SES, age, sex, marital status)

  [Takano et al. J Epi Commun Health 2002]

- **1-yr risk of developing functional loss** in older Americans **2-3 times higher in neighborhoods with *excessive noise, inadequate lighting, heavy traffic, & poor access to public transportation***

  [Balfour & Kaplan. Am J Epi 2002]