Choosing a statistical test

parametric assumptions = normality, homogeneity of variance, and independent errors.

Type of question

relationships — differences

True independent variable?

yes — no

Tests for means

Regression analysis

Correlation analysis

2 groups

> 2 groups

if parametric:
linear
regression

if parametric:
Pearson's r

if parametric:
Student's t-test

if parametric:
ANOVA

control for multiple comparisons

if not:
generalized
linear model
(GLM)

if not:
Spearman's
rank
Correlation

if not:
X^2,
Fischer's
exact test

if not:
generalized
linear model
(GLM)

examples:
Bonferroni
correction,
Tukey's HSD