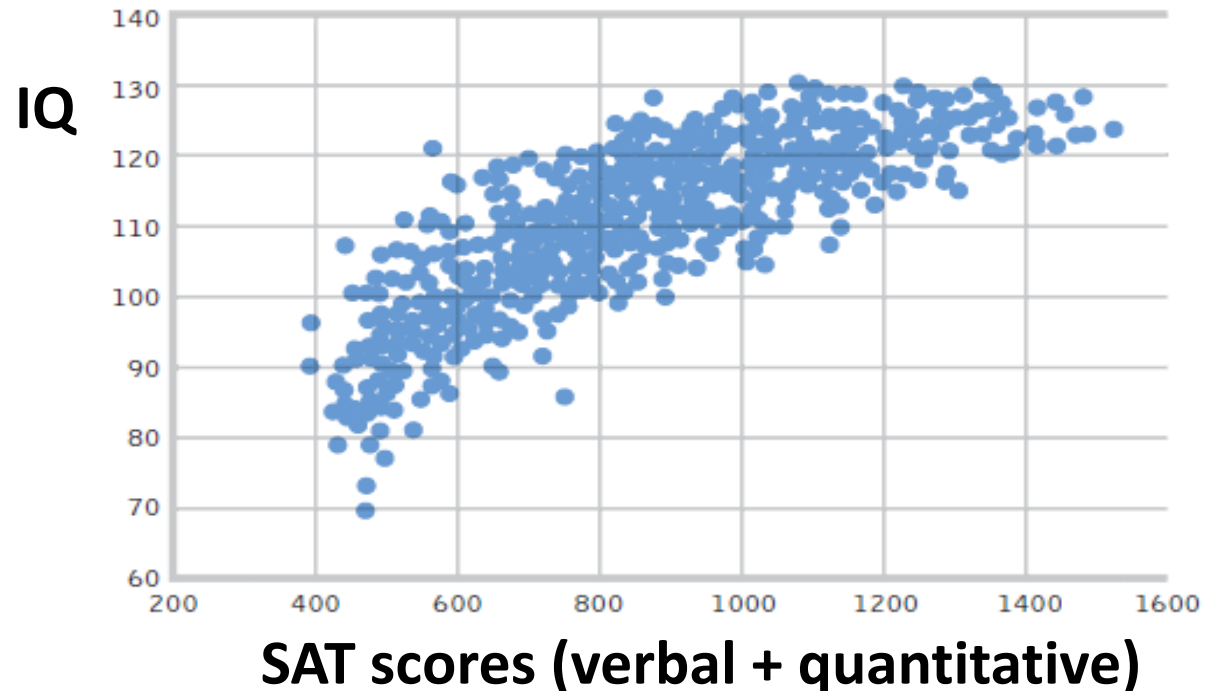


# Aptitude vs. Achievement

- **Achievement tests** measure what you already have learned. Examples include a literacy test, a driver's license exam, and a final exam in a psychology course.
- **Aptitude tests** attempt to predict your ability to learn new skills.
- The SAT, ACT, and GRE are supposed to predict your ability to do well in future academic work.

*If the SAT is an aptitude test, should it correlate with IQ?*



# Standardized Test

- A **test** that has been piloted on a similar population of people as those who are meant to take the **test**; individuals are compared against the norms of the sample population.

# David Wechsler's Tests: Intelligence PLUS

The **Wechsler Adult Intelligence Scale (WAIS)** and the **Wechsler Intelligence Scale for Children (WISC)** measure “*g*”/IQ and have subscores for:

verbal comprehension.  
processing speed.  
perceptual organization.  
working memory.

