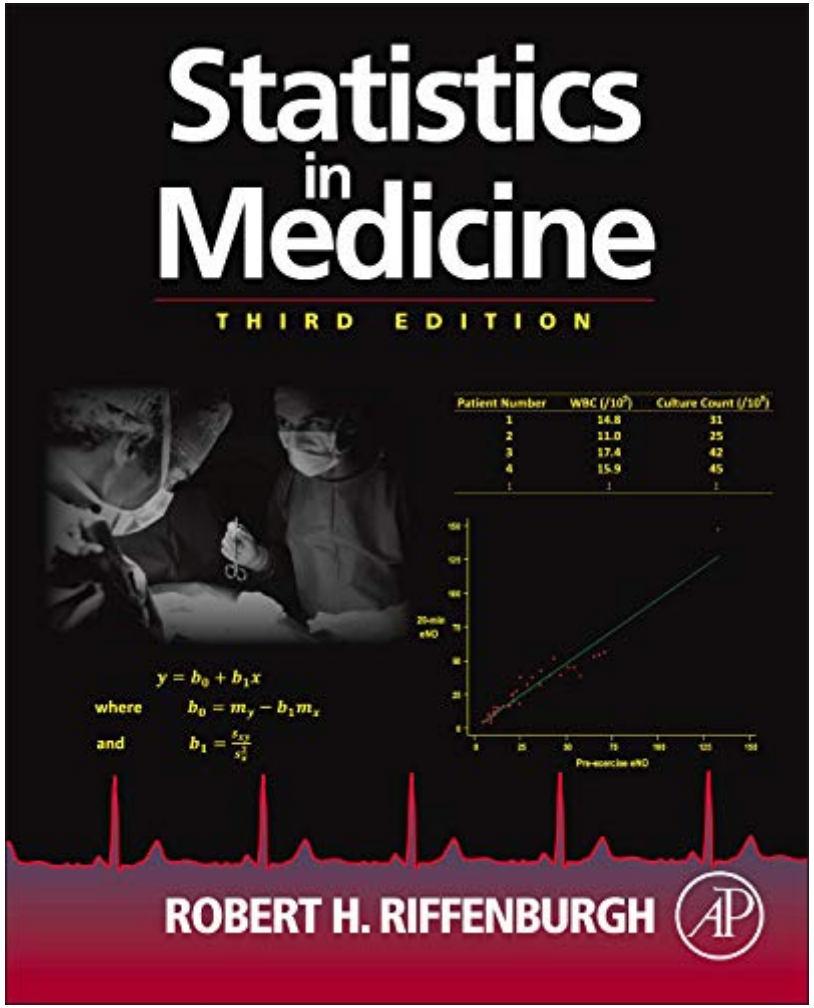

[eBooks] Statistics In Medicine

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Statistics in Medicine-Robert H. Riffenburgh 2006 Medicine deals with treatments that work often but not always, so treatment success must be based on probability. Statistical methods lift medical research from the anecdotal to measured levels of probability. This book presents the common statistical methods used in 90% of medical research, along with the underlying basics, in two parts: a textbook section for use by students in health care training programs, e.g., medical schools or residency training, and a reference section for use by practicing clinicians in reading medical literature and performing their own research. The book does not require a significant level of mathematical knowledge and couches the methods in multiple examples drawn from clinical medicine, giving it applicable context. Easy-to-follow format incorporates medical examples, step-by-step methods, and check yourself exercises Two-part design features course material and a professional reference section Chapter summaries provide a review of formulas, method algorithms, and check lists Companion site links to statistical databases that can be downloaded and used to perform the exercises from the book and practice statistical methods New in this Edition: New chapters on: multifactor tests on means of continuous data, equivalence testing, and advanced methods New topics include: trial randomization, treatment ethics in medical research, imputation of missing data, and making evidence-based medical decisions Updated database coverage and additional exercises Expanded coverage of numbers needed to treat and to benefit, and regression analysis including stepwise regression and Cox regression Thorough discussion on required sample size

Statistics in Medicine-Robert H. Riffenburgh 1999 Covering 30% of statistical methods used for 90% of medical studies, this student textbook begins with mathematics and explains the basic concepts and most frequently used procedures in biostatistics that are ommitted in many other volumes.

