

JIPMER Potential topics

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Crohnbach's Alpha

- used to estimate reliability or internal consistency of a questionnaire
- Values ranges- 0-1

Kappa statistics

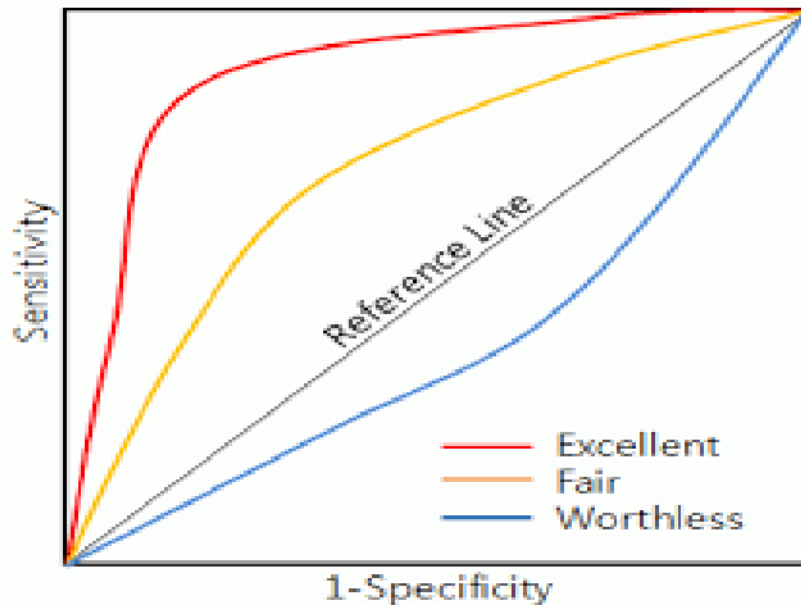
- Used to measure the inter observer agreement(eg- X ray by two observers)
- Values >0.75 - excellent agreement
- Values $0.4-0.75$ - intermediate to good agreement
- <0.4 - poor agreement

Likelihood ratio (LR)

- measures diagnostic accuracy
- Positive LR $\frac{\text{sensitivity}}{1 - \text{specificity}}$
- Negative LR $\frac{1 - \text{sensitivity}}{\text{specificity}}$

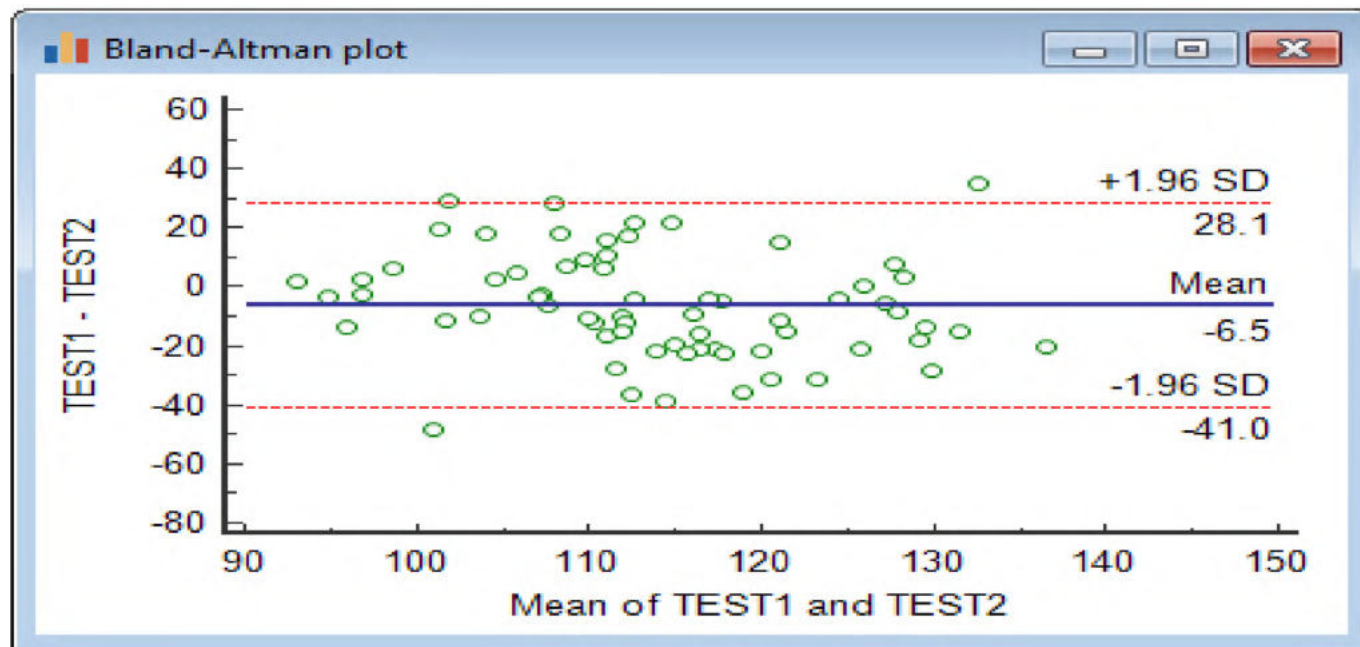
Receiver operating characteristic (ROC) curve