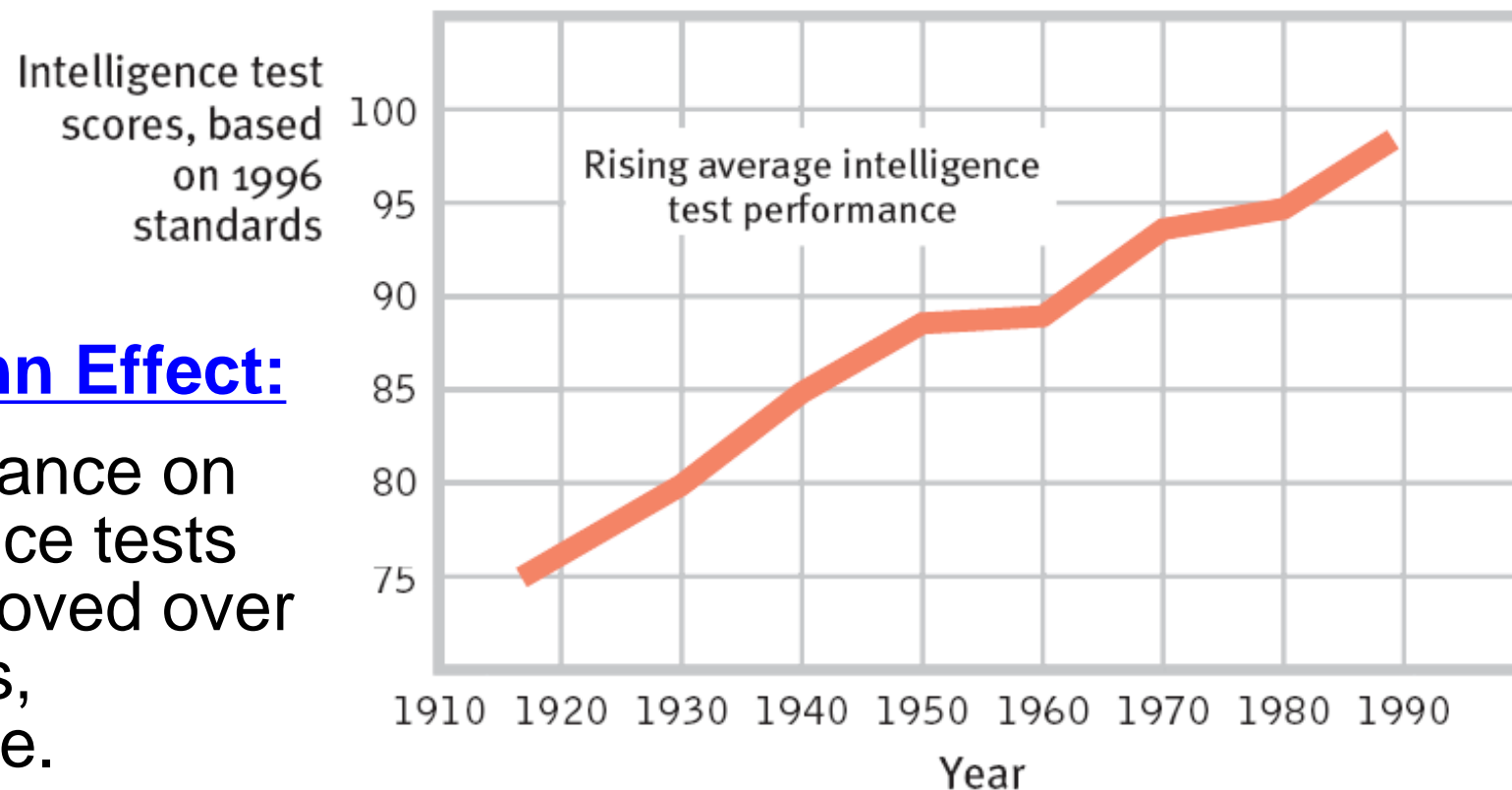


# Re-Standardization and the Flynn Effect

**Re-Standardization:** Re-testing a sample of the general population *to make an updated, accurate comparison group*, in case people are smarter than they used to be when the test was first made.

## The Flynn Effect:

Performance on intelligence tests has improved over the years, worldwide.



