

Presentation of Statistical Results.

State measurement units, where appropriate, and present decimal numbers with full stops, not commas (e.g. 1.27m); do not use naked decimal points (i.e. use 0.07, rather than .07). Actual p-values should be reported to 2 significant figures, including cases where the result is not statistically significant (e.g. $p=0.76$ rather than NS). For p-values less than 0.001, state $p<0.001$. Summary of data (e.g. description of a sample, baseline characteristics) should use standard deviation not standard error. If using the notation $a\pm b$ state clearly what the b is. State absolute numbers, e.g. 10/20 (plus percentages if you wish).

Justify your choice of sample size. Where possible state the full details of a formal sample size calculation (so that it could be replicated), but do not present a post-hoc calculation that has been done after data analysis – these are not meaningful. Missing data can often lead to bias in results. State the number of subjects included in each analysis, together with a clear statement about any missing data (e.g. non-respondents, dropouts) and any checks you have done to compare subjects with complete and incomplete data. Describe how you have handled missing data.

If you do not have prior hypotheses supported by sample size calculations then your tests are exploratory, and p-values may be largely determined by your sample sizes. Avoid presenting dozens of p-values, or the subset of p-values that are low. Give clear justification for tests you choose to present; these should be dictated by the objective of the research rather than the observed results.

For clinical trials, advice is given in the CONSORT statement (<http://www.consort-statement.org/statement/revisedstatement.htm>). This should be followed as much as possible. Many of the principles are also relevant to other research designs.

For any study it is better to present estimates of effects (e.g. means, mean differences, regression coefficients) and estimates of precision, preferably confidence intervals (although standard errors can be useful). This is especially the case for exploratory studies. Do not confuse statistical significance with practical significance. When interpreting data, the practical significance of the results is very important and cannot be deduced from the p-values themselves. Be clear what you mean when you refer to ‘significance’.

When reporting statistical tests be explicit about any assumptions you have checked, and give full details of a result in the following way: state the test name, followed by a colon, then the test statistic (together with any degrees of freedom), and the p-value. Examples are: ANOVA: $F_{2,6} = 5.6$, $p=0.042$ and Chi-squared: $X_{22}^2 = 19.34$, $p=0.62$.