- Graphical display of validity of test
- Plotted between sensitivity and 1- specificity
- Maximum area under the curve is 1



Bland Altman analysis

- Graphical method to compare two quantitative measurement techniques
- Plotted between mean of two measures and difference between two measures



Serial testing of screening test

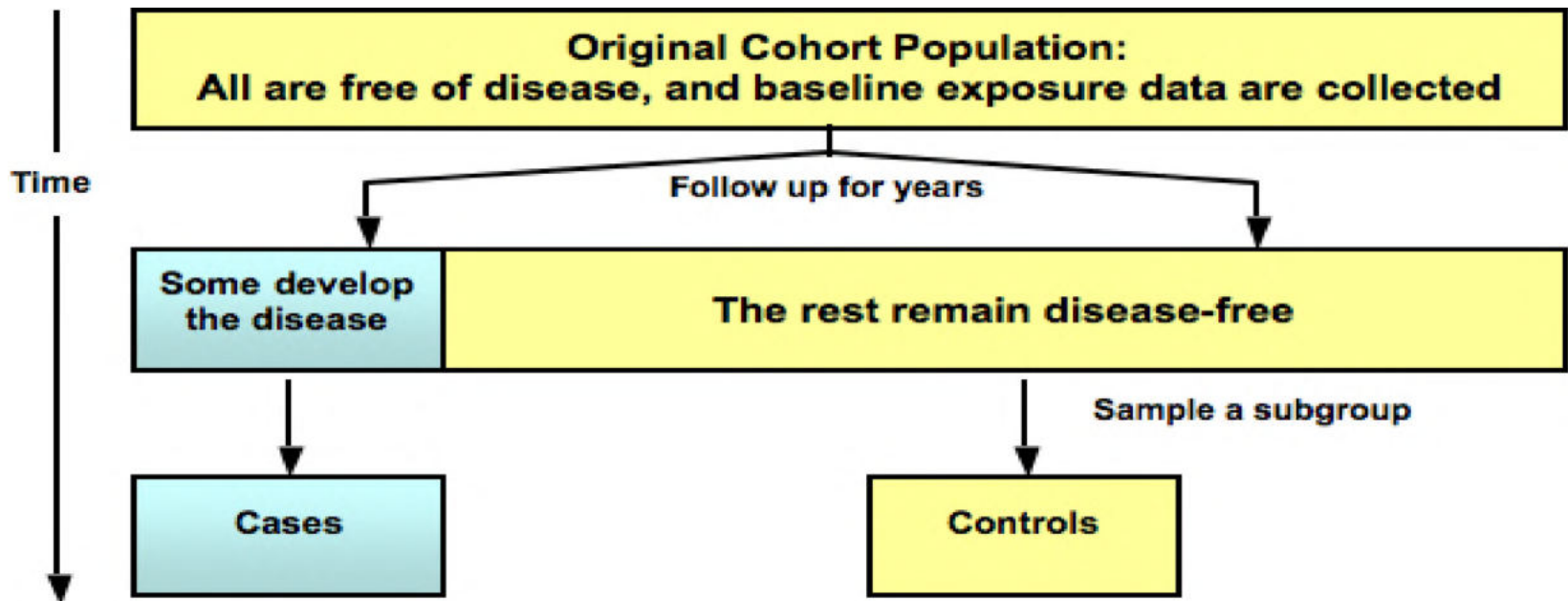
- One test first if positive followed by second test
- Decrease in sensitivity and increase in specificity

