



Classification of Study Designs

Tests of Significance

Indicate the reliability of the association

95% Confidence Intervals (CI):

A range of possible values for the measure of association (RR/OR) that has a 95% chance of containing the true measure

- For a true association, 95% CI should not include 1.0
- Range below 1.0 indicates less risk of outcome in exposed population
- Range above 1.0 indicates greater risk of outcome in exposed population

p-values:

Indicate how likely it would be for the observed measure (RR/OR) to occur by chance in absence of a true association

- Small p-values (< 0.05) indicate that the observed measure most likely was due to a true association between exposure and outcome

Measures of Association

Assess the strength of association between an exposure and an outcome

$$\text{Relative Risk (RR)} = \frac{\frac{a}{a+b}}{\frac{c}{c+d}}$$

$$\text{Odds Ratio (OR)} = \frac{d * a}{b * c}$$

Interpreting RR and OR:

- = 1 indicates no association
- > 1 indicates a positive association
- < 1 indicates a negative association

Epidemiology Pocket Guide



Basic epidemiology information...
...at your fingertips

Measures of Disease Frequency

Prevalence:
Measures what proportion of the population is affected

$$\text{Prevalence} = \frac{\text{\# of cases}}{\text{Total population}}$$

Incidence:
Measures the frequency with which an event occurs in a population over a time period

$$\text{Incidence} = \frac{\text{\# of new cases over time}}{\text{Population at risk over the same time period}}$$

2 x 2 Tables

	Outcome		
Exposure	Yes	a	a + c
	No	b	b + d
Total		a + b	c + d

- a = number who are exposed and do not have the outcome
- b = number who are not exposed and have the outcome
- c = number who are not exposed and do not have the outcome
- d = number who are exposed and have the outcome
- a + c = total number who have the outcome
- b + d = total number who do not have the outcome
- a + b = total number who are exposed
- c + d = total number who are not exposed
- a + c + b + d = total study population