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Nota di contenuto	Regression Methods for Medical Research; Copyright; Contents; Preface; 1 Introduction; Introduction; Statistical models; Comparing two means; Linear regression; Types of dependent variables (y-variables); Some completed studies; Further reading; Technical details; Student's t-test; Linear regression; Predicting a mean value of y for a particular x; Predicting an individual's value of y for a particular x; Analysis of Variance (ANOVA); Coefficient of determination; Extending the simple linear model; Correlation; Logarithms and the exponential constant, e 2 Linear Regression: Practical IssuesTypes of covariates (independent variables); Ordered categorical covariates; Numerically discrete covariates; Unordered categorical covariates; Verifying the assumptions; Ordered categorical covariate; Continuous covariate; Do the assumptions matter?; Precautions; Computation; Simple models; Study design; Clinical and statistical significance; Reporting; Technical details; Global tests; Ordered Normal scores; 3 Multiple Linear Regression; Linear regression: two covariates; How good is the fitted model?; Quadratic models; Multiple linear regression Extending the 2-covariate modelNotation; Interactions; Non-nested models; Precautions; Nested models; Collinearity; Parsimonious

models; Verifying assumptions; Technical details; Nested models; Akaike's criterion; 4 Logistic Regression; The logit transformation; Odds ratio; The logit transformation; Logistic regression; Categorical and continuous covariates; Unordered categorical covariate; Ordered categorical covariate; Continuous covariate; Multiple logistic regression; Interactions; Model checking; Tabulations; Lack of an important covariate; Outlying or influential observations
Goodness-of-fit Conditional logistic regression; Ordered logistic regression; Technical details; Odds ratio (OR) and relative risk (RR); Binomial distribution; Maximum likelihood estimation (MLE); Likelihood ratio (LR) test; The empirical logit transformation; 5 Poisson Regression; Introduction; Poisson or Binomial models; Unknown population size at risk; Over-dispersion and robust estimates; Over-dispersion; Robust procedures; Known population size at risk; Known cumulative exposure; Zero-inflated models; Residuals; Technical details; Poisson distribution; Maximum Likelihood Estimation (MLE) Relationship between Poisson and logit models 6 Time-to-Event Regression; Time-to-event data; Kaplan-Meier survival curve; The hazard rate and hazard ratio; Hazard ratio; The Cox regression model; Single covariate; Two covariates; More than two covariates; Verifying proportional hazards; Complementary log-log plot; Observed and predicted K-M plots; Schoenfeld residuals; What if the proportional hazards assumption is wrong?; Stratified Cox; Technical details; Calculating a Kaplan-Meier survival curve; The hazard function; The complementary log-log transformation; Residuals; 7 Model Building Introduction

Sommario/riassunto

Regression Methods for Medical Research provides medical researchers with the skills they need to critically read and interpret research using more advanced statistical methods. The statistical requirements of interpreting and publishing in medical journals, together with rapid changes in science and technology, increasingly demands an understanding of more complex and sophisticated analytic procedures. The text explains the application of statistical models to a wide variety of practical medical investigative studies and clinical trials. Regression methods are used to app