Parallel testing of screening test

- Increase in sensitivity and decrease in specificity

Nested case control study

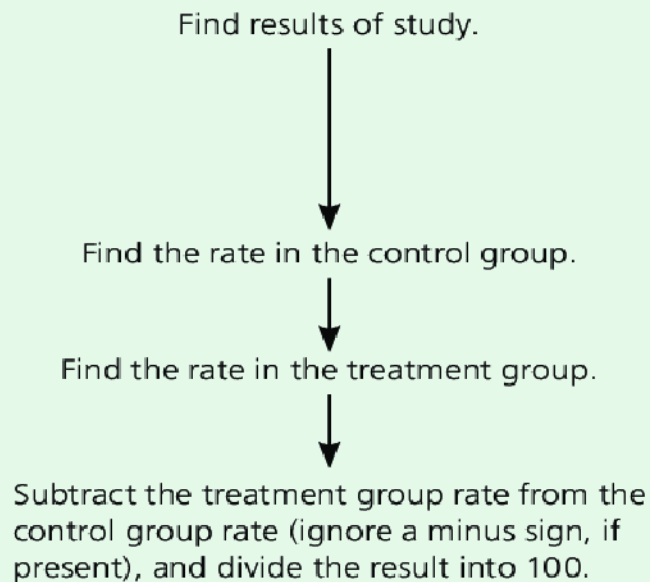
- It is a prospective study



Number needed to treat in RCT

- It is number of patients needed to be treated to prevent one bad outcome

How to Calculate NNT



Example

In a trial of cholesterol lowering over five years, 8 percent of patients died in the treatment group, and 12 percent died in the control group.

