

Aging, Cognition & Financial Health: the case for *whealthcare*

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Penn Medicine

Penn Memory Center
A National Institute on Aging-designated
Alzheimer's Disease Center



Healthy Brain
Research Center
UNIVERSITY OF PENNSYLVANIA

Many thanks to....

- Larry Santucci, The Philadelphia Federal Reserve
- Patricia Boyle, Rush University
- Craig Copeland, Employee Benefit Research Institute
- Philip Marshall

Topics

- How do cognition and behavior change over time, with age?
 - disease and non-disease causes of change
- How do cognitive and behavioral changes impact on day-to-day life, especially financial health?
- What is the economic impact of cognition and behavior impairments?
- What are opportunities for the industry?

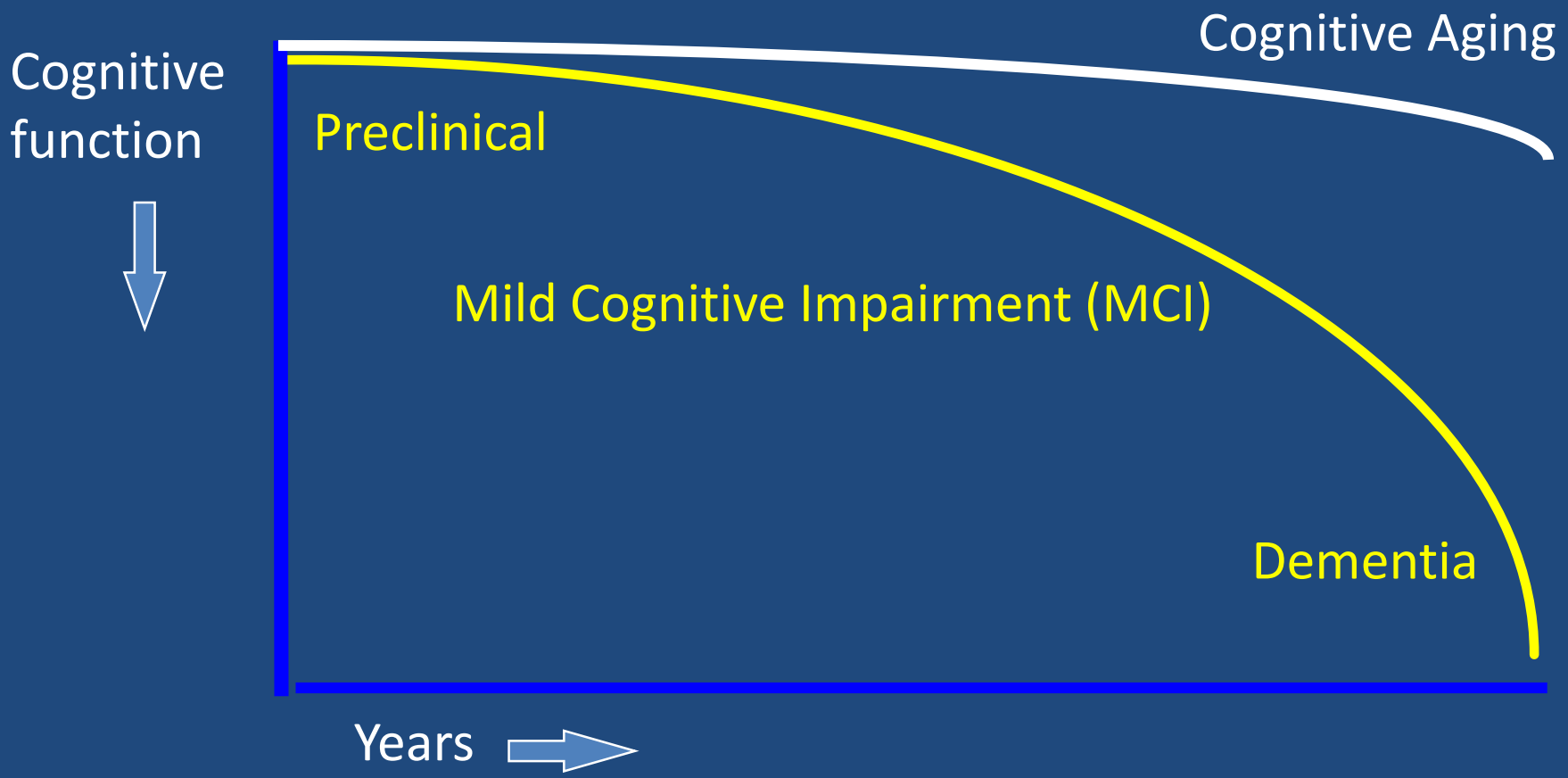
Aging, Cognition & Financial Health

- “Aging, Cognition, and Financial Health: Building a Robust System for Older Americans”
 - The Federal Reserve Bank of Philadelphia, November 28-29, 2017.
- “The Philadelphia Financial Independence Project”
 - Learn more at www.whealthcare.org

