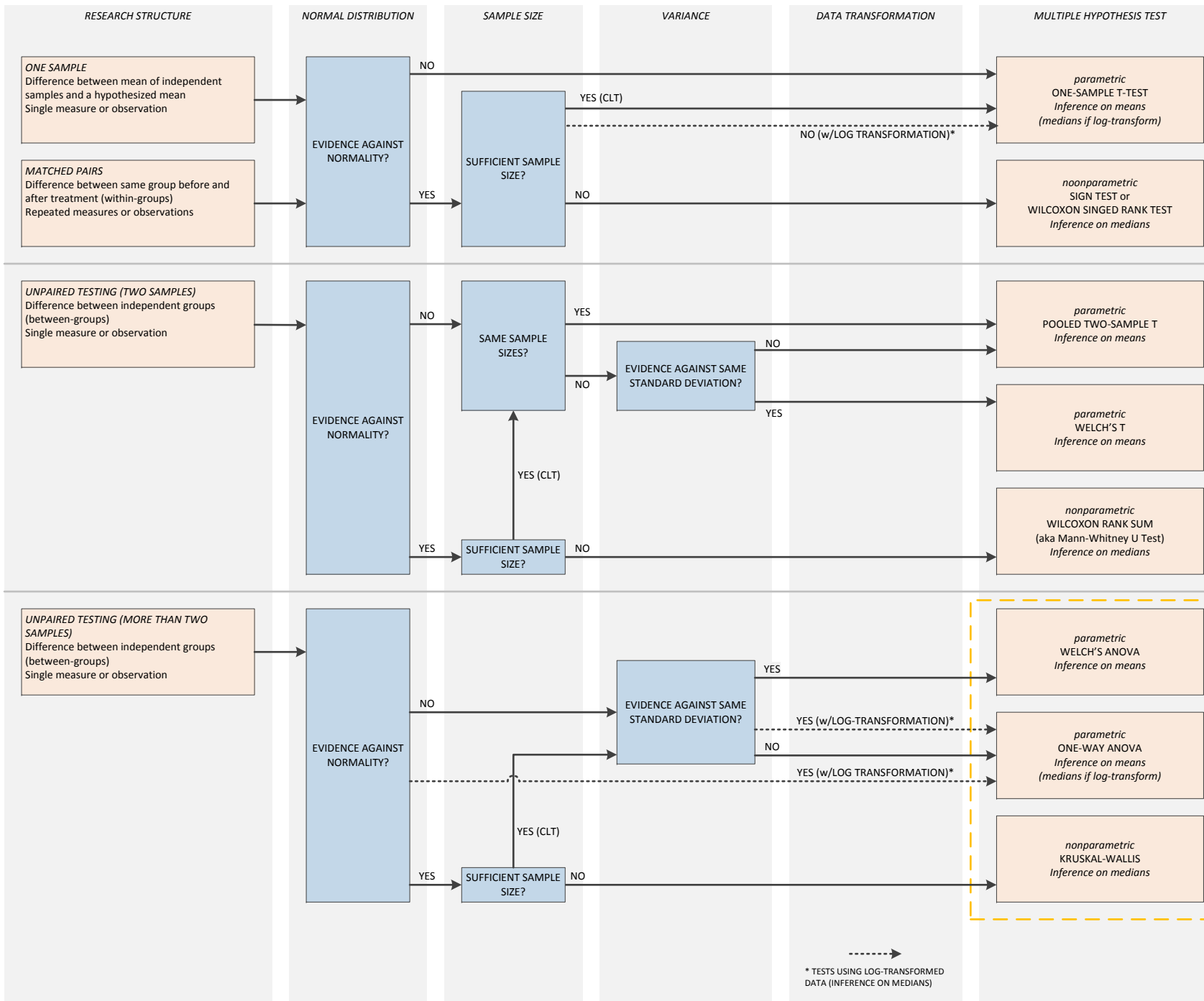


CHOOSING A HYPOTHESIS TEST



HYPOTHESIS TESTING STEP-BY-STEP

- 1 Read the problem carefully. Is it a randomized experiment or an observational study?
- 2 Plot the data using histograms, box plots, or QQ plots.
- 3 Determine which test to use. Do the data satisfy the test's assumptions?
- 4 State the null and alternative hypotheses. Is this a one-sided or two-sided test?
- 5 Select a test statistic and confidence level (1- α). Find the critical value.
- 6 Sketch the distribution, including the critical value and the acceptance and/or rejection region(s).
- 7 Compute the test statistic and the probability (p-value) of obtaining the observed results if the null hypothesis is true.
- 8 Reject or *fail to reject* the null hypothesis. (Never *accept* the null hypothesis.)
- 9 Perform post hoc testing, if applicable, to determine which groups are different.
- 10 State the statistical conclusion in the context of the original problem.

TUKEY-KRAMER (aka TUKEY'S HSD)
DUNNETT for comparison to a control group
BONFERRONI CORRECTION distribution-free, more conservative, wider interval
REGWQ Lower Type II error rate than either Bonferroni or Tukey-Kramer

POST HOC TESTS