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Nota di contenuto	Meta-Analysis of Controlled Clinical Trials; Statistics in Practice; Contents; Preface; 1 Introduction; 1.1 The role of meta-analysis; 1.2 Retrospective and prospective meta-analyses; 1.3 Fixed effects versus random effects; 1.4 Individual patient data versus summary statistics; 1.5 Multicentre trials and meta-analysis; 1.6 The structure of this book; 2 Protocol development; 2.1 Introduction; 2.2 Background; 2.3 Objectives; 2.4 Outcome measures and baseline information; 2.5 Sources of data; 2.6 Study selection; 2.7 Data extraction; 2.8 Statistical analysis; 2.8.1 Analysis population 2.8.2 Missing data at the subject level 2.8.3 Analysis of individual trials; 2.8.4 Meta-analysis model; 2.8.5 Estimation and hypothesis testing; 2.8.6 Testing for heterogeneity; 2.8.7 Exploration of heterogeneity; 2.9 Sensitivity analyses; 2.10 Presentation of results; 3 Estimating the

treatment difference in an individual trial; 3.1 Introduction; 3.2 Binary data; 3.2.1 Example: Stroke in hypertensive patients; 3.2.2 Measurement of treatment difference; 3.3 Survival data; 3.3.1 Example: Mortality following myocardial infarction; 3.3.2 Measurement of treatment difference

3.4 Interval-censored survival data 3.4.1 Example: Ulcer recurrence; 3.4.2 Measurement of treatment difference; 3.5 Ordinal data; 3.5.1 Example: Global impression of change in Alzheimer's disease; 3.5.2 Measurement of treatment difference; 3.6 Normally distributed data; 3.6.1 Example: Recovery time after anaesthesia; 3.6.2 Measurement of treatment difference; 4 Combining estimates of a treatment difference across trials; 4.1 Introduction; 4.2 A general fixed effects parametric approach; 4.2.1 A fixed effects meta-analysis model

4.2.2 Estimation and hypothesis testing of the treatment difference

4.2.3 Testing for heterogeneity across studies; 4.2.4 Obtaining the statistics via weighted least-squares regression; 4.2.5 Example: Stroke in hypertensive patients; 4.2.6 Example: Mortality following myocardial infarction; 4.2.7 Example: Ulcer recurrence; 4.2.8 Example: Global impression of change in Alzheimer's disease; 4.2.9 Example: Recovery time after anaesthesia; 4.3 A general random effects parametric approach; 4.3.1 A random effects meta-analysis model

4.3.2 Estimation and hypothesis testing of the treatment difference

4.3.3 Estimation of  $t(2)$  using the method of moments; 4.3.4 Obtaining the statistics via weighted least-squares regression; 4.3.5 Example: Mortality following myocardial infarction; 4.3.6 Example: Global impression of change in Alzheimer's disease; 4.3.7 Example: Recovery time after anaesthesia; 4.3.8 A likelihood approach to the estimation of  $t(2)$ ; 4.3.9 Allowing for the estimation of  $t(2)$ ; 5 Meta-analysis using individual patient data; 5.1 Introduction; 5.2 Fixed effects models for normally distributed data

5.2.1 A fixed effects meta-analysis model

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#### Sommario/riassunto

Over the last twenty years there has been a dramatic upsurge in the application of meta-analysis to medical research. This has mainly been due to greater emphasis on evidence-based medicine and the need for reliable summaries of the vast and expanding volume of clinical research. At the same time there have been great strides in the development and refinement of the associated statistical methodology. This book describes the planning, conduct and reporting of a meta-analysis as applied to a series of randomized controlled clinical trials.\* The various approaches are presented within a gene

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