How to Report Statistics in Medicine-Thomas Allen Lang 2006 How to Report Statistics in Medicine presents a comprehensive and comprehensible set of guidelines for reporting the statistical analyses and research designs and activities commonly used in biomedical research. Containing elements of a reference book, a style manual, a dictionary, an encyclopedia, and a text book, it is the standard guide in the fields of medical writing, scientific publications, and evidence-based medicine throughout the world. Features: Specific, detailed guidelines for reporting and interpreting statistics and research designs and activities in biomedical science. Sample presentations that guide you in reporting statistics correctly and completely. Coverage of current and emerging topics in statistics and trial design. Written by a senior medical writer and a senior biostatistician, the text is both clear and accurate, and the information is complete and pragmatic. Designed for anyone who needs to interpret or report statistics in medicine.

Medical Statistics-Michael J. Campbell 2010-10-26 Provides students and

practitioners with a clear, concise introduction to the statistics they will come across in their regular reading of clinical papers. Written by three experts with wide teaching and consulting experience, Medical Statistics: A Textbook for the Health Sciences, Fourth Edition: Assumes no prior knowledge of statistics Covers all essential statistical methods Completely revised, updated and expanded Includes numerous examples and exercises on the interpretation of the statistics in papers published in medical journals From the reviews of the previous edition: "The book has several excellent features: it is written by statisticians, is.... well presented, is well referenced.... and is short." THE LANCET "Many statisticians are concerned at the generally poor standard of statistics in papers published in medical journals. Perhaps this could be remedied if more research workers would spare a few hours to read through Campbell and Machin's book." BRITISH MEDICAL JOURNAL "... a simple, interesting and insightful introduction to medical statistics... highly recommended." STATISTICAL METHODS IN MEDICAL RESEARCH "Campbell and Machin found the golden mean... this book can be recommended for all students and all medical researchers." ISCB NEWSLETTER

Practical Statistics for Medical Research-Douglas G. Altman 1990-11-22 Most medical researchers, whether clinical or non-clinical, receive some background in statistics as undergraduates. However, it is most often brief, a long time ago, and largely forgotten by the time it is needed. Furthermore, many introductory texts fall short of adequately explaining the underlying concepts of statistics, and often are divorced from the reality of conducting and assessing medical research. Practical Statistics for Medical Research is a problem-based text for medical researchers, medical students, and others in the medical arena who need to use statistics but have no specialized mathematics background. The author draws on twenty years of experience as a consulting medical statistician to provide clear explanations to key statistical concepts, with a firm emphasis on practical aspects of designing and analyzing medical research. The text gives special attention to the presentation and interpretation of results and the many real problems that arise in medical research.

Medical Statistics-Ramakrishna HK 2016-11-08 This book deals with statistics in medicine in a simple way. The text is supported by abundant examples from medical data. This book aims to explain and simplify the process of data presentation. Further aspects addressed include how to design and conduct clinical trials, and how to write journal articles.

Medical Uses of Statistics-John C. Bailar III 2019-05-20 This work explains the purpose of statistical methods in medical studies and analyzes the statistical techniques used by clinical investigators, with special emphasis on studies published in "The New England Journal of Medicine". It clarifies fundamental concepts of statistical design and analysis, and facilitates the understanding of research results.

Advanced Medical Statistics (2nd Edition)-Lu Ying 2015-06-29 The book aims to provide both comprehensive reviews of the classical methods and an introduction to new developments in medical statistics. The topics range from meta analysis, clinical trial design, causal inference, personalized medicine to machine learning and next generation sequence analysis. Since the publication of the first edition, there have been tremendous advances in biostatistics and bioinformatics. The new edition tries to cover as many important emerging areas and reflect as much progress as possible. Many distinguished scholars, who greatly advanced their research areas in statistical methodology as well as practical applications, also have revised several chapters with relevant updates and written new ones from scratch.The new edition has been divided into four sections, including, Statistical Methods in Medicine and Epidemiology, Statistical Methods in Clinical Trials, Statistical Genetics, and General Methods. To reflect the rise of modern statistical genetics as one of the most fertile research areas since the publication of the first edition, the brand new section on Statistical Genetics includes entirely new chapters reflecting the state of the art in the field.Although tightly related, all the book chapters are self-contained and can be read independently. The book chapters intend to provide a convenient launch pad for readers interested in learning a specific topic, applying the related statistical methods in their scientific research and seeking the newest references for in-depth research.

