

Mean & SD Conversions

This Includes:

Change calculation

If you want to estimate change in mean (\bar{x}) and standard deviation (σ) from baseline, define the following values:

- 1) Mean(\bar{x}) (baseline)
- 2) Mean(\bar{x}) post treatment (Final)
- 3) Standard deviation (σ) (baseline)
- 4) Standard deviation (σ) (Final)
- 5) Correlation coefficient (C.C)

* Firstly, calculate C.C if the data presented contains the following:

- 1) Standard deviation(σ)(Baseline)
- 2) Standard deviation(σ)(Final)
- 3) Standard deviation (σ) (Change)

Inputs		
σ (Baseline)	σ (Final)	σ (Change)

Outputs
C.C

The output (C.C) was calculated upon the following equation:

$$C.C = (\sigma(\text{Baseline})^2 + \sigma(\text{Final})^2 - \sigma(\text{Change})^2) / 2 * \sigma(\text{Baseline}) * \sigma(\text{Final})$$

$$Corr_E = \frac{SD_{E, \text{baseline}}^2 + SD_{E, \text{final}}^2 - SD_{E, \text{change}}^2}{2 * SD_{E, \text{baseline}} * SD_{E, \text{final}}}$$

Then put the available data into the corresponding cell of the Inputs >> click calculate >> you'll get the data represented by change in mean and standard deviation in the Output squares

Inputs			
Group 1		Group 1	
Baseline		Baseline	
\bar{x}	σ	\bar{x}	σ
Final		Final	
\bar{x}	σ	\bar{x}	σ
C.C		C.C	

Inputs			
Group 2		Group 2	
Baseline		Baseline	
\bar{x}	σ	\bar{x}	σ
Final		Final	
\bar{x}	σ	\bar{x}	σ
C.C		C.C	

Outputs			
Change from		Change	
\bar{x}	σ	\bar{x}	σ

Outputs			
Change from		Change	
\bar{x}	σ	\bar{x}	σ

The outputs was calculated upon the following equations:

A) Mean (\bar{x}) change $\approx \bar{x}(\text{Final}) - \bar{x}(\text{Baseline})$

B) Standard deviation (σ) change:

$$\sigma(\text{change}) = \sqrt{\sigma(\text{pre})^2 + \sigma(\text{Post})^2 - 2 * \sigma(\text{pre}) * \sigma(\text{Post}) * C.C}$$

$$SD_{E, \text{change}} = \sqrt{SD_{E, \text{baseline}}^2 + SD_{E, \text{final}}^2 - (2 * Corr * SD_{E, \text{baseline}} * SD_{E, \text{final}})}$$

References:

(1)

1. Higgins JPT, Green S. Cochrane handbook for systematic reviews of interventions. 2008.

