

Introduction to odds ratios and relative risk

(STATS510.stats 510 10: Odds ratios and relative risk)

Thor Aspelund and Sigrún Helga Lund

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Binary response

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Binary Response is a variable that has only two possible outcomes.

- Yes / No
- Success / Failure
- Sick / not sick
- Fractured hip / hip not fractured

Odds

The **Odds** of an outcome, is the probability that the outcome occurs divided by the probability that it does not occur. If the probability of the outcome is p_1 , then

$$\text{Odds} = \frac{p_1}{1 - p_1}$$

Relative Risk

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The **Relative Risk** of an outcome in two populations is the proportion of the probability of the outcome in the two populations. If we denote the probabilities with p_0 and p_1 then

$$\text{Relative Risk} = \frac{p_1}{p_0}$$