

Reading a Statistical Result in Order

Step through the six cards below in order to see the sequence that prevents the most common reading mistakes: jumping straight to the p-value before understanding what was actually found.



StatReason

Reading a Statistical Result in Order

Exported from statreason.com. Deterministic, browser-local content; not professional statistical or research advice.

1. Estimate: What value was actually found, and in which direction?

Step	1. Estimate
Question this step answers	What value was actually found, and in which direction?
Why this order	This is the core finding; every later step depends on knowing what was actually estimated.

Put this order into practice: [How to Report Statistical Results](#)

What this answers

This page answers "in what order should I actually read a statistical result to avoid misreading it?" Reading a p-value first, before the estimate and its uncertainty, is one of the most common ways a result gets misunderstood, because the p-value alone carries none of the information about direction, size, or precision.

The six-step order

Start with the estimate: what value was actually found, and in which direction. Next, read the uncertainty around that estimate, typically a confidence interval, to see the range of values reasonably compatible with the data. Then consider magnitude, an effect size or raw difference, to judge whether the estimate matters in practice. Only then read the test result, the p-value or test statistic, now with full context for what it is testing. Check the assumptions the method relied on. Finally, decide the next analysis or action the result actually supports.

Worked example

A report states: estimate, a 6-point improvement; uncertainty, a 95 percent interval from 2 to 10 points; magnitude, a medium standardized effect size; test, $p = .004$ for the paired t-test used; assumptions, differences were approximately normal with no extreme outliers; next analysis, plan a follow-up study to test whether the improvement holds across a longer time period. Reading in this order gives a complete, honest picture; reading only " $p = .004$ " gives almost none of it.

Assumption audit

Calculated from your data: nothing here; this page teaches a reading order using a fixed illustrative example, not your own data.

Evidence to review: whether the actual report you are reading includes all six pieces; a report missing several of them is incomplete regardless of what it does include.

You must verify: that you apply this same order when reading any result, including your own, rather than jumping straight to a p-value out of habit.

Source

This reading order follows the reporting-and-interpretation guidance from the American Statistical Association's statement on statistical significance and the shared statistical reasoning contract every StatReason engine is built against.

Limitations

This page presents a general six-step order that fits most inferential results on this site; highly specialized outputs, such as a full regression model summary, may need to repeat several of these steps once per coefficient.