

Analysis of Repeated Categorical Measurement Data

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1. Models for Matched Pairs
 - Comparing dependent proportions: McNemar test et al.
 - Conditional vs marginal models for binary matched pairs
 - Comparing margins of square contingency tables.

2. Marginal Models
 - Marginal logit models for repeated binary response
 - Maximum likelihood (ML) and weighted least squares (WLS)
 - Generalized estimating equations (GEE) approach
 - Cumulative logit modeling of repeated ordinal responses
 - Examples: Comparisons of drug and placebo over time.

3. Conditional Models: GLMs with Random Effects
 - Conditional logistic regression of clustered binary data
 - Generalized linear mixed models (GLMMs): ML fitting and inference
 - Logistic GLMMs for clustered binary data
 - GLMMs for ordinal data
 - Examples from Section 2 revisited
 - Multivariate GLMMs for multi-center clinical trials
 - Beta-binomial model for clustered binary data: Teratology study.