



# *Longevity: How to Think About and Plan for It*

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***It's Human Nature  
to Under-Estimate  
How Long You Might Live***

# How We Think About Negative Events

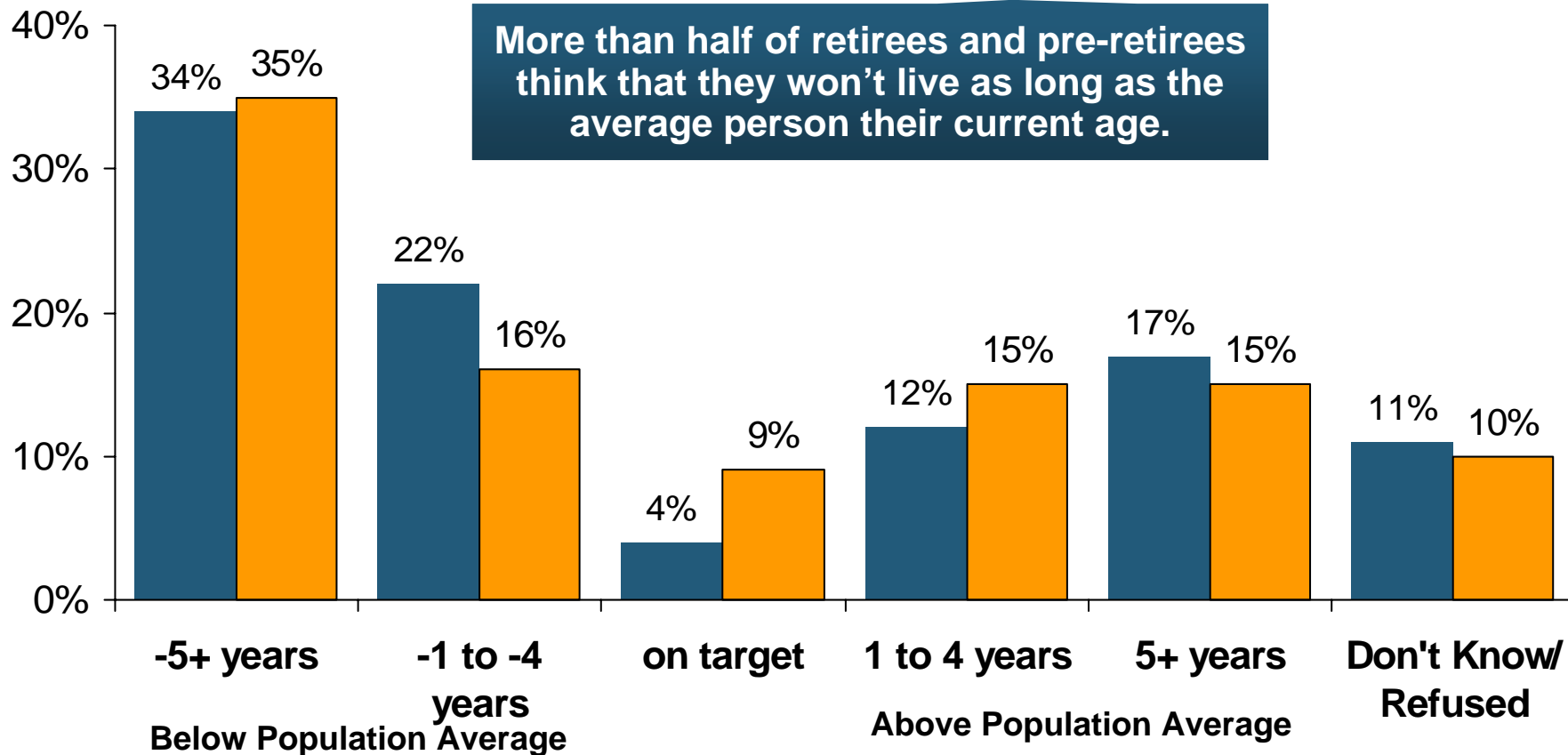
- We often make decisions that are based on behavioral patterns that aren't based on representative facts
  - ◆ We use vivid and easily-remembered examples (such as the notable death of a young person) to shape our notion of longevity even though they might be a misleading indicator of recent longevity experience or trends.
  - ◆ In making choices among uncertain outcomes, (such as how long you might live) most people will minimize their view of a large loss (like outliving your income) and inflate their view of a sure but smaller one (such as not spending money to save it for future years).