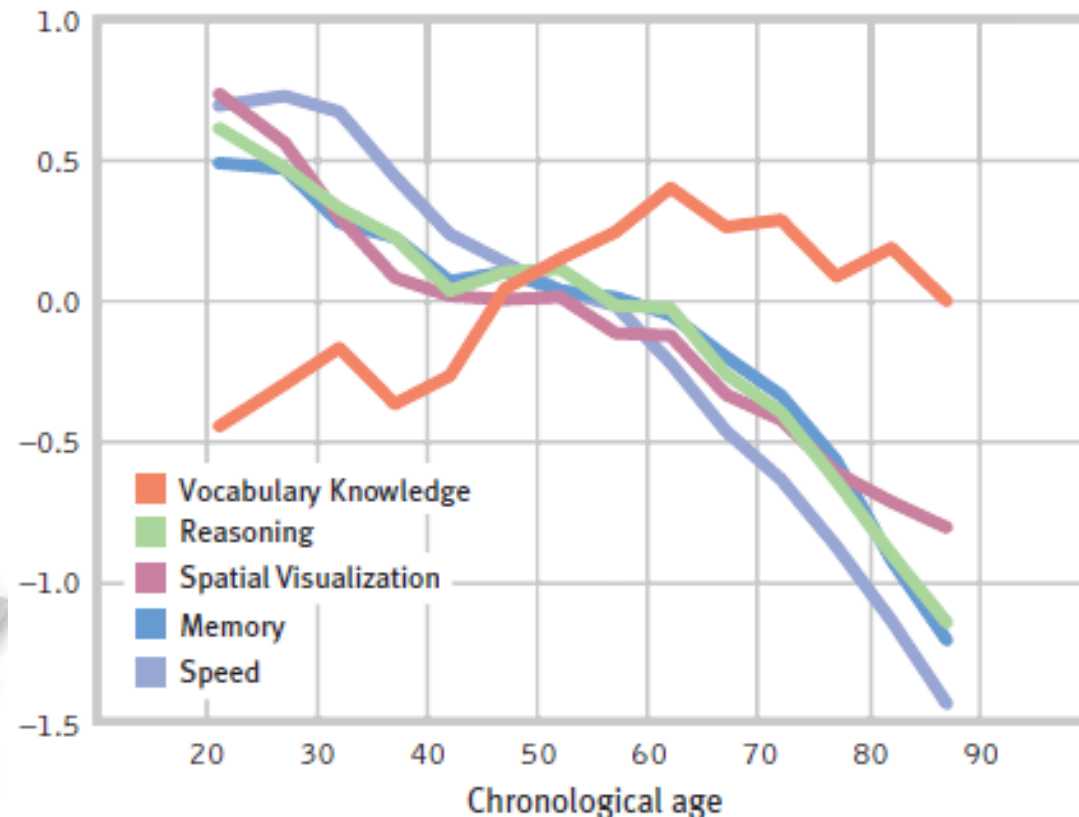
# Stability of Intelligence during Aging:

## *Which type of intelligence?*

Based on this chart, at what age might you do best at completing a crossword puzzle quickly?