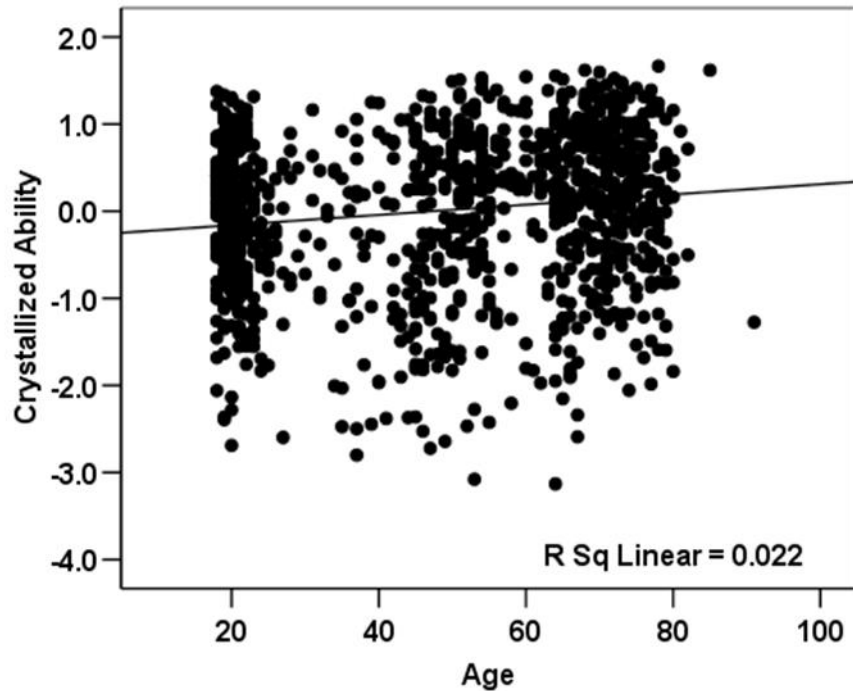
The Aging Brain

- What do we mean when we talk about “cognition?”
 - memory, language, attention, executive function, orientation, visuospatial function, judgment
- What do we mean when we talk about “cognitive aging?”
 - cognitive function measured in the absence of disease
 - we typically adjust for years of education & years of life
- Over years of life, we observe changes in cognition – some domains remain stable, others decline

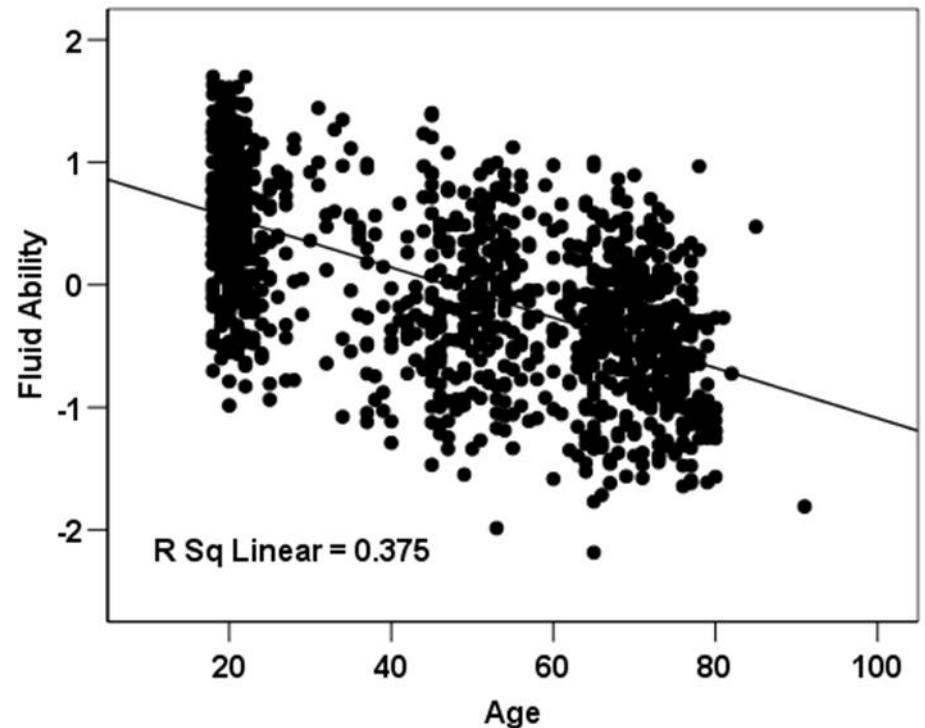
The Aging Brain



A Closer Look At Cognitive Aging



crystallized intelligence or abilities,
knowledge such as...
language skills
a particular topical area



fluid abilities
active processing of new information,
(such as learning a new game)
in novel situations, thinking logically &
solving problems
important to new learning and skill acquisition

The Aging Brain

Key points...

- Aging is associated with changes in cognition....
 - diseases that impair cognition: the most common is Alzheimer's disease, others include vascular, Parkinsons, Lewy Body disease -- **neurons die**
 - Age-related cognitive changes: these are not uniform – there is a lot of variability -- **neurons don't work as well**
 - Older adults often have **both** of these conditions
- Changes in cognition can lead to losses in the abilities to perform tasks and make decisions

THE VANISHING MIND

Money Woes Can Be Early Clue to Alzheimer's



Ryan Collier for The New York Times

As Arthur Packel's dementia grew worse, he forgot how to handle money, and his wife, Renee, could not find where it all went.

