

How to... interpret test scores

Standardised tests come with a handbook or manual that gives precise instructions on how to administer, record and score the test. They should also contain the statistical data that tell us how the test was standardised and the subsequent tables of standardised scores, percentile ranks and confidence intervals. To understand what your test is measuring you must also understand this part of the test. You need to check that the child whose results you are interested in comes from a population comparable to that of the test e.g. a test standardised on children in the USA will not be immediately applicable to a child living in the UK. Watch out for age limits: if the child is too old or young for the test then the standardisation does not apply. Not all tests are made equal!

What is a raw score?

The raw score (RS) is the number of items a client gets right. Each test will specify how to calculate the RS, it is not always as straightforward as adding up the correct items and excluding the errors. Read the manual carefully.

What is a standard score?

Standard scores (SS) base the interpretation of a client's score in relation to the normative sample and are expressed in units that are presumed to be equal. These are useful in comparing a client's performance across different tests and subtests. A standard score of e.g. 70 or 7, should be equivalent across different tests (but check out the standard deviation). Some tests have a mean SS of 10 and some of 100. *N.B. you must use the test manual to calculate standard scores as the calculation with raw scores differs from test to test and across ages.*

What is a confidence interval?

The confidence interval (CI) is the range of standard scores in which we know the exact probability that the person's true score will fall. For example, a 68% confidence interval is a range of values within which the true score will be found 68% of the time. What is the person's true score? Imagine it were possible to test a person a large number of times on the same test (ignoring practice effects etc). Their score would not be the same every time, because of day-to-day variability, momentary distractions etc. But there would be normal distribution around the true score, with the distribution related to the test measurement error: its reliability. Some tests are very unreliable with huge confidence intervals particularly with children at the extreme ends of the age ranges (preschoolers & adolescents) so you should check the manual. It is good practice to calculate the CI and treat your results with suitable caution.

What is a percentile?

A percentile (or sometimes centile) rank score bases the interpretation of the client's score in relation to a particular reference group (100 individuals) e.g. If a child is on the 3rd percentile in a group of 100 children, two would perform worse and 97 would perform better than the child if the child is drawn from the same population as the reference sample. Tests usually have tables in the handbook which convert standard scores to percentile or centile scores.

What is an "average" score?

A score within 1-1.5 SD of the mean is considered to be within the **average range**. Hence a person's score falls below the average range if:

- it falls below the 10th - 16th percentile
- it falls below 1 - 1.5 SD below the mean

You cannot ever reliably say that a score indicates a person's performance is 'below average'. A percentile score of e.g. 25 is within the average range and would probably not indicate any action is required. It is easy to see, from for example the confidence interval score, that standardised assessments are not as accurate as we think they may be.

What is an age equivalent score?

The raw score is expressed in terms of the age at which the average person attains that level of performance. *This is probably the least reliable method for comparing a child's abilities to the typical population because there is a wide variation in what typically developing children do. It should only be used if there is no other measure available.*

What is a standard deviation?

The standard deviation (SD) is a measure of the spread of scores that takes into account how far each individual score falls away from the mean for a particular population. It forms the basic unit of the normative sample.

What is a Z score?

The z score is the number of standard deviations an individual score is from the mean of a normative population. 16% of the normative population will have a z score of -1 or lower, 2% will have a score of -2 or lower. Z scores are a way of comparing a person's results across tests.

Many things affect the accuracy of a test result...so treat them with caution at all times.