

# What statistical analysis should you use?

What kind of data did you collect?

Frequencies  
(counts only)

Measurements  
or Counts

calculate mean  
and 95% CI from  
replicates

## Chi-Square Test

test for goodness of fit

compare observed  
counts to expected count

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Testing a relationship  
between variables.

Testing for differences between groups

## Unpaired T-Test

two groups of data from different individuals  
comparing two sample means  
identifies real but minimal differences

## Anova

more than two groups of data  
analysis of variance  
determines if there is a statistically significant  
difference between two or more sample means

## Regression

type of graph: scatter plot  
linear or non-linear  
test for association, relationship, or trend