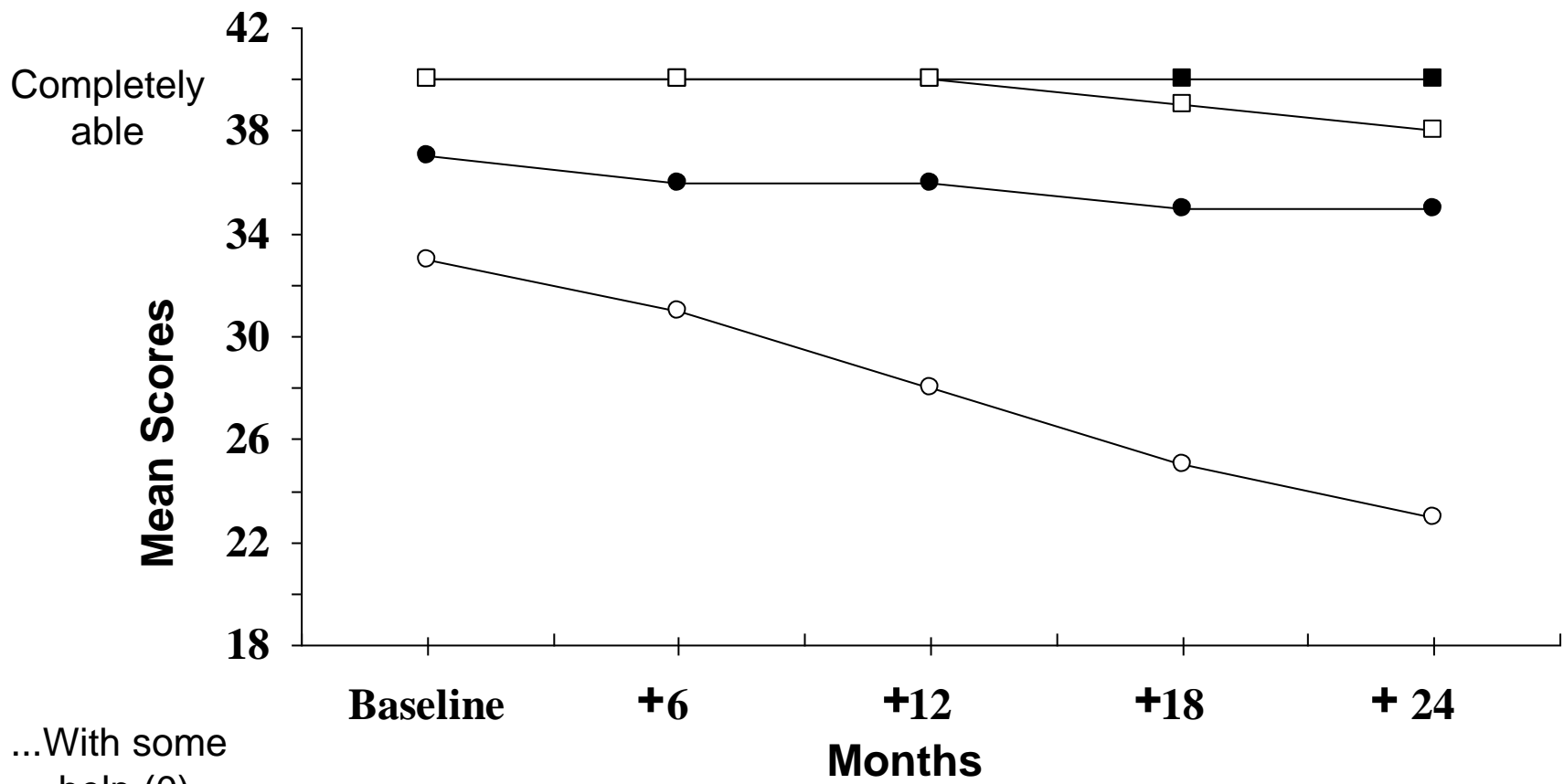
By GINA KOLATA

Published: October 30, 2010

Renee Packel used to have a typical suburban life. Her husband, Arthur, was a lawyer and also sold [insurance](#). They lived in a town house just outside Philadelphia, and Mrs. Packel took care of their home and family.

One day, it all came crashing down.

Mean Scores on Total ADL



...With some help (0)

Comparison Group

■ Self □ Family

Group: NS
 Time: $F=6.54, p<.001$
 Time x Group: NS

Alzheimer's Group

● Self ○ Family

Group: $F=18.1, p<.0001$
 Time: $F=29.4, p<.0001$
 Time x Group: $F=9.78, p<.0001$
 Linear Trend: $F=19.35, P<.0001$
 Cubic Trend: $F=7.39, p<.01$

Kiyak, HA. Teri, L. Borson, S. Physical and functional health assessment in normal aging and in Alzheimer's disease: self-reports vs family reports. Gerontologist. 34(3):324-30, 1994.

The AD Problem

- U.S. prevalence of about 5 million
 - no effective medication treatment
 - over last 30 years, risk of developing dementia has been declining
 - reflecting access to health care (especially CVD), education, social and economic stability
- Monetary costs \$157 to 215 billion (in 2010 \$'s)
 - Most (~60%) of this is the cost of long term care provided by family or professionals in the community
- Elder abuse & neglect costs lots of money but we really don't know how much

Hurd et al. Monetary costs of dementia. NEJM. 2013.

