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Nota di contenuto	Cover; Title Page; Copyright; Contents; Preface to third edition; Mixed models notation; About the Companion Website; Chapter 1 Introduction; 1.1 The use of mixed models; 1.2 Introductory example; 1.2.1 Simple model to assess the effects of treatment (Model A); 1.2.2 A model taking patient effects into account (Model B); 1.2.3 Random effects model (Model C); 1.2.4 Estimation (or prediction) of random effects; 1.3 A multi-centre hypertension trial; 1.3.1 Modelling the data; 1.3.2 Including a baseline covariate (Model B); 1.3.3 Modelling centre effects (Model C) 1.3.4 Including centre-by-treatment interaction effects (Model D) 1.3.5 Modelling centre and centre-treatment effects as random (Model E); 1.4 Repeated measures data; 1.4.1 Covariance pattern models; 1.4.2 Random coefficients models; 1.5 More about mixed models; 1.5.1 What is a mixed model?; 1.5.2 Why use mixed models?; 1.5.3 Communicating results; 1.5.4 Mixed models in medicine; 1.5.5 Mixed models in perspective; 1.6 Some useful definitions; 1.6.1 Containment; 1.6.2 Balance; 1.6.3 Error strata; Chapter 2 Normal mixed models; 2.1 Model definition; 2.1.1 The fixed effects model 2.1.2 The mixed model 2.1.3 The random effects model covariance structure; 2.1.4 The random coefficients model covariance structure;

2.1.5 The covariance pattern model covariance structure; 2.2 Model fitting methods; 2.2.1 The likelihood function and approaches to its maximisation; 2.2.2 Estimation of fixed effects; 2.2.3 Estimation (or prediction) of random effects and coefficients; 2.2.4 Estimation of variance parameters; 2.3 The Bayesian approach; 2.3.1 Introduction; 2.3.2 Determining the posterior density; 2.3.3 Parameter estimation, probability intervals and p-values; 2.3.4 Specifying non-informative prior distributions; 2.3.5 Evaluating the posterior distribution; 2.4 Practical application and interpretation; 2.4.1 Negative variance components; 2.4.2 Accuracy of variance parameters; 2.4.3 Bias in fixed and random effects standard errors; 2.4.4 Significance testing; 2.4.5 Confidence intervals; 2.4.6 Checking model assumptions; 2.4.7 Missing data; 2.4.8 Determining whether the simulated posterior distribution has converged; 2.5 Example; 2.5.1 Analysis models; 2.5.2 Results; 2.5.3 Discussion of points from Section 2.4; Chapter 3 Generalised linear mixed models; 3.1 Generalised linear models; 3.1.1 Introduction; 3.1.2 Distributions; 3.1.3 The general form for exponential distributions; 3.1.4 The GLM definition; 3.1.5 Fitting the GLM; 3.1.6 Expressing individual distributions in the general exponential form; 3.1.7 Conditional logistic regression; 3.2 Generalised linear mixed models; 3.2.1 The GLMM definition; 3.2.2 The likelihood and quasi-likelihood functions; 3.2.3 Fitting the GLMM; 3.3 Practical application and interpretation; 3.3.1 Specifying binary data; 3.3.2 Uniform effects categories; 3.3.3 Negative variance components; 3.3.4 Presentation of fixed and random effects estimates

Sommario/riassunto

A fully updated edition of this key text on mixed models, focusing on applications in medical research. The application of mixed models is an increasingly popular way of analysing medical data, particularly in the pharmaceutical industry. A mixed model allows the incorporation of both fixed and random variables within a statistical analysis, enabling efficient inferences and more information to be gained from the data. There have been many recent advances in mixed modelling, particularly regarding the software and applications. This third edition of Brown and Prescott's groundbreaking text