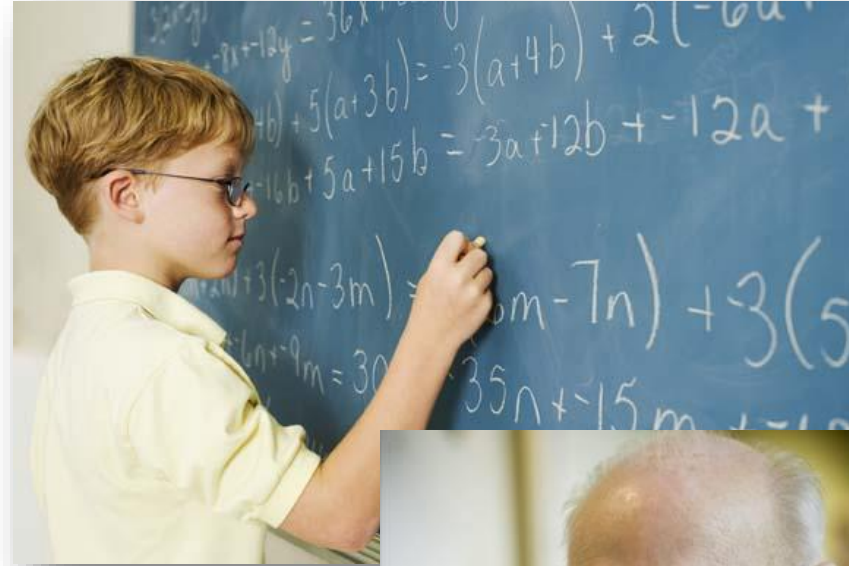


Z-score (standard deviations above or below the mean)



# Fluid and Crystallized Intelligence

**Fluid intelligence** *refers to the ability to think quickly and abstractly.*



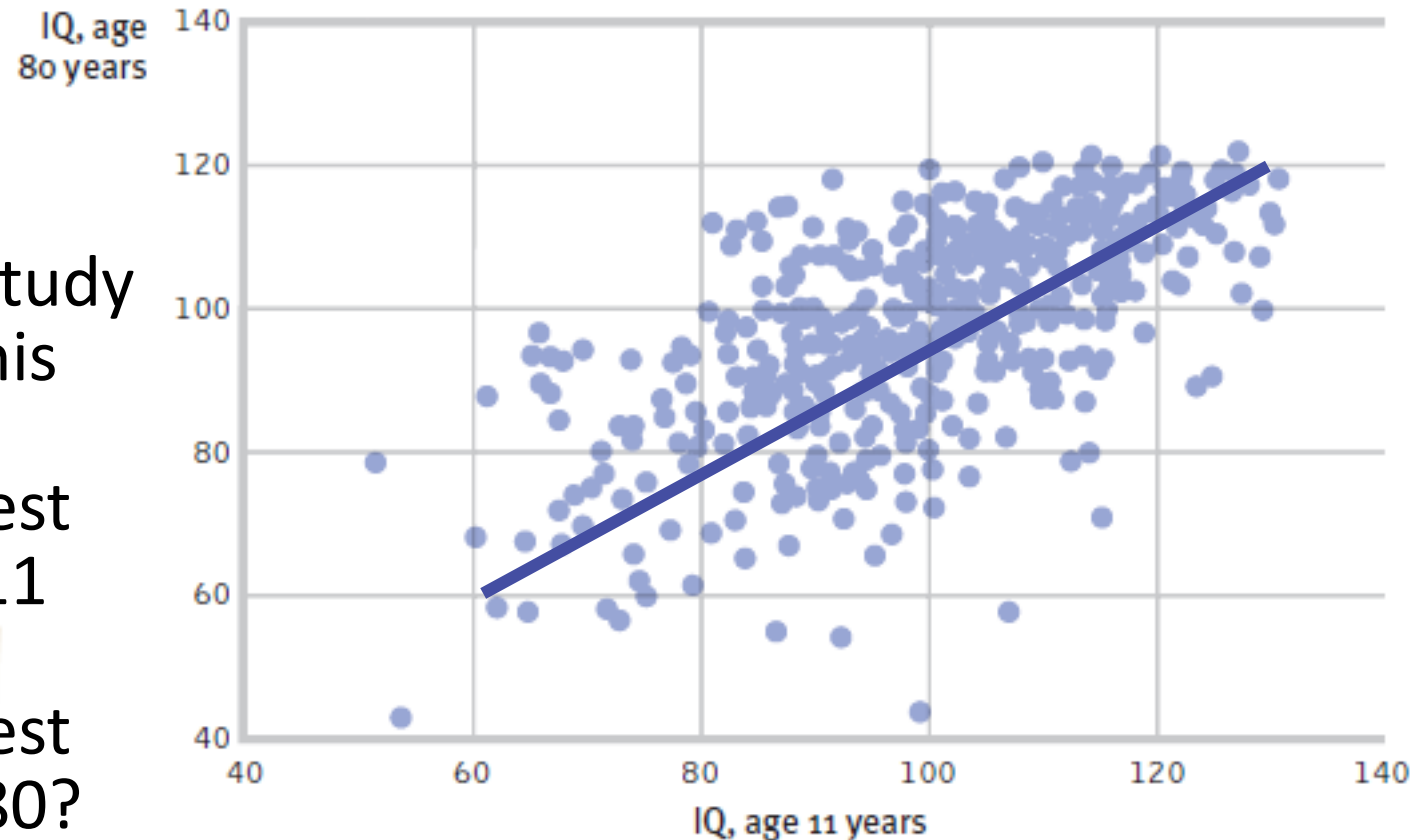
**Crystallized intelligence** *refers to accumulated wisdom, knowledge, expertise, and vocabulary*