The AD Problem

- “We all know client incapacity is as big an issue as exploitation, if not more.”
 - Mary Shae Tucker
 - Elder Client Initiatives, Wells Fargo

Financial decision making

Chart 32

FUND A	
Gross annual return	8%
Management fee	0.75%
Minimum investment	\$1,000
Years of activity	10

What is the account management fee for this fund?

- (1) 8%
- (2) 0.75%
- (3) 0.10%
- (4) 10%

85% correct

What is the gross annual return on the minimum investment?

- (1) \$8
- (2) \$80
- (3) \$800
- (4) \$1,000

50% correct

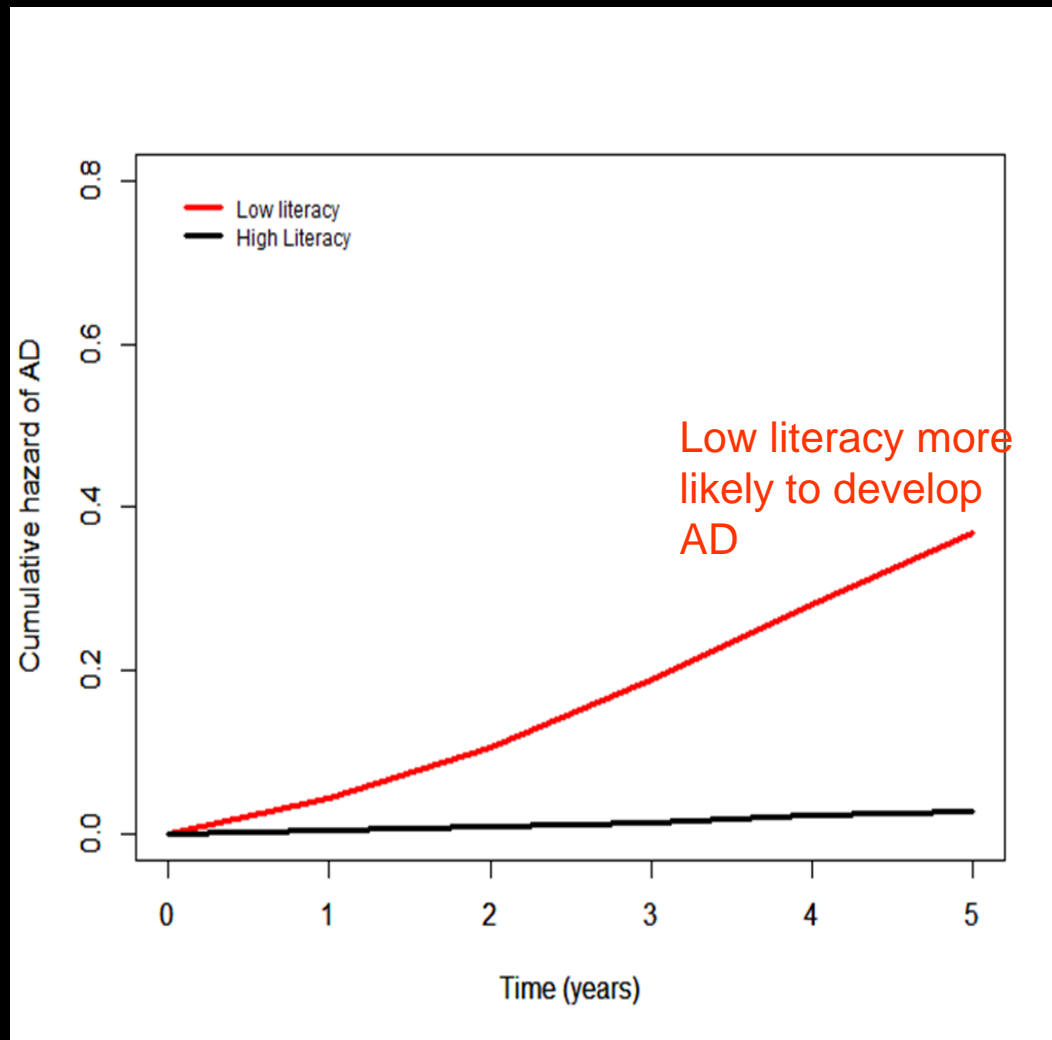
You have \$2,000 to invest. You want a mutual fund that has a management fee of less than 1.5%, one that has been active for at least 5 years, and one that has a gross annual return of at least 6.0%. Based on the information in the table below, which fund should you choose?