Medical Statistics from Scratch-David Bowers 2008-04-15 This long awaited second edition of this bestseller continues to provide a comprehensive, user friendly, down-to-earth guide to elementary statistics. The book presents a detailed account of the most important procedures for the analysis of data, from the calculation of simple proportions, to a variety of statistical tests, and the use of regression models for modeling of clinical outcomes. The level of mathematics is kept to a minimum to make the material easily accessible to the novice, and a multitude of illustrative cases are included in every chapter, drawn from the current research literature. The new edition has been completely revised and updated and includes new chapters on basic quantitative methods, measuring survival, measurement scales, diagnostic testing, bayesian methods, meta-analysis and systematic reviews. "... After years of trying and failing, this is the only book on statistics that i have managed to read and understand" - Naveed Kirmani, Surgical Registrar, South London Healthcare HHS Trust, UK

Medical Statistics-Jennifer Peat 2008-04-15 Holistic approach to understanding medical statistics This hands-on guide is much more than a basic medical statistics introduction. It equips you with the statistical tools required for evidence-based clinical research. Each chapter provides a clear step-by-step guide to each statistical test with practical instructions on how to generate and interpret the numbers, and present the results as scientific tables or graphs. Showing you how to: analyse data with the help of data set examples (Click here to download datasets) select the correct statistics and report results for publication or presentation understand and critically appraise results reported in the literature Each statistical test is linked to the research question and the type of study design used. There are also checklists for critically appraising the literature and web links to useful internet sites. Clear and concise explanations, combined with plenty of examples and tabulated explanations are based on the authors' popular medical statistics courses. Critical appraisal guidelines at the end of each chapter help the reader evaluate the statistical data in their particular contexts.

Oxford Handbook of Medical Statistics-Janet Peacock 2011 The majority of medical research involves quantitative methods and so it is essential to be able to understand and interpret statistics. This book shows readers how to develop the skills required to critically appraise research evidence effectively, and how to conduct research and communicate their findings.

Essential Medical Statistics-Betty R. Kirkwood 2010-09-16 Blackwell Publishing is delighted to announce that this book hasbeen Highly Commended in the 2004 BMA Medical Book Competition.Here is the judges' summary of this book: "This is a technical book on a technical subject but presentedin a delightful way. There are many books on statistics for doctorsbut there are few that are excellent and this is certainly one ofthem. Statistics is not an easy subject to teach or write about.The authors have succeeded in producing a book that is as good asit can get. For the keen student who does not want a book formathematicians, this is an excellent first book on medicalstatistics." Essential Medical Statistics is a classic amongst medicalstatisticians. An introductory textbook, it presents statisticswith a clarity and logic that demystifies the subject, whileproviding a comprehensive coverage of advanced as well as basicmethods. The second edition of Essential Medical Statistics hasbeen comprehensively revised and updated to include modernstatistical methods and modern approaches to statistical analysis,while retaining the approachable and non-mathematical style of thefirst edition. The book now includes full coverage of the mostcommonly used regression models, multiple linear regression,logistic regression, Poisson regression and Cox regression, as wellas a chapter on general issues in regression modelling. Inaddition, new chapters introduce more advanced topics such asmeta-analysis, likelihood, bootstrapping and robust standarderrors, and analysis of clustered data. Aimed at students of medical statistics, medical researchers,public health practitioners and practising clinicians usingstatistics in their daily work, the book is designed as both ateaching and a reference text. The format of the book is clear withhighlighted formulae and worked examples, so that all concepts arepresented in a simple, practical and easy-to-understand way. Thesecond edition enhances the emphasis on choice of appropriatemethods with new chapters on strategies for analysis and measuresof association and impact. Essential Medical Statistics is supported by a web siteat www.blackwellpublishing.com/essentialmedstats. Thisuseful online resource provides statistical datasets to download,as well as sample chapters and

future updates.