# Stability of Intelligence Test Scores Over the Lifespan

Pushing toddlers to learn does not seem to help much. Only by age four is a child's performance on intelligence tests a predictor of future performance on intelligence tests.

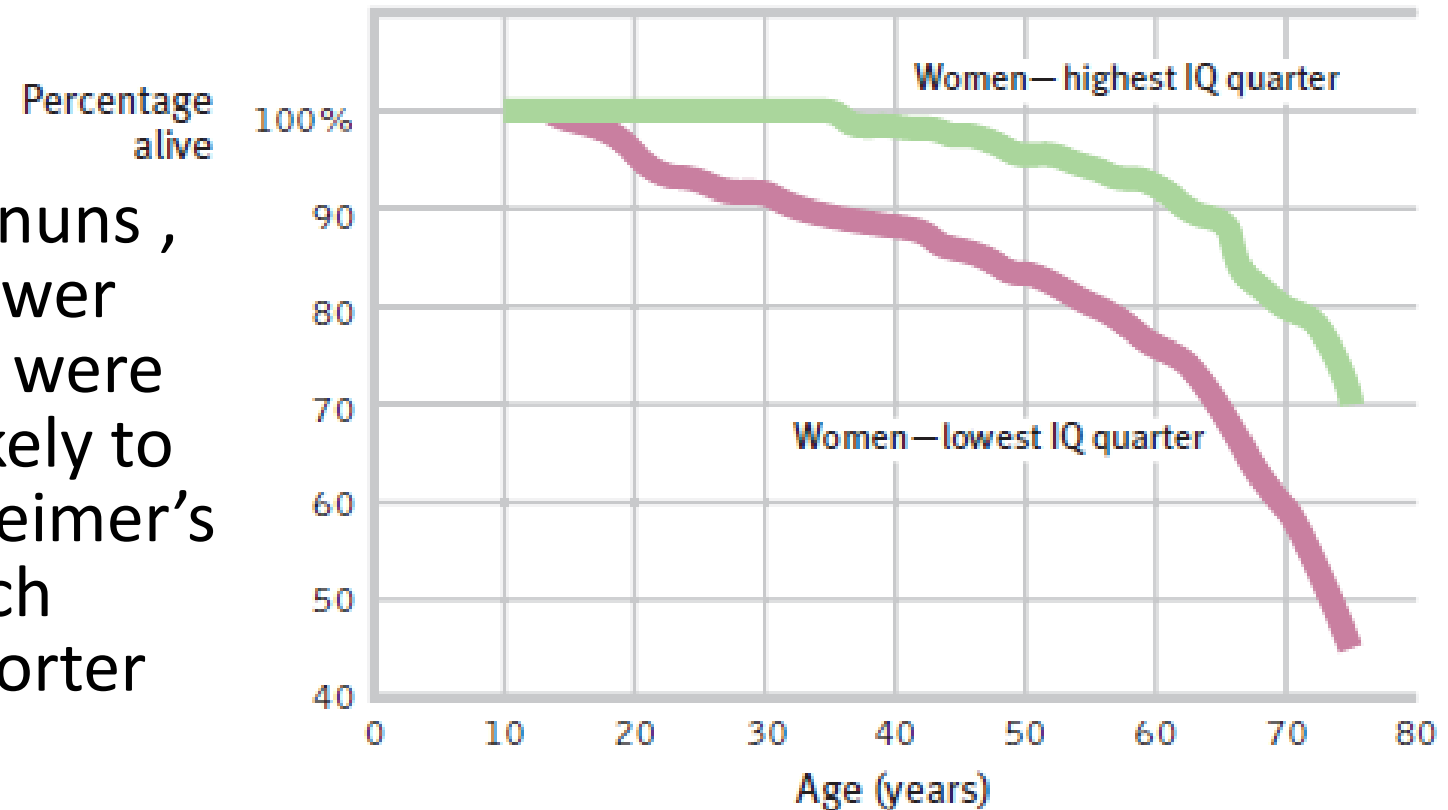
Based on the results of a longitudinal study depicted in this chart, does intelligence test score at age 11 predict intelligence test score at age 80?