- (1) Fund A
- (2) Fund B
- (3) Fund C
- (4) Fund D
- (5) Fund E
- (6) Fund F
- (7) Fund G
- (8) Fund H
- (9) Fund I

25% correct

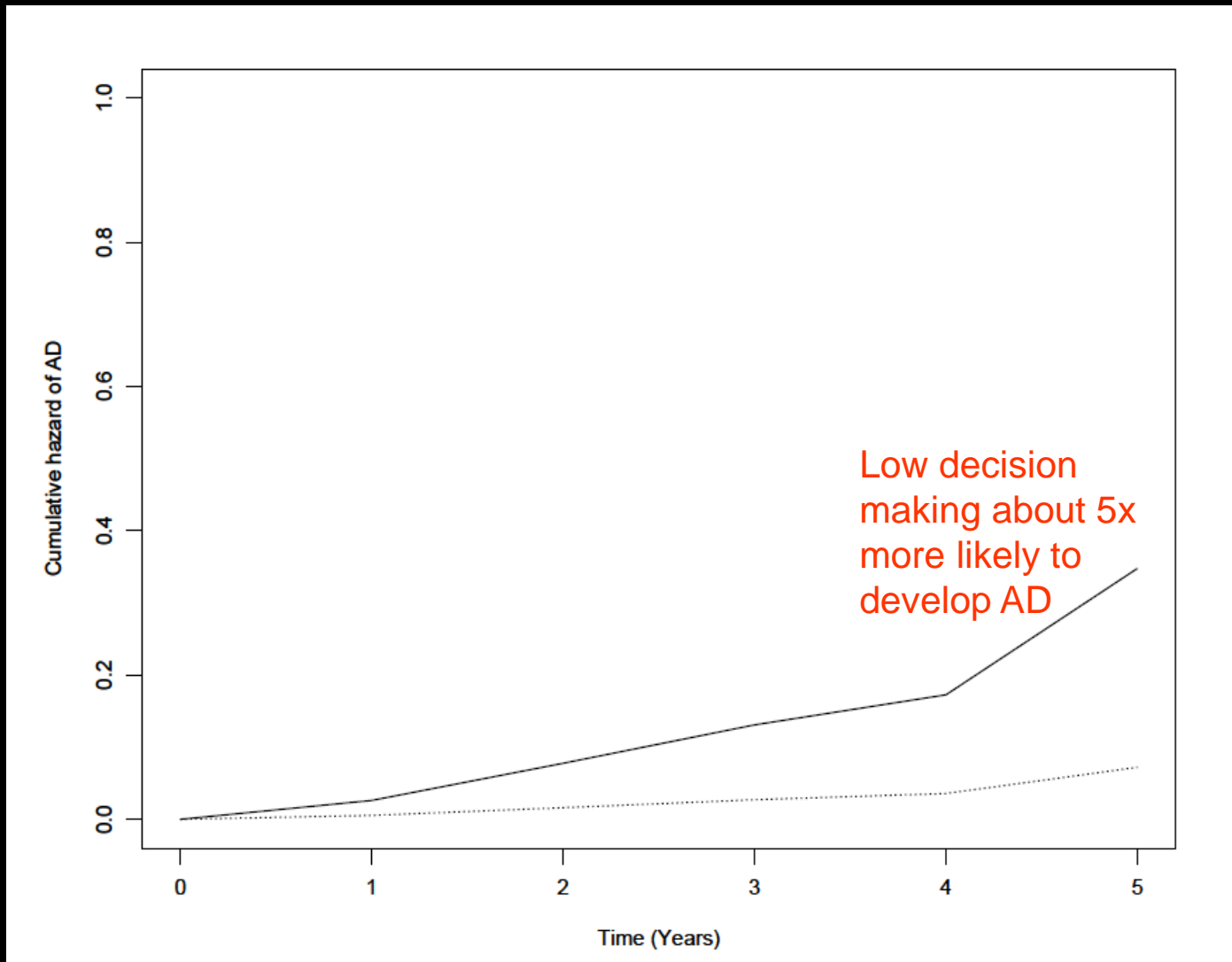
	Gross Annual Return	Management Fee	Minimum Investment	Years of Activity
Fund A	6.25%	0.60%	\$1,500	4
Fund B	7.30%	1.20%	\$2,500	10
Fund C	6.00%	0.80%	\$1,500	5
Fund D	7.00%	1.50%	\$2,000	4
Fund E	7.15%	0.75%	\$2,500	6
Fund F	5.85%	2.00%	\$1,000	15
Fund G	6.20%	1.25%	\$2,500	8
Fund H	4.00%	1.75%	\$500	7
Fund I	5.50%	0.90%	\$1,000	6

Literacy predicts dementia



Wilson et al., 2016; Yu et al, 2017

Decision making about a mutual fund predicts dementia



*Low decision making also more likely to develop MCI

Declines over time

- Financial literacy and decision making decline with advancing age
- Decline in these skills also is related to impending dementia
- Change in financial behaviors likely driven by accumulating disease pathology in the brain