Statistics of Medical Imaging-Tianhu Lei 2011-12-19 Statistical investigation into technology not only provides a better understanding of the intrinsic features of the technology (analysis), but also leads to an improved design of the technology (synthesis). Physical principles and mathematical procedures of medical imaging technologies have been extensively studied during past decades. However, less work has been done on the statistical aspects of these techniques. Statistics of Medical Imaging fills this gap and provides a theoretical framework for statistical investigation into medical imaging technologies. Features Describes physical principles and mathematical procedures of two medical imaging techniques: X-ray CT and MRI Presents statistical properties of imaging data (measurements) at each stage in the imaging processes of X-ray CT and MRI Demonstrates image reconstruction as a transform from a set of random variables (imaging data) to another set of random variables (image data) Presents statistical properties of image data (pixel intensities) at three levels: a single pixel, any two pixels, and a group of pixels (a region) Provides two stochastic models for X-ray CT and MR image in terms of their statistics and two model-based statistical image analysis methods Evaluates statistical image analysis methods in terms of their detection, estimation, and classification performances Indicates that X-ray CT, MRI, PET and SPECT belong to a category of imaging: the non-diffraction computed tomography Rather than offering detailed descriptions of statistics of basic imaging protocols of X-ray CT and MRI, this book provides a method to conduct similar statistical investigations into more complicated imaging protocols.

Applications of Statistics to Medicine and Medical Physics-Edward L. Nickoloff 2011 Forlagets beskrivelse: This book was written with two specific goals in mind. The first is as a resource for graduate students who are pursuing an advanced degree in medical physics who are also required to take a course in statistics. This text includes many practical medical physics problems which would be ideal for this course. Although there are a number of statistics books available, there are no books which present statistics in a context that has applications important to medical physics and medicine. Most medical physicists are familiar with the very basics of statistical analysis like mean and standard deviation; however their ability to analyze data and design statistically valid experiments may be limited. The second goal, therefore, is for the book to serve as a key resource on statistical analysis for senior medical physicists or clinical researchers. The book includes 11 chapters, beginning with very basic topics like Binomial, Poisson, and Normal probability distributions and gradually progressing to more advanced topics.

Statistical Methods in Diagnostic Medicine-Xiao-Hua Zhou 2014-08-21 Praise for the First Edition " . . . the book is a valuable addition to the literature in thefield, serving as a much-needed guide for both clinicians andadvanced students."—Zentralblatt MATH A new edition of the cutting-edge guide to diagnostic tests inmedical research In recent years, a considerable amount of research has focusedon evolving methods for designing and analyzing diagnostic accuracystudies. Statistical Methods in Diagnostic Medicine, Second Editioncontinues to provide a comprehensive approach to the topic, guidingreaders through the necessary practices for understanding thesestudies and generalizing the results to patient populations. Following a basic introduction to measuring test accuracy andstudy design, the authors successfully define various measures ofdiagnostic accuracy, describe strategies for designing diagnosticaccuracy studies, and present key statistical methods forestimating and comparing test accuracy. Topics new to the SecondEdition include: Methods for tests designed to detect and locate lesions Recommendations for covariate-adjustment Methods for estimating and comparing predictive values andsample size calculations Correcting techniques for verification and imperfect standardbiases Sample size calculation for multiple reader studies when pilotdata are available Updated meta-analysis methods, now incorporating randomeffects Three case studies thoroughly showcase some of the questions andstatistical issues that arise in diagnostic medicine, with allassociated data provided in detailed appendices. A related web sitefeatures Fortran, SAS®, and R software packages so thatreaders can conduct their own analyses. Statistical Methods in Diagnostic Medicine, Second Edition is anexcellent supplement for biostatistics courses at the graduatelevel. It also serves as a valuable reference for clinicians andresearchers working in the fields of medicine, epidemiology,

andbiostatistics.

Essential Statistical Methods for Medical Statistics-J. Philip Miller 2010-11-08 Essential Statistical Methods for Medical Statistics presents only key contributions which have been selected from the volume in the Handbook of Statistics: Medical Statistics, Volume 27 (2009). While the use of statistics in these fields has a long and rich history, the explosive growth of science in general, and of clinical and epidemiological sciences in particular, has led to the development of new methods and innovative adaptations of standard methods. This volume is appropriately focused for individuals working in these fields. Contributors are internationally renowned experts in their respective areas. · Contributors are internationally renowned experts in their respective areas · Addresses emerging statistical challenges in epidemiological, biomedical, and pharmaceutical research · Methods for assessing Biomarkers, analysis of competing risks · Clinical trials including sequential and group sequential, crossover designs, cluster randomized, and adaptive designs · Structural equations modelling and longitudinal data analysis