# To What Age People Think They'll Live

Percent

Retirees Pre-retirees

More than half of retirees and pre-retirees think that they won't live as long as the average person their current age.



Source: Society of Actuaries, Key Findings and Issues, "Longevity: The Underlying Driver of Retirement Risk," 2005 Risks and Process of Retirement Survey Report, July 2006



# *Perceptions and Mis-perceptions of Longevity*

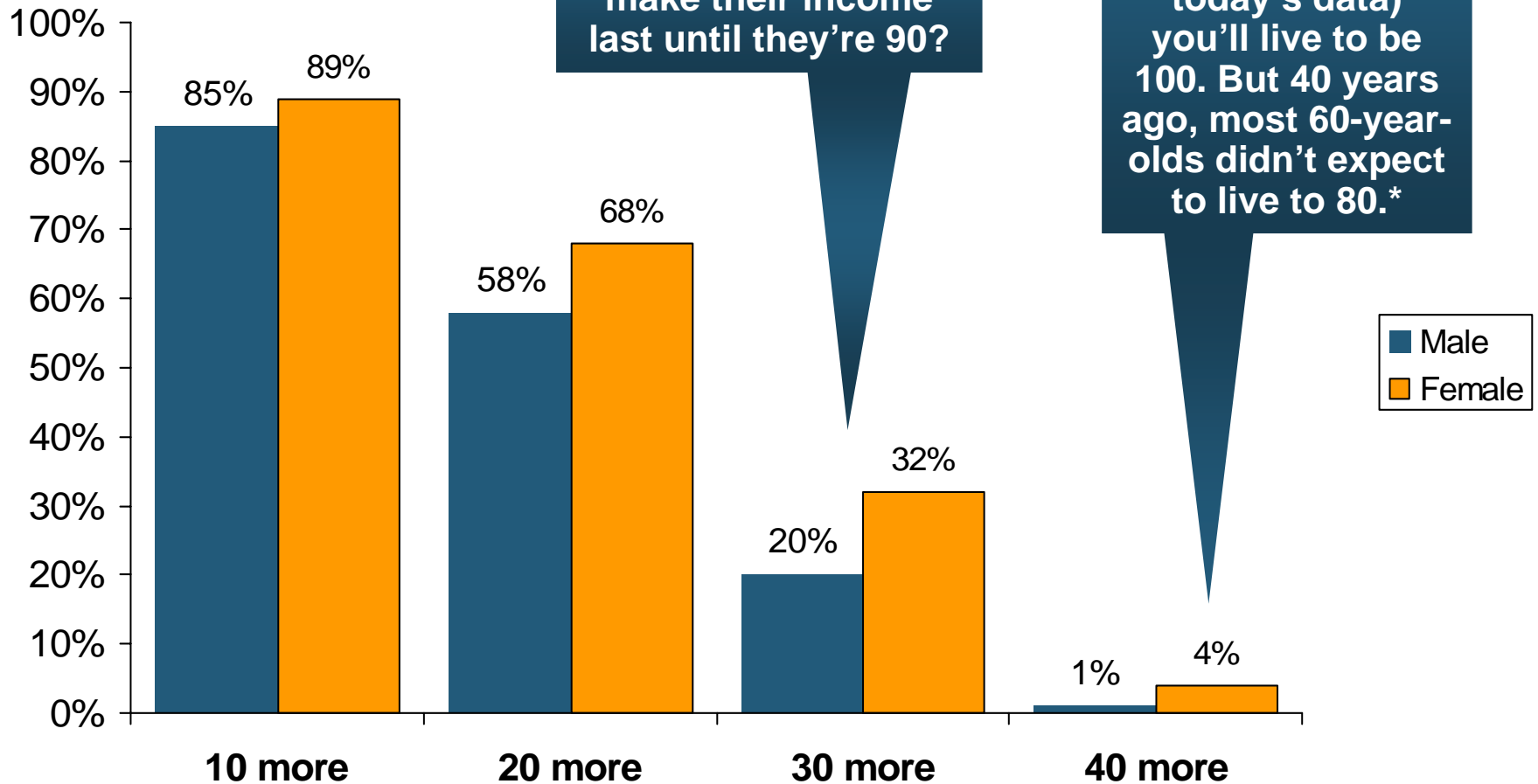
# For Planning Purposes, What is Longevity?

