Conditions for Null Hypothesis Significance Testing (NHST)

Sample must be randomly drawn from population.
Observations must be independent.
Sample must be representative of population.
Observations must be quantitative.
Observations must be nearly normally distributed.

Conditions for Two-Sample *t*-Tests

Two-sample *t*-tests test whether the population means of two samples drawn from different populations are equal.
Each sample must be randomly drawn from its population.
Each sample must be representative of its population.
Samples must have the same population standard deviation.

Paired *t*-Tests

Paired *t*-tests compare the population means of two paired samples.
E.g., testing emotional intelligence of husband-wife pairs
Calculate statistics based on the *difference* between paired samples
Must meet all conditions that apply to one-sample *t*-tests

Review

For one-sample, two-sample, and paired *t*-tests:
Data must be quantitative
Data must be nearly normally distributed
For two-sample *t*-tests:
Samples must have the same population standard deviation