

Choosing a Statistical Test

1. Type of Variable

a. Numerical:

i. *Continuous Data*

1. Means
2. Normal Distribution

ii. *Discrete Data*

1. Whole Numbers
2. Median

b. Categorical:

i. *Proportions*

2. Type of Analysis

a. Comparison (2+ groups)

- i. Means
- ii. Medians
- iii. Proportions

b. Relationship between 2 variables (\equiv Correlation, 1 group)

c. Predicting one variable from another (\equiv Regression, 1 group)

3. Number of groups & Data sets

a. 1 group – 2 datasets

- i. E.g. Testing one group of people to see if a new drug helps lower their blood pressure. Record their blood pressure before and after the drug.

b. 2 groups – 2 datasets

c. 2+ groups - >2 datasets

4. Study Design

a. Unpaired/Independent

- i. 2 or >2 groups of different subjects

b. Paired/Matched

- i. 1 group
 1. Before
 2. After

5. Distribution of Data

a. Normal

b. Non-normal

- i. E.g. ranks, scores

c. Dichotomous/Binomial

- i. Two categories or levels
- ii. E.g. male or female, pass or fail

	Comparison				Association (Relation between 2 variables)	Regression (Predicting one from another)
	2 datasets		> 2 datasets			
	Paired	Unpaired	Paired	Unpaired		
Normal Distribution (means)	Paired t-test	Unpaired t-test	Repeated measures ANOVA	One-way ANOVA	Pearson Correlation	Linear Regression
Non-normal Distribution (medians)	Wilcoxon Signed Rank	Wilcoxon Ranked Sum Test/ Mann Whitney “U” Test	Friedman Test	Kruskal-Wallis Test	Spearman’s Rank Correlation	Non-Parametric Regression
Dichotomous Data (proportions)	McNemar’s Test	Chi-Squared Test/ Fischer Exact Test	Cochran’s Q Test	Chi-Squared Test	Contingency Coefficient	Logistic Regression