- Longevity is the number of future birthdays you might have
  - ◆ For planning, it's better to view this as a range of ages, not a single age ("life expectancy")
  - ◆ The range of ages is associated with probabilities of survival to those ages
  - ◆ The range should consist of a few variations, each representing different scenarios regarding trends in medical care, environmental and societal factors, and other influences on longevity

References: Warren Sanderson and Sergei Scherbov, "Rethinking Age and Aging," *Population Bulletin* 63 (December 2008); Neal Cutler, "Prospective Age vs. Chronological Age: Why 60 Really Is the New 40," *Journal of Financial Service Professionals* (March 2010).

# How Many Future Birthdays Might a 60-year-old Person Plan For?

Percent Likely  
to Celebrate



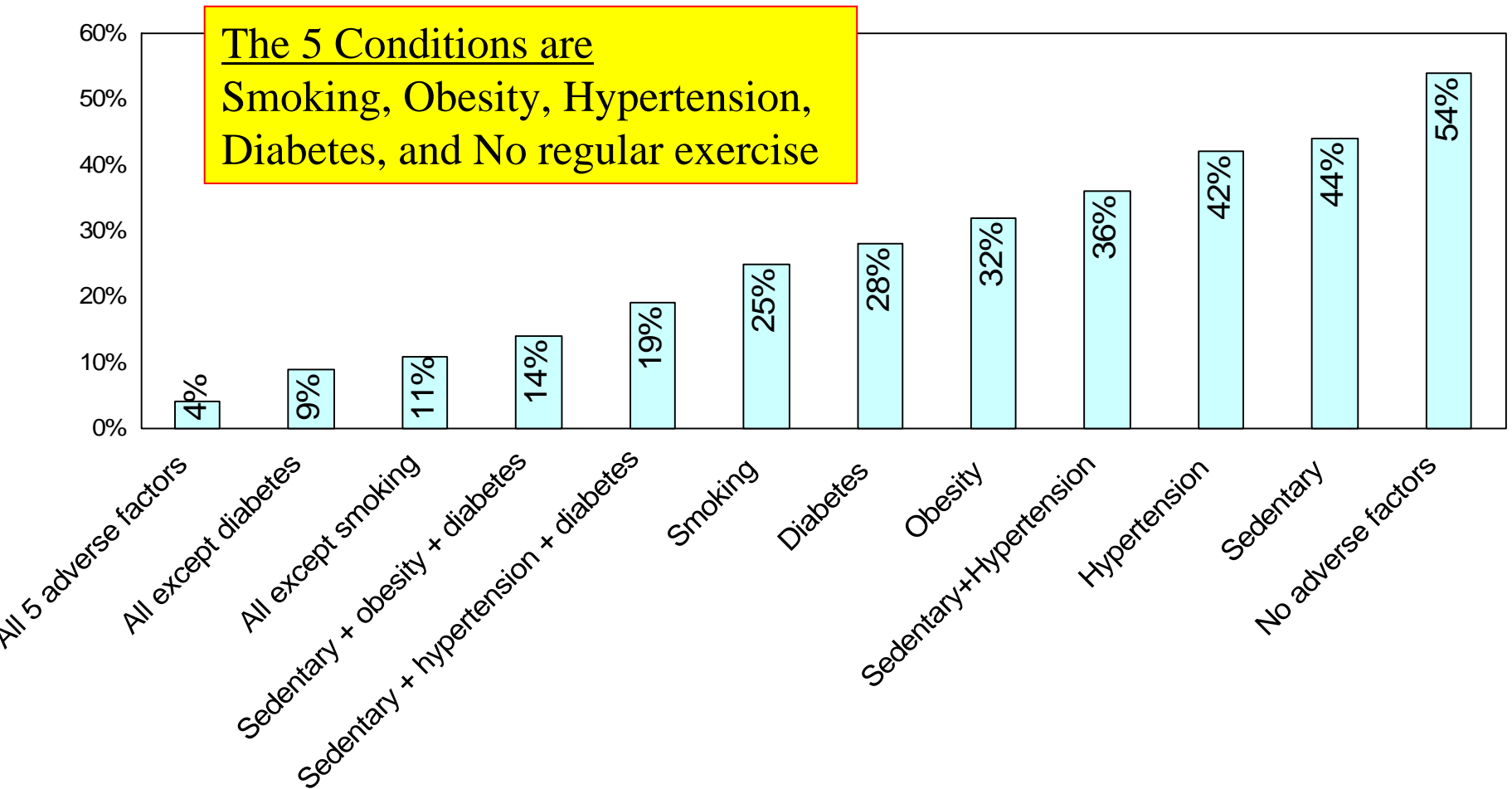
\*The cohort life expectancy at age 60 for birth year 1910 was 77 for males and 82 for females.

