

Simulations

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Timing of Data Analysis

- ▶ When is the best time to think about data analysis?
- ▶ So far:
 - ▶ Dataset is given
 - ▶ Analysis comes after data collection
 - ▶ Structure of data cannot be changed
- ▶ Better:
 - ▶ Plan data analysis before data collection
 - ▶ Experimental design
 - ▶ Use simulation . . .

Simulation

- body weight and breast circumference
- > validation study for measuring bands
- > question what is the required of animals
- > Pretend: we know the correct relationship between body weight and breast circumference:
 - > linear relationship with given intercept and slope.
 - > generate artificial data
 - > statistical analysis of generated data
 - > check whether original intercept and slope can be confirmed.

- ▶ What is simulation?
- ▶ Given there is an effect between characteristics of variables
- ▶ Generate data that contains the effects
- ▶ Re-analyse generated data
- ▶ Can effects be found?

Examples

- ▶ Body Weight on Breast Circumference
- ▶ Differences between feeds ...
- ▶ Differences between treatment and controls ...
- ▶ Differences between healthy and diseased ...