

Generalized least squares for trend estimation of summarized dose–response data

Nicola Orsini
Karolinska Institutet
Stockholm, Sweden
nicola.orsini@ki.se

Rino Bellocco
Karolinska Institutet
Stockholm, Sweden

Sander Greenland
UCLA School of Public Health
Los Angeles, CA

Abstract. This paper presents a command, `glst`, for trend estimation across different exposure levels for either single or multiple summarized case–control, incidence-rate, and cumulative incidence data. This approach is based on constructing an approximate covariance estimate for the log relative risks and estimating a corrected linear trend using generalized least squares. For trend analysis of multiple studies, `glst` can estimate fixed- and random-effects metaregression models.

Keywords: `st0096`, `glst`, dose–response data, generalized least squares, trend, meta-analysis, metaregression