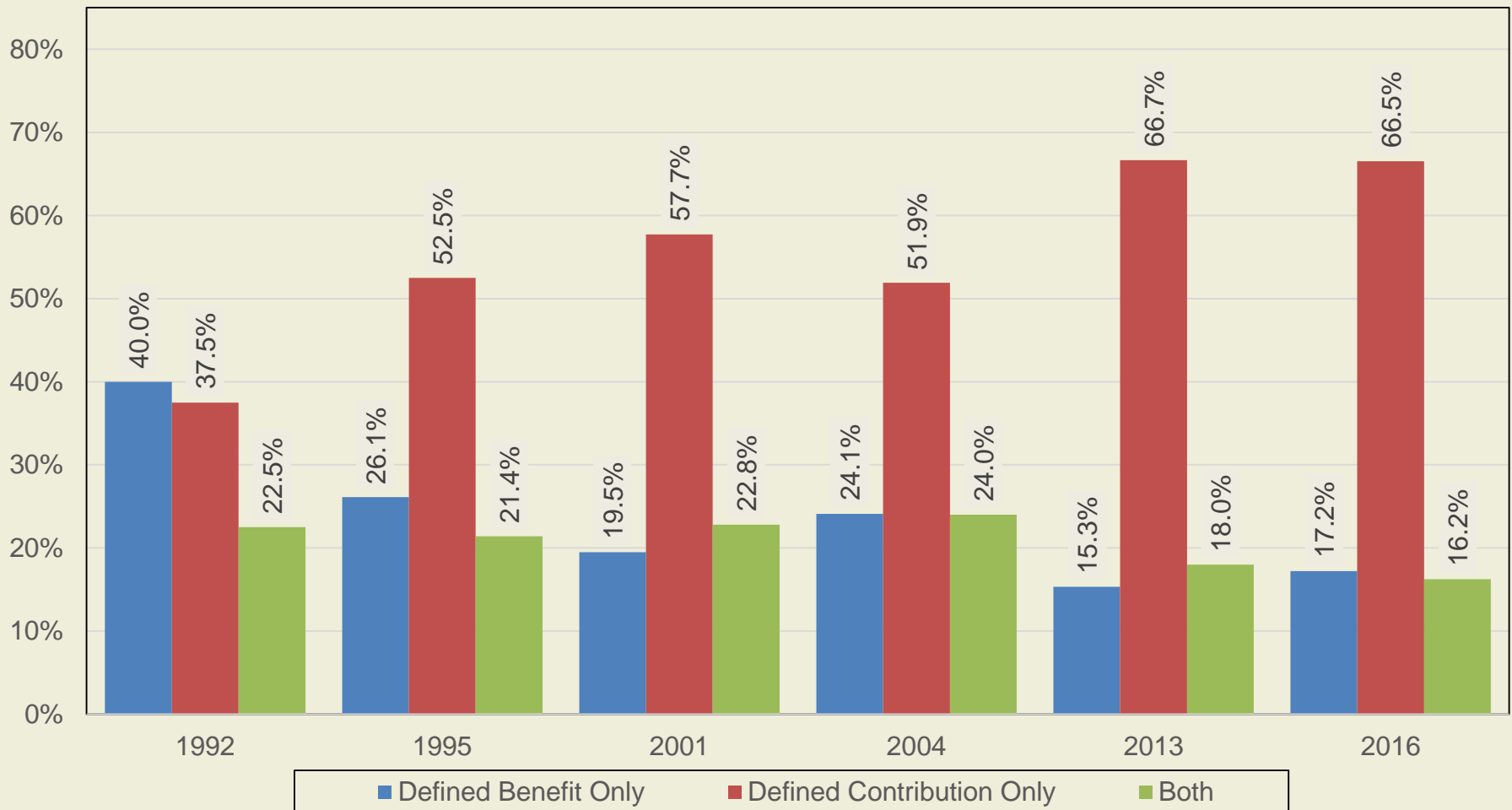
The Economic Ecosystem

Retirement shift to defined
benefit plans

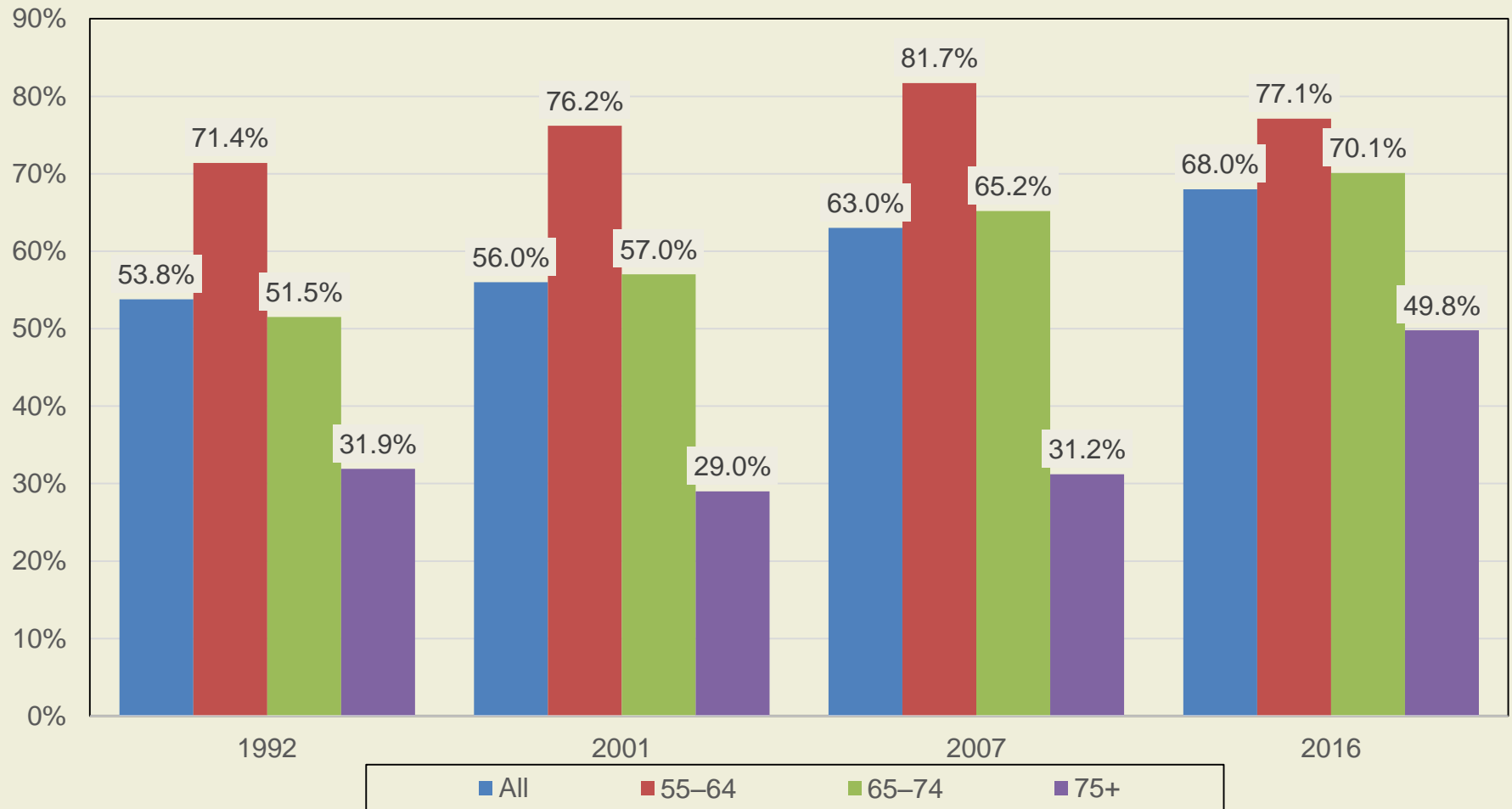
Debt of Older Americans

