

Figure 9.4 Annotated SPSS Output for a Related t Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Drug	194.8333	6	13.64429	5.57026
	Placebo	190.8333	6	14.28869	5.83333

Mean:
Sample means (M)

N:
Sample sizes

Std. Deviation:
Standard deviations for each treatment (SD)

Std. Error Mean: Standard errors of the means;
Computed as SD_d/\sqrt{N}

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Drug & Placebo	6	.970	.001

Paired Samples Correlations:
This table is not needed to interpret a t test.

Pair 1: Drug–Placebo: Tells you which mean was subtracted from the other. In this case, the Placebo mean was subtracted from the Drug mean.

95% Confidence Interval: We are 95% confident that the actual difference between the sample and population means is between the lower and upper values.

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Drug - Placebo	4.00000	3.46410	1.41421	.36465	7.63535	2.828	5	.037

Mean: Mean of the difference scores (M_D); difference between the two sample means

Std. Deviation: Standard deviation of the difference scores (SD_D)

Std. Error Mean: Standard error of the difference scores (SEM_D); the denominator of the t

t : Obtained t value
$$t = \frac{M_D}{SEM_D}$$

df: Degrees of freedom ($N - 1$)

Sig. (2-tailed): Two-tailed p value; the probability of obtaining the obtained t value or a more extreme t value if the null hypothesis is true;
For a one-tailed test, divide this value by 2; reject H_0 if $p < \alpha$.