

Chapter 8: *Comparing Two Repeated Group Means: The Paired Samples t Test*

Statistical Concept	Plain English Description	Mathematical Formula
Paired samples t test statistic (t)	Mean of the difference scores divided by the standard error of the difference scores	$t = \frac{\text{Mean of the difference scores}}{\text{Standard error of the difference scores}}$
Standard error of the difference scores	Standard deviation of the difference scores divided by the square root of the sample size	$S_D = \frac{\text{Standard deviation of the difference scores}}{\text{Square root of the sample size}}$
Degrees of freedom (dfs)	Total sample size – 1	Degrees of freedom = Sample size – 1
Effect size (Cohen's d)	Mean difference score divided by the standard deviation of the difference scores	$d = \frac{\text{Mean difference score}}{\text{Standard deviation of the difference scores}}$
Confidence interval	Mean difference, \pm the critical value multiplied by the standard error of the difference scores	95% CI = Mean difference \pm critical value for t \times (standard error of the difference scores)