Sources: Social Security Administration, "Life Tables for the United States Social Security Area, 1900-2100" (Actuarial Study No. 120), August 2005, Table 7; I.I.I. calculations

# But What if the Longevity Assumptions Are Low?

- On the preceding slide, the longevity data are from the Social Security Administration — essentially for the U.S. population as a whole. But any individual might have a considerably different set of probabilities, based on many factors, including
  - ◆ Family history
  - ◆ Current health status
  - ◆ Access to health care
  - ◆ Social and physical environment

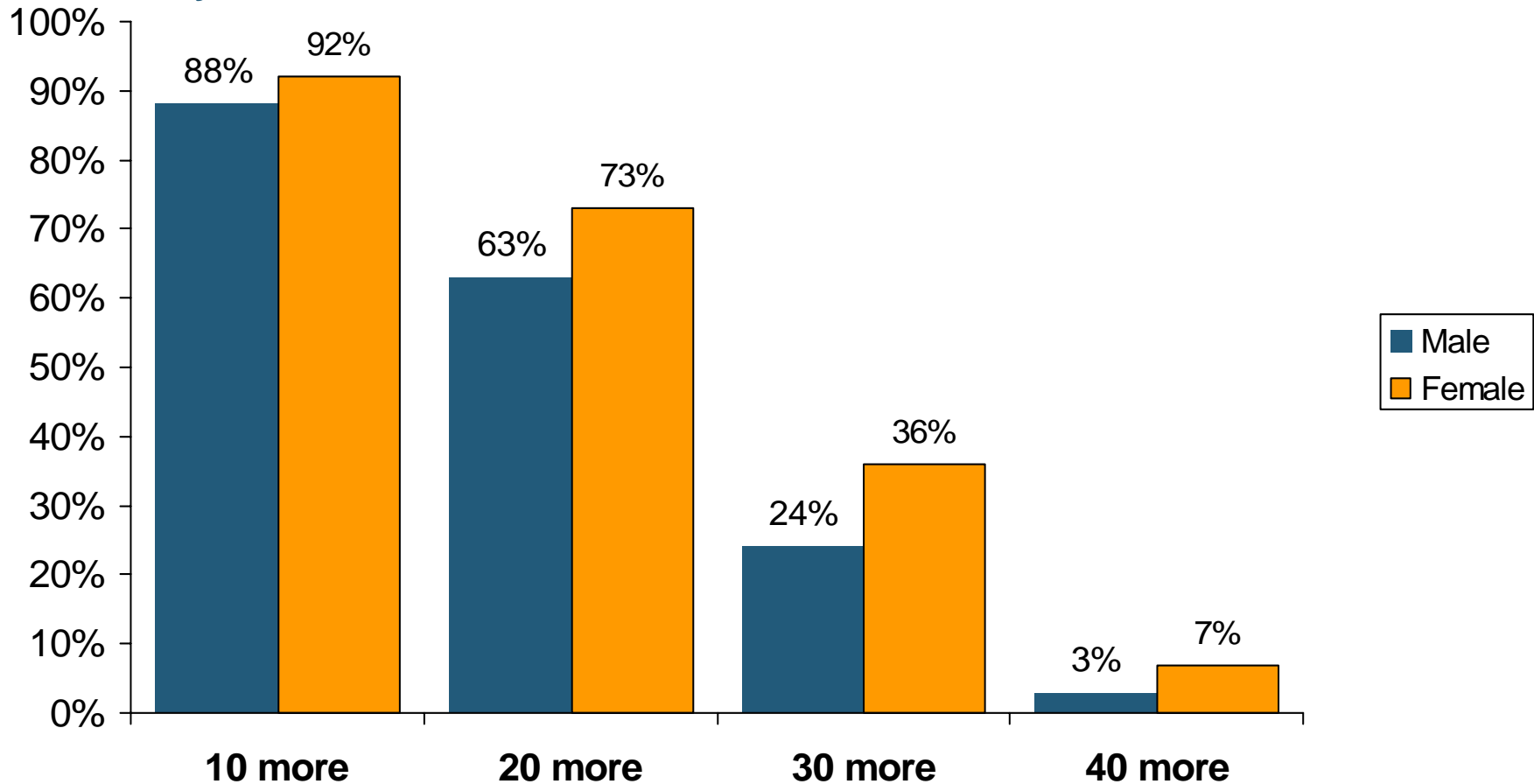
# An Age-70 Man Has a 54% Chance of Reaching 90 If He Avoids 5 Conditions