Paying for LTC

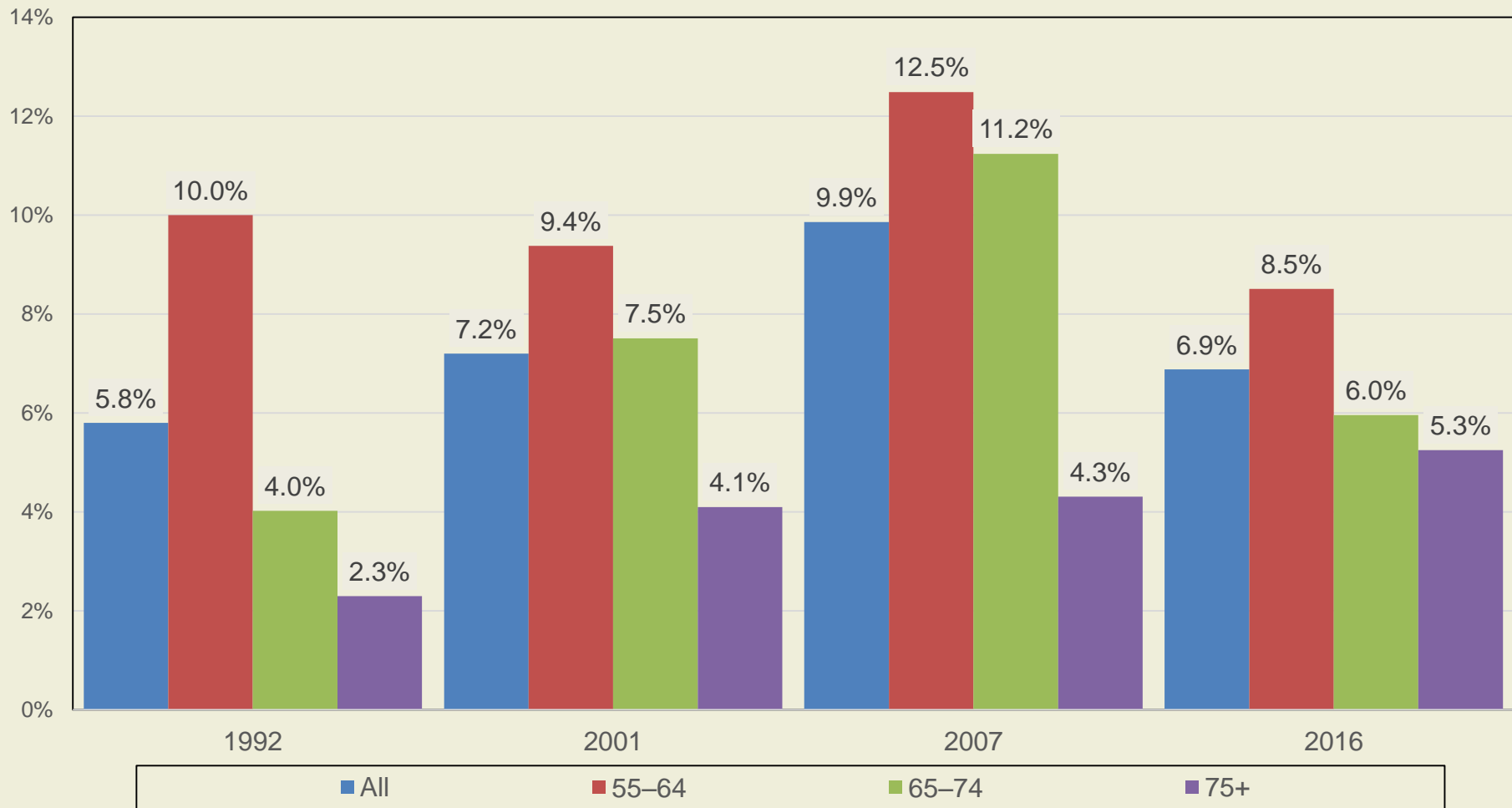
Distribution of Retirement Plan Type for Those Families With an Active Participant in an Employment-based Plan, 1992–2016