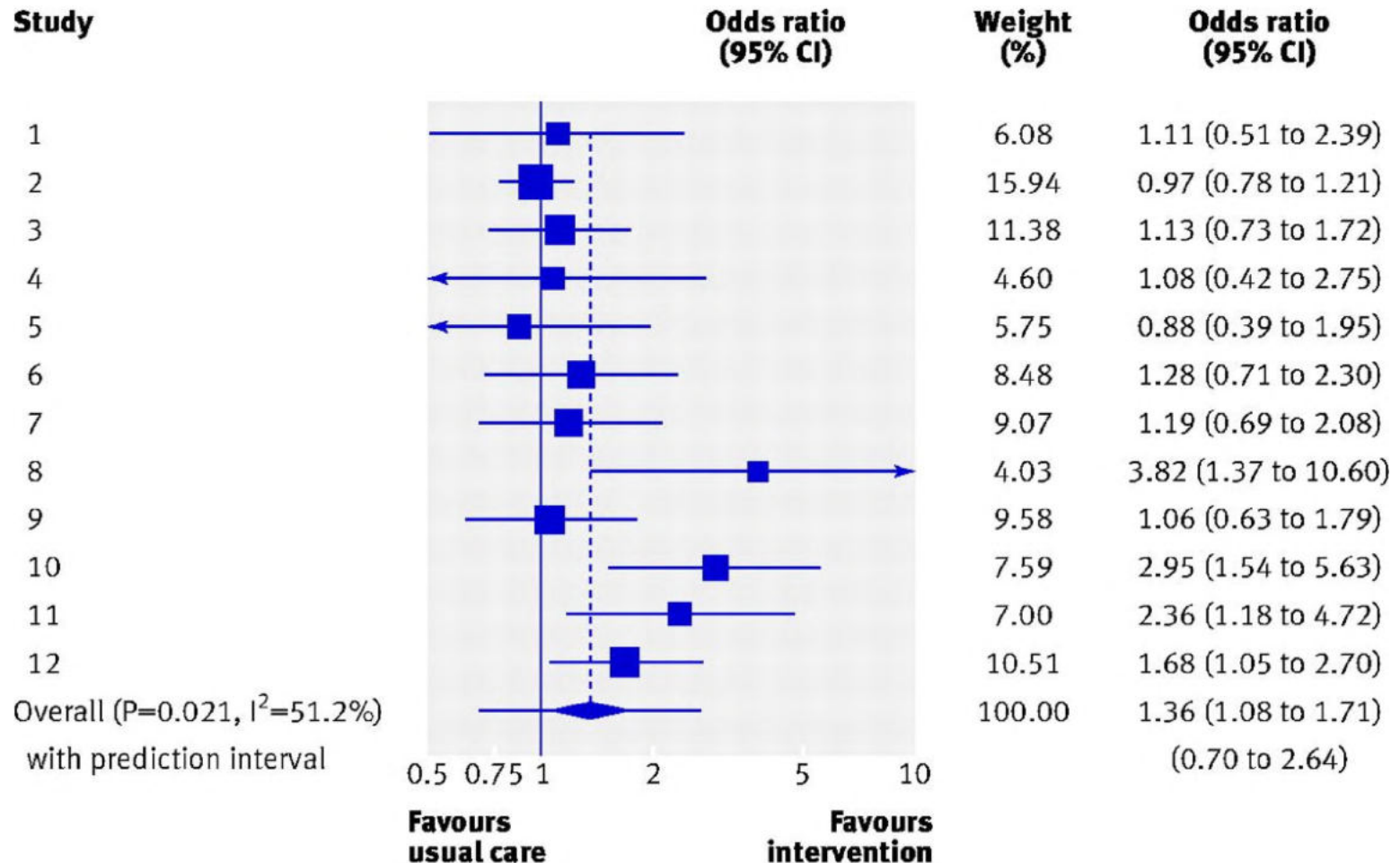
Control group rate: 12 percent

Treatment group rate: 8 percent

Difference: 4 percent

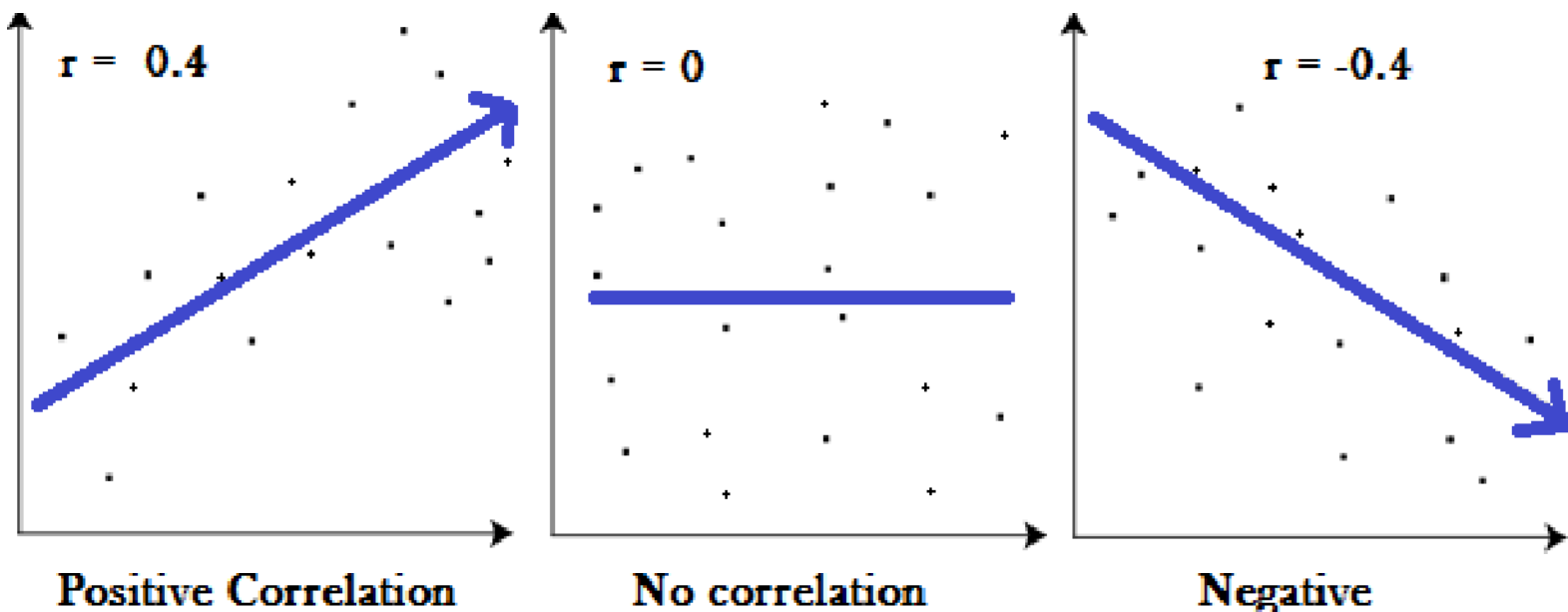
$NNT = 100/4 = 25$

Forrest plot in meta analysis







Correlation coefficient (r)

- Strength and direction of relationship between 2 variables
- $r = -1$ to $+1$



Type 1 and type 2 error

HYPOTHESIS TESTING OUTCOMES		Reality	
Research		The Null Hypothesis Is True	The Alternative Hypothesis is True
	The Null Hypothesis Is True	Accurate $1 - \alpha$ 	Type II Error β 
	The Alternative Hypothesis is True	Type I Error α 	Accurate $1 - \beta$ 

Kolmogorov smirnov test

- Used to check the normal distribution of the test

Likert scale (ordinal data)

Share Your Feedback

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

I believe this product is made of high quality materials

☐

☐

☐

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I would recommend this product to someone else

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