Source: Yates, Djoussé, Kurth, Buring, and Gaziano, "Exceptional Longevity in Men,"  
*Archives of Internal Medicine*, Vol 168, No. 3 (Feb. 11, 2008)

# What If Longevity Improvement Is Slightly Better than Forecast?

**Percent Likely  
to Celebrate  
More Birthdays**

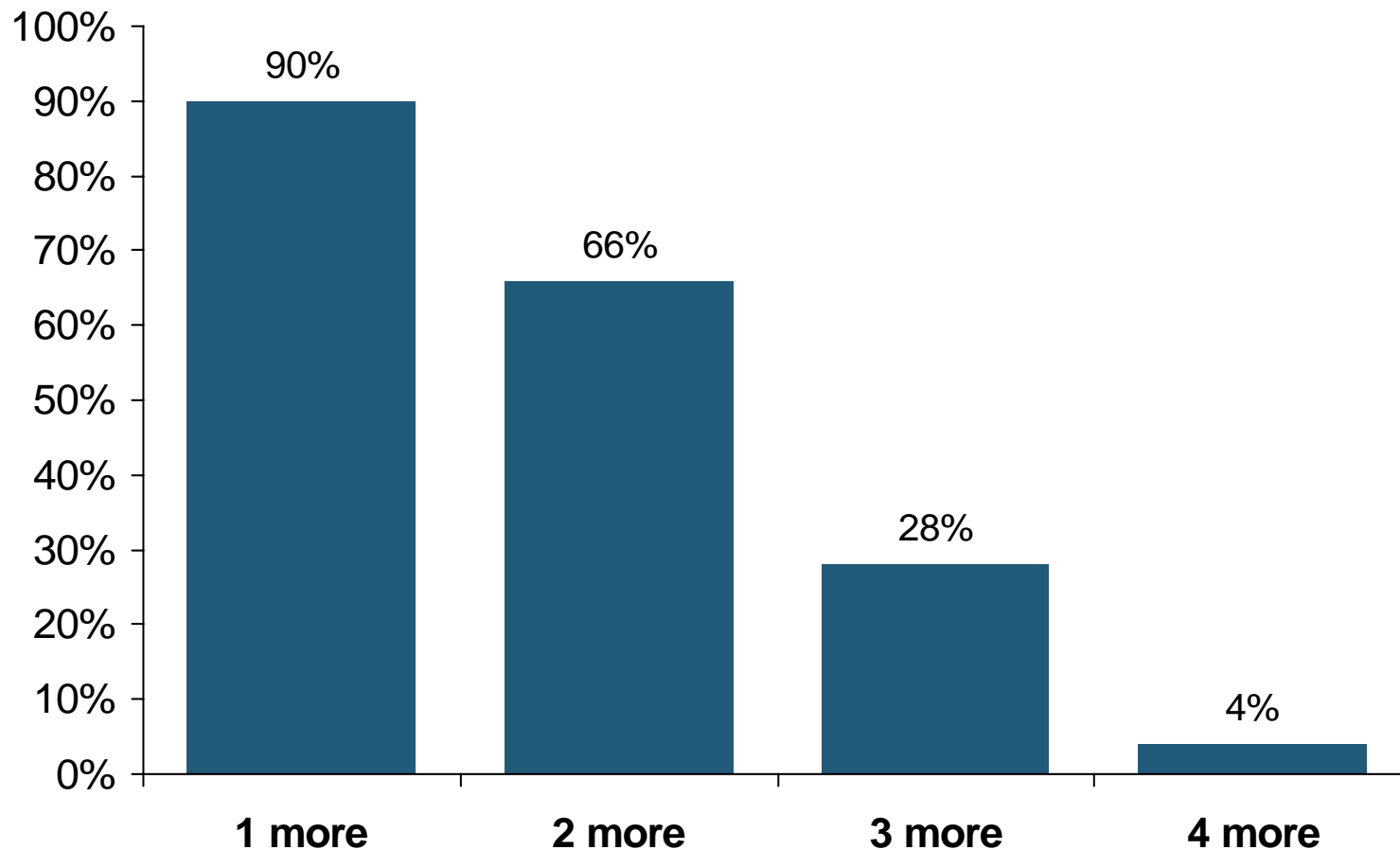


Sources: Social Security Administration, "Life Tables for the United States Social Security Area, 1900-2100" (Actuarial Study No. 120), August 2005; I.I.I. calculations

- You will want to assure that income lasts as long as either of you is alive. Actuaries calculate this as a “joint-life” longevity distribution.
  - ◆ If, for example, both members of the couple are age 65 now, the next slide shows the probability *at least one of the couple* will be alive at the end of the number of decades shown