Percentage of American Families With Heads Ages 55 or Older With Debt, by Age of Family Head, 1992–2016

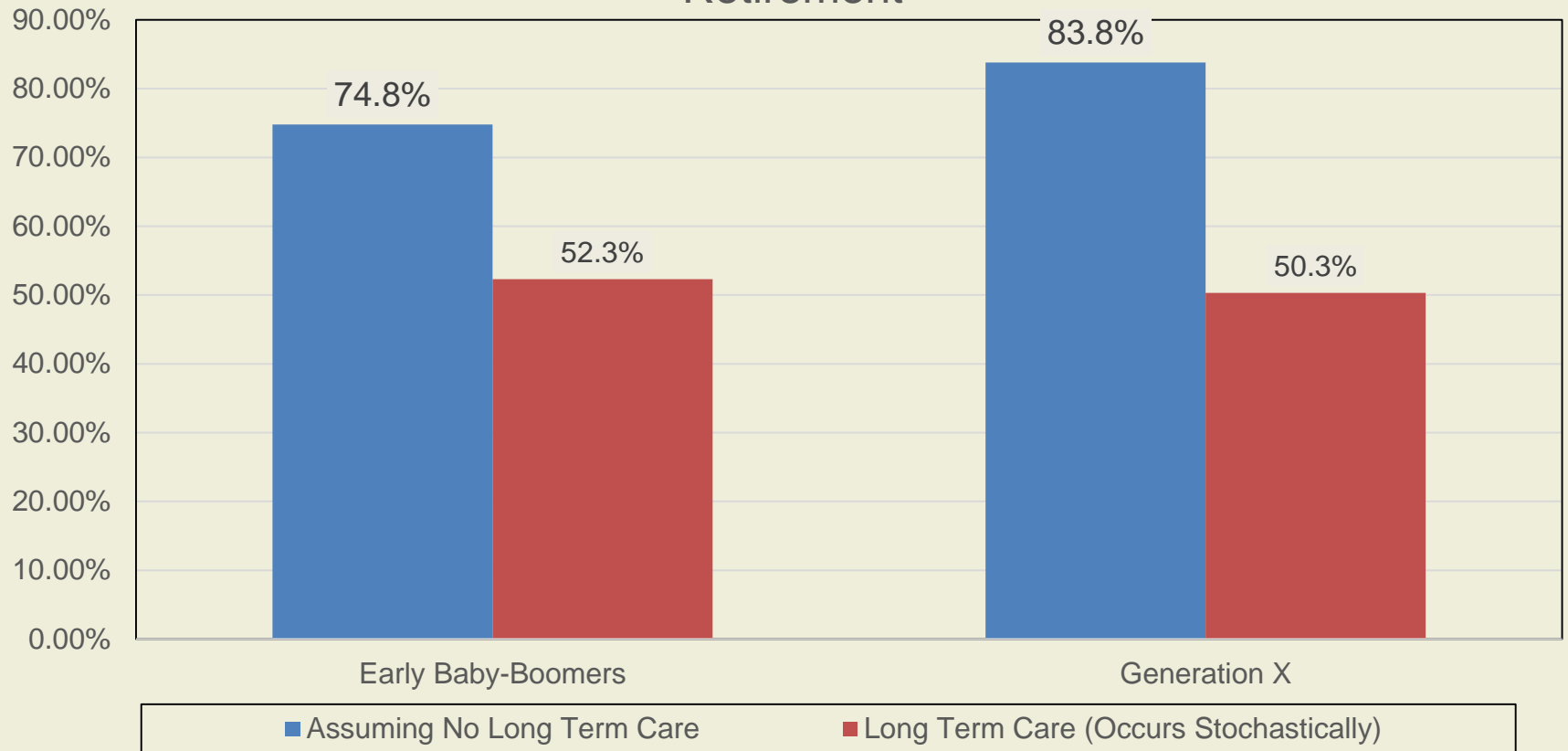


Percentage of American Families With Heads Ages 55 or Older Who Have Debt Payments of Greater Than Forty Percent of Income, by Age of Head, 1992–2016



Impact of Long Term Care on Retirement Readiness, by Age Cohort, 2014

Percentage of Life Paths that Will NOT Run Short of Money in Retirement



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The Opportunities:

From ignorance, to risk management, to whealthcare

- Communication to achieve KYC/TC
 - the post 2165 and 4512 world (at least for investment houses)
- Technology
 - to learn & to surveille
- Systems integration
 - Eldernet
- Privacy
 - whose data is it?