**What is this test used for?**

The independent-samples t-test is used to determine if a difference exists between the means of two independent groups on a continuous dependent variable.

H0: There are no differences between GROUP A and GROUP B on the dependent variable.

H1: There are statistically significant differences between GROUP A and GROUP B on the dependent variable.

**Assumptions**

1. You have a continuous dependent variable; meaning, the dependent variable is measured at either the interval or ratio level.
2. Your independent variable is categorical with two groups.
3. You have independence of observations. Participants are only in one group.
4. No significant outliers. Look at boxplot.
5. Dependent variable is normally distributed. Look at skewness and kurtosis statistics (are they not more than 1-2?). Look at normality tests (Shapiro-Wilk and Kolmogorov-Smirnox tests. If they are significant (*p* < .05), then you do not meet this assumption.
6. You have homogeneity of variances (variance is equal in each group). Look at results of the Levene’s test of equality of variances. If it is significant (*p* < .05), then you do not meet this assumption and will need to interpret the *t* statistic and significance level of the row that says “Equal variances not assumed.”

**Interpretation**

1. Look at the *t* statistic value and significance value (the *p* value).
   1. If the *p* value is less than your alpha level (normally .05), then you reject your null hypothesis.
   2. If the *p* value is larger than your alpha level (normally .05), then you fail to reject (or you accept) your null hypothesis.
2. Look at the 95% confidence intervals. If 0 is included in the confidence interval, you fail to reject you null hypothesis. If 0 is not included in the confidence interval, you reject your null hypothesis.

**Reporting**

An independent measures *t* test was conducted to determine if there are significant differences between GROUP A and GROUP B on DEPENDENT VARIABLE. There were no outliers in the data, as assessed by inspection of a boxplot. DEPENDENT VARIABLE for each level of INDEPENDENT VARIABLE were normally distributed, as assessed by Shapiro-Wilk's test (p > .05), and there was homogeneity of variances, as assessed by Levene's test for equality of variances (p > .05). The DEPENDENT VARIABLE was more/less/higher/lower in GROUP A (M = ??, SD = ??) than GROUP B (M = ??, SD = ??), a statistically significant difference, M = ??, 95% CI [??, ??], t = ??, p < .05.

**Effect Size Test**

Confidence Intervals, Cohen’s *d*