Meta-Analysis of dose response relationships

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In order to establish a causal relationship from observational studies an analysis of dose-response is required. That is, the evaluation of an increase in the level of exposure to an agent and the associated relative risk of a disease when this is investigated over a number of different studies.

Since considering several dose-levels within the same study introduces correlated data (Greenland and Berlin, 1993) linear mixed effects models are applied.

The approach is demonstrated using a meta-analysis on Aspirin use and chemoprevention of breast cancer in women (Mangiapane et al, 2008)

References