An Introduction to Medical Statistics-Martin Bland 1999-06-01

Biostatistics for Medical and Biomedical Practitioners-Julien I. E. Hoffman 2015-09-03 Biostatistics for Practitioners: An Interpretative Guide for Medicine and Biology deals with several aspects of statistics that are indispensable for researchers and students across the biomedical sciences. The book features a step-by-step approach, focusing on standard statistical tests, as well as discussions of the most common errors. The book is based on the author’s 40+ years of teaching statistics to medical fellows and biomedical researchers across a wide range of fields. Discusses how to use the standard statistical tests in the biomedical field, as well as how to make statistical inferences (t test, ANOVA, regression etc.) Includes non-standards tests, including equivalence or non-inferiority testing, extreme value statistics, cross-over tests, and simple time series procedures such as the runs test and Cusums Introduces procedures such as multiple regression, Poisson regression, meta-analysis and resampling statistics, and provides references for further studies

Medical Statistics Made Easy-Michael Harris 2003-12-05 It is not necessary to know how to do a statistical analysis to critically appraise a paper. However, it is necessary to have a grasp of the basics, of whether the right test has been used and how to interpret the resulting figures. Short, readable, and useful, this book provides the essential, basic information without becoming bogged down in the

Medical Uses of Statistics-John C. Bailar 2012-01-10 A new edition of the classic guide to the use of statistics inmedicine, featuring examples from articles in the New EnglandJournal of Medicine Medical Uses of Statistics has served as one of the mostinfluential works on the subject for physicians,physicians-in-training, and a myriad of healthcare experts who needa clear idea of the proper application of statistical techniques inclinical studies as well as the implications of theirinterpretation for clinical practice. This Third Editionmaintains the focus on the critical ideas, rather than themechanics, to give practitioners and students the resources theyneed to understand the statistical methods they encounter in modernmedical literature. Bringing together contributions from more than two dozendistinguished statisticians and medical doctors, this volumestresses the underlying concepts in areas such as randomizedtrials, survival analysis, genetics, linear regression,meta-analysis, and risk analysis. The Third Editionincludes: Numerous examples based on studies taken directly from the pagesof the New England Journal ofMedicine Two added chapters on statistics in genetics Two new chapters on the application of statistical methods tostudies in epidemiology New chapters on analyses of randomized trials, linearregression, categorical data analysis, meta-analysis, subgroupanalyses, and risk analysis Updated chapters on statistical thinking, crossover designs,p-values, survival analysis, and reporting research results A focus on helping readers to critically interpret publishedresults of clinical research Medical Uses of Statistics, Third Edition is a valuableresource for researchers and physicians working in anyhealth-related field. It is also an excellent supplemental book forcourses on medicine, biostatistics, and clinical research at theupper-undergraduate

and graduate levels. You can also visit the NewEngland Journal of Medicine website for relatedinformation.

Interpretation and Uses of Medical Statistics-Leslie Daly 2008-04-30 In 1969 the first edition of this book introduced the concepts of statistics and their medical application to readers with no formal training in this area. While retaining this basic aim, the authors have expanded the coverage in each subsequent edition to keep pace with the increasing use and sophistication of statistics in medical research. This fifth edition has undergone major restructuring, with some sections completely rewritten; it is now more logically organized and more user friendly (with the addition of 'summary boxes' throughout the text). It incorporates new statistical techniques and approaches that have made an appearance since the last edition. In addition, some chapters or chapter headings are specifically marked to signify material that is more difficult than the material in which it is embedded - such sections or chapters can be omitted at first reading. Several new chapters have been added . "Associations: Chance, Confounded and Causal?" explains without any formulae the concepts underlying confounding, confidence intervals and p values, and the interpretation of associations observed in research investigations. Another new chapter considers sample size calculations in some detail and provides, in addition to the relevant formulae, useful tables that should give the researcher an indication of the order of magnitude of the number of subjects he or she might require in different situations.

Statistical Concepts and Applications in Clinical Medicine-John Aitchison 2004-10-28 Statistical Concepts and Applications in Clinical Medicine presents a unique, problem-oriented approach to using statistical methods in clinical medical practice through each stage of the clinical process, including observation, diagnosis, and treatment. The authors present each consultative problem in its original form, then describe the process of problem formulation, develop the appropriate statistical models, and interpret the statistical analysis in the context of the real problem. Their treatment provides clear, accessible explanations of statistical methods. The text includes end-of-chapter exercises that help develop formulatory, analytic, and interpretative skills.

