



Quince Orchard Psychotherapy, LLC

Compassionate, Client-Centered Care

Understanding Psychological Test Results

Written by Jessica Hasson, PhD (Assessment Director)

Psychological testing works by comparing the individual's test results to a comparison sample. We call this normative data. More often than not, the comparison sample is comprised of neurotypical individuals.

We rely on standardized scores for comparison. This allows us to compare individuals to a similar group of others their age. We work a lot with means and standard deviations. Many of our tests are standardized to have a mean of 100 and standard deviation of 15. In general, psychological data is normally distributed, meaning that it follows the normal curve. This is more commonly known as the bell curve. Because of this, we are able to assess where someone when compared to neurotypical peers. The standardization allows us to identify where somebody falls in relation to their peers. This allows us to see areas of strength and areas of weakness compared to their peers. However, it does not tell us about intraindividual strengths and weaknesses. For those we have to look at the individual's scores individually.

Most cognitive tests, including IQ tests, have a mean of 100 and a standard deviation of 15. That means that about 68% of people will score between 85 and 115 and about 95% of people will score between 70 and 130. Scores of 130 and above represent about the top 2% of the population. In other words, only 2 out of every 100 people will score this high. Scores of 145 and higher are even rarer. Only about 1 in every 1000 people will score this high.

The most common IQ test currently use for adults is the Wechsler Adult Intelligence Scale – Fourth Edition or the WAIS-IV. In addition to providing a full-scale IQ score, which is an overall measure of cognitive abilities, the WAIS-IV assesses four different areas. This includes verbal abilities (VCI), nonverbal and spatial abilities (PRI), working memory (WMI), and processing speed (PSI). Each of these composite scores has an average score, or mean, of 100 and standard deviation of 15. It is possible for someone to have strengths in some areas and less-developed areas as well. For example, some individuals have really well-developed verbal skills and may have scores of 140 or higher on the VCI. However, they may struggle with attention and we could see scores in 90's on the WMI. Although this score is average, it does represent an area of weakness for someone whose verbal abilities are in the top 1% of individuals their age. This should be taken into account by the psychologist doing the test interpretation, because this the

Rockville Office: 9707 Key West Ave., Suite 100, Rockville, MD 20850

Frederick Office: 10 North Jefferson St., Suite 202, Frederick, MD 21701

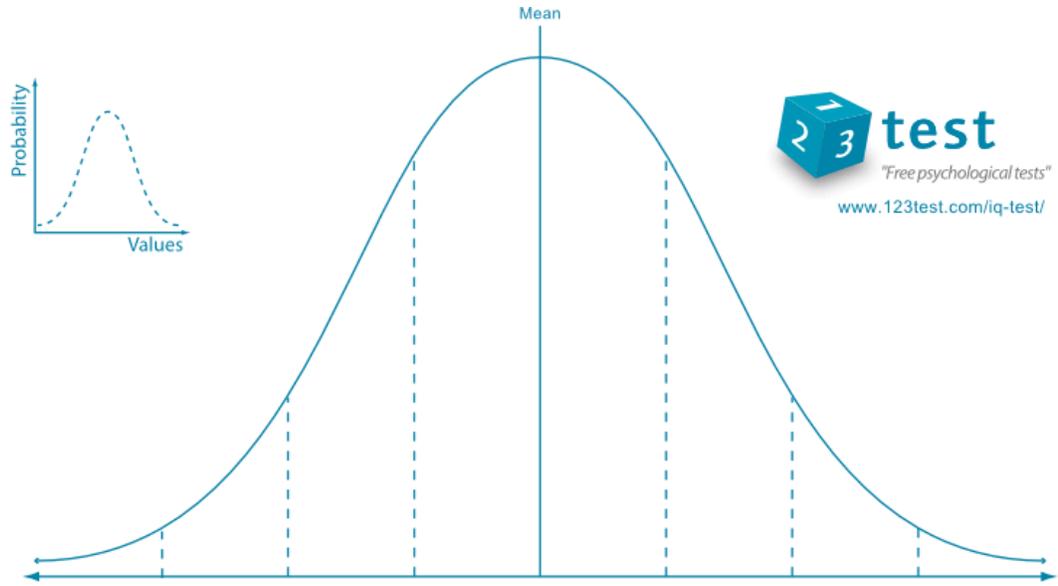
Phone: (240) 750-6467 Fax: (240) 912-7835

Email: contactQOP@priviamedicalgroup.com Web: www.QOpsych.com

individual is going to experience this difference as a significant weakness and this can lead to frustration.

The WAIS-IV is comprised of subtests. The subtests are used to calculate the composite scores in the full-scale IQ score. The subtest underscored a little differently than the IQ and composite scores. The subtests have a mean of 10 and stated deviation of three. This means that about 60% of people will score between 7 and 13 on subtests and about 95% of people will score somewhere in the range between 4 and 16 on subtests. Subtest scores of 19 are exceedingly rare and are seen in only about one in every 1000 people. And like the composite scores, it is possible to have strengths and weaknesses within the subtests. This is true even for subtests that are used to calculate the same index. For example, someone may have extremely well-developed vocabulary skills and an impressive array of factual knowledge. We would expect them to score high on subtests that assess this. However, they may struggle with verbal problem-solving and may score lower in this area as a result. All three of these areas are used in the assessment of verbal abilities.

A thorough evaluator will take all this into account when assessing a person's cognitive abilities.



IQ Score	40	55	70	85	100	115	130	145	160
Probability of cases		≈ 0.0013	≈ 0.0214	≈ 0.1359	≈ 0.3413	≈ 0.3413	≈ 0.1359	≈ 0.0214	≈ 0.0013
Standard Deviation	-4σ	-3σ	-2σ	-1σ	0σ	+1σ	+2σ	+3σ	+4σ
Cumulative %		0.1%	2.3%	15.9%	50%	84.1%	97.7%	99.9%	
Z Score	-4.0	-3.0	-2.0	-1.0	0	+1.0	+2.0	+3.0	+4.0
T Score		20	30	40	50	60	70	80	