# Intelligence and Longevity

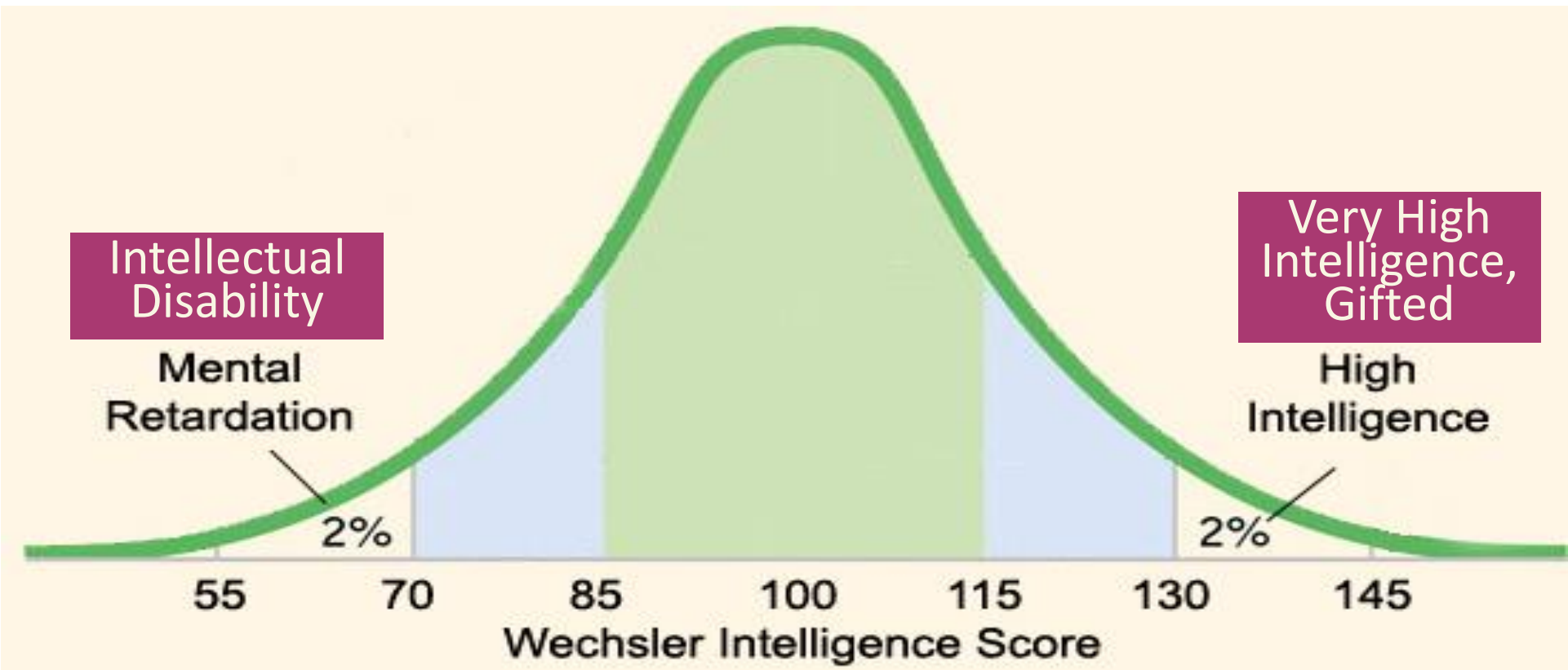
In a Scottish longitudinal study, 11-year-olds with higher intelligence test scores lived longer and more independently and were less likely to develop Alzheimer's Disease.

