

## A cross-sectional study

	Diarrhea	NO diarrhea	
Rural	200	300	500
Urban	100	400	500
	300	700	1000

Prevalence rate of diarrhea in the study population (in this study) is:

$$P = \frac{300}{1000} \times 100\% = \textcircled{30\%}$$

## A case-control study of smoking and Lung Cancer

	Lung Cancer	Control
Smokers	40	10
Non-smokers	20	50

$$\text{Odds Ratio (OR)} = \frac{ad}{bc} = \frac{40 \times 50}{10 \times 20} = \textcircled{10}$$

# Prospective Cohort Study

	D	$\bar{D}$	
MI	30	70	100
MI	10	90	100
	40	160	200

$$RR = \frac{30/100}{10/100} = 3 \quad (2)$$

$$RR = \frac{a/a+b}{c/c+d} = \frac{I_E}{I_{\bar{E}}} \quad (1)$$

We can get Incidence Rate

$$\text{Risk Difference} = I_E - I_{\bar{E}} \\ (RD)$$

$$RD = 0.3 - 0.1 = 0.2$$

$$RD = 0.2 \times 100\% = 20\%$$