Medical Statistics at a Glance-Aviva Petrie 2000-08-16 In line with the other books in the at a Glance series, Medical Statistics at a Glance leads the reader through a number of self-contained topics, each covering a different aspect of medical statistics. The majority of these use the standard 'At a Glance' format of two pages per topic. The authors have provided a basic introduction to the underlying concepts of medical statistics and a guide to the most commonly used statistical procedures. Topics describing a statistical technique are accompanied by a worked example, using real data, illustrating its use. Where possible, the same data set has been used in more than one topic to reflect the reality of data analysis. Detailed and complex hand calculations have been avoided with a concentration on the interpretation of computer data analysis. Medical Statistics at a Glance is versatile in its use as an explanation, a revision summary and a long-term source of reference. Worked examples to accompany each topic. Emphasis on computer analysis of data rather than hand calculations. Supported by a website at http://www.medstatsaag.com/ - this site contains useful self-assessment questions to aid student learning.

Applied Medical Statistics Using SAS-Geoff Der 2012-10-01 Written with medical statisticians and medical researchers in mind, this intermediate-level reference explores the use of SAS for analyzing medical data. Applied Medical Statistics Using SAS covers the whole range of modern statistical methods used in the analysis of medical data, including regression, analysis of variance and covariance, longitudi

Using and Understanding Medical Statistics-David E. Matthews 1988

Medical Biostatistics, Fourth Edition-Abhaya Indrayan 2017-11-27 Encyclopedic in breadth, yet practical and concise, Medical Biostatistics, Fourth Edition focuses on the statistical aspects ofmedicine with a medical perspective, showing the utility of biostatistics as a tool to manage many medical uncertainties. This edition includes more topics in order to fill gaps

in the previous edition. Various topics have been enlarged and modified as per the new understanding of the subject.

Statistical Reasoning in Medicine-Lemuel A. Moyé 2007-06-13 The 2nd Edition of this popular book emphasizes patient and community protection, illustrates the correct use of statistics in health care research for healthcare workers and adds considerable new and updated information. The new edition smooths the learning curve for health care researchers, further de-emphasizing mathematical and computational devices and bringing the principles of statistical reasoning into reach for the uninitiated. New figures, discussion and illustrations fortify each chapter. In addition, three new appendices have been added on the normal distribution, sample size computations, and new requirements for the use of statistics in the courtroom.

Stats.con-James Penston 2010 About Stats.con - How we've been fooled by statistics-based research in medicine: Statistics-based research is the method by which the causes of disease and the effectiveness of new treatments are investigated. Epidemiological studies and large-scale randomised controlled trials dominate medical research. Judged by the number of papers published each year, this type of research would appear to be a success. Yet it s a triumph of appearance over substance. We ve been cajoled into believing that great advances in medicine have occurred when, in fact, this isn t the case. Large RCTs are placed at the summit of the hierarchy of evidence and are claimed to be the most reliable means of establishing causal relationships in medical research. They are highly complex structures designed to identify small differences in outcome between the active treatment group and controls. But how do we know that the observed difference is caused by the drug? Proponents of RCTs assert that the method excludes alternative explanations namely, the unequal distribution of other causal factors, bias in the assessment of the outcome and chance. In other words, they believe that these studies have internal validity. The primary thesis of stats.con is that the grounds for causal inference in statistics-based research are lacking. Firstly, the components of the RCT including randomisation, allocation concealment, double-blind administration of treatment, the handling of withdrawals and drop-outs, and the statistical tests don t guarantee that the conditions for internal validity have been satisfied. Secondly, the frequentist approach to statistics, which continues to be used in almost all medical research studies despite being subjected to serious criticisms in recent years, is unsound. Thirdly, and most importantly, the inference from a small difference in outcome to the presence of a causal relationship is highly questionable. Given these arguments, it s of some importance to note that neither the results of individual RCTs nor the statistical method in general can be tested independently. This is an inevitable consequence of the subject matter of this type of research which involves heterogeneous samples with unknown mixtures of constituents. The inability to test the results of statistics-based research is of particular concern as fraud is more common than hitherto supposed in medical research. But even if we were to accept the validity of causal inference in this situation and to dismiss concerns about independent testing, we would still face the unpalatable truth that the product of statistics-based research is of little value. The reliability of any generalisation from the results of an individual study to the wider population of patients that is, the external validity is always open to question. