

Choose the Right Statistical Test

Answer three visible questions about your data and design below. Every combination routes to exactly one canonical test on this site; nothing is inferred behind the scenes, and you can change any answer to see the route change.



Choose the Right Statistical Test

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

1. What is your outcome variable?

2. What is your design?

2. What question are you asking?

Recommended test: One-Sample t-Test

[Go to the One-Sample t-Test →](#)

What this answers

This tool answers "which specific test on this site matches my design?" using only the three most consequential design facts: the type of outcome you measured, how many groups or conditions you are comparing, and whether those groups are paired or independent. It does not infer any of this from your actual data, since a router cannot see your study design, only you can confirm it.

Why these three questions decide the test

Outcome type determines the whole family of methods available: a continuous measurement supports a t-test or ANOVA family, a binary outcome supports a proportion test, a multi-category outcome supports a chi-square test, and a request for rank-based methods routes to the nonparametric family regardless of the underlying scale. Within a family, group count and pairing narrow the choice to exactly one test: comparing one sample to a fixed benchmark is a different design from comparing two independent groups, which is different again from comparing the same subjects measured under three or more conditions.

Worked example

For a continuous numeric outcome measured on the same subjects before and after an intervention (a paired, two-condition design), this tool routes directly to the Paired t-Test, the one test built specifically for that combination of a continuous outcome, exactly two conditions, and a genuine within-subject pairing.

Assumption audit

Calculated from your data: nothing here; this page only routes based on the three answers you select, and performs no calculation itself.

Evidence to review: once you reach the recommended engine, its own Assumption Audit checks sample size, variance, ties, and other calculable facts specific to that test.

You must verify: your actual study design before selecting an answer here, especially whether your groups are genuinely paired; see [Paired vs Independent Data](#) if that distinction is not obvious for your data.

What this tool does not decide

This tool does not decide whether your data meets a given test's assumptions, whether a rank-based test is a safer choice than a parametric one for your specific sample, or how many predictors a regression model should include. Those are separate questions answered by [Assumptions in Statistical Testing](#) and [Parametric vs Nonparametric Tests](#).

Source

This decision structure follows the test-selection framework published by UCLA's Statistical Consulting Group and the shared statistical reasoning contract every StatReason engine is built

against.

Limitations

This tool covers the most common single-outcome designs on this site; it does not cover multi-predictor regression model selection, reliability and agreement designs, or simulation-based methods, each of which has its own dedicated resource.