In a study of nuns , those with lower verbal ability were later more likely to develop Alzheimer's Disease, which includes a shorter lifespan.



# Extremes of Intelligence

The Wechsler Intelligence Scale is set so that about 2 percent of the population is above 130 and about 2 percent of the population is below 70. THIS ALSO SHOWS A NORMAL DISTRIBUTION.



# Extremes of Intelligence



“Intellectual disability” refers to people who

- have an IQ around 70 or below.
- have difficulty with adaptive skills, such as:
  - conceptual skills (literacy and calculation).
  - social skills, including making safe social choices.
  - practical daily living skills such as hygiene, occupational skills, and using transportation.

- 
- Although some people with high intelligence test scores can seem socially delayed or withdrawn, most are “successful.”
  - “Gifted” children, like any children, learn best with an appropriate level of challenge.
  - Segregated, “tracked” programs, however, often unfairly widen achievement gaps.



# Male-Female Ability Differences



- Girls tend to be better at spelling, locating objects, and detecting emotions.
- Girls tend to be more verbally fluent, and more sensitive to touch, taste, and color.
- Boys tend to be better at handling spatial reasoning and complex math problems.
- It is a myth that boys generally do better in math than girls. Girls do at least as well as boys in overall math performance and especially in math computation.

# Ethnic/Racial Differences in Intelligence Test Scores

The bell curve for African American intelligence test scores is centered at 85. For non-African Americans, the average is 100.

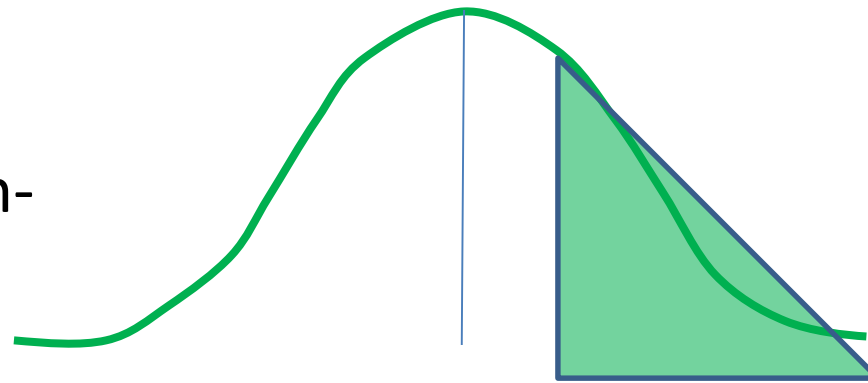
Whatever the cause of this score difference, it is incorrect to use this information to predict the score of an individual.

---

The green triangle shows African-Americans scoring higher than the average non-African-Americans.

How can we interpret this group difference in average intelligence test scores?

We will look at the issue of test bias and other factors affecting scores for perceived minorities.



*But first...*

# The “Racial” Intelligence Test Score Gap

- Racial categories are not distinct genetically and are unscientific.
- Both “whites” and “blacks” have higher intelligence test scores than “whites” of the 1930s.
- “Whites” may have more access to “fertile soil” for developing their potential, such as:
  - schools and educational opportunities.
  - wealth, nutrition, support, and educated mentors.
  - relative freedom from discrimination.