# Probability That One Member of a Couple, Now Both Age 60, Is Alive Decades Later

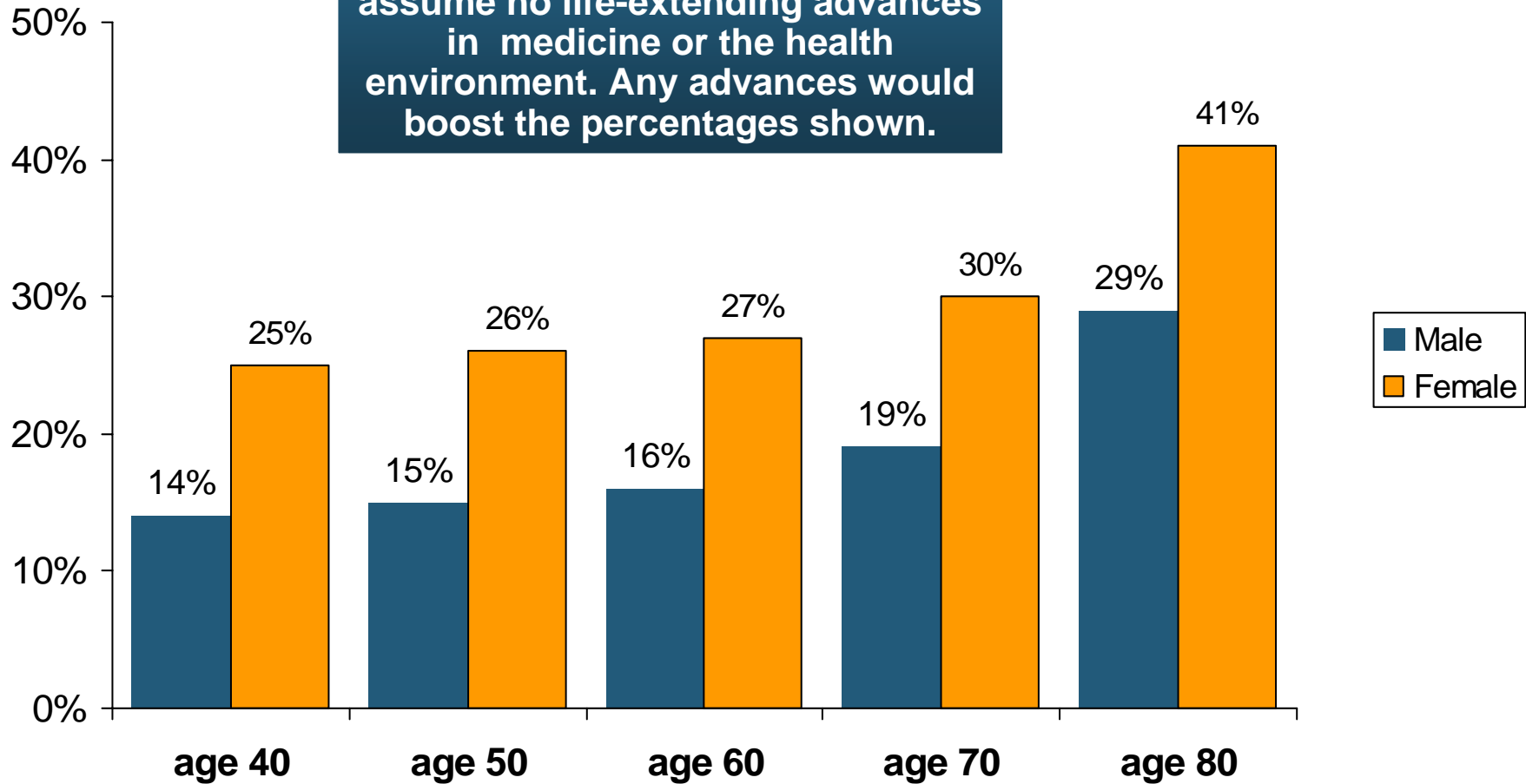
Percent Likely  
to Celebrate



Sources: Social Security Administration, "Life Tables for the United States Social Security Area, 1900-2100" (Actuarial Study No. 120), August 2005; I.I.I. calculations

# Chance of Living to 90? It Grows As You Age

Percent



Sources: Social Security Administration, "Life Tables for the United States Social Security Area, 1900-2100" (Actuarial Study No. 120), August 2005, Table 6, calendar year 2010; I.I.I. calculations

# ***The Effect of Living Longer on Managing Retirement Income***

**If You Are Managing Your Own Retirement  
Funds, Beware of This Often-Overlooked  
“Problem”**

# Example: Male age 65, \$100,000 fund

Year	Age	Planned Income Duration (years)	Income amount withdrawn	End of Year Fund Balance
1	65	22	\$5,318.74	\$100,362.14
6	70	17	\$6,471.06	\$98,665.84
11	75	12	\$7,873.04	\$88,674.01
16	80	7	\$9,578.75	\$65,907.95
21	85	2	\$11,654.02	\$24,011.67

**The problem is that, if he reaches age 80, he has a 27% chance of reaching 90—outliving his income.**

## Assumptions for this example:

6% annual investment return  
 4% inflation (withdrawals match inflation)  
 fund exhausted at end of planned income duration, set at life expectancy plus 5 years

# Example: Male age 65, \$100,000 fund; “reset” at age 80

Year	Age	Planned Income Duration (years)	Income amount withdrawn	End of Year Fund Balance
1	65	22	\$5,318.74	\$100,362.14
6	70	17	\$6,471.06	\$98,665.84
11	75	12	\$7,873.04	\$88,674.01
16	80	13	\$5,784.00	\$69,930.32
21	85	8	\$7,037.12	\$54,823.46
26	90	3	\$8,561.73	\$26,209.81

## Assumptions for this example:

6% annual investment return  
4% inflation (withdrawals match inflation)  
fund exhausted at end of planned income duration, set at  
life expectancy plus 5 years

**Longevity requires a  
big cut in income to  
make the fund last.**

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***Thank you for your time  
and your attention!***