

Understanding Statistics

- Appropriately powered studies, appropriately analysed (with corrections for multiple comparisons). Consider using Bayesian statistics where appropriate.
- Recognition that our research should focus on revealing *what effects are likely to be real*, rather than just statistical significance. We need to understand what significance is (and what it isn't).
- Registered reports allows pre-registration of planned experiments (hypotheses, N, analyses etc.):
 - <https://osf.io/8mpji/wiki/home/>

Some traditional basics...

- For a design with two experimental groups:
 - Null hypothesis (H_0) - there is no statistically significant difference between those experimental groups.
 - Experimental hypothesis (H_1) - there **is** a statistically significant difference between two experimental groups.
- We typically reject H_0 that if we find that the result of a statistical test comparing the two experimental groups is $p < 0.05$ (also known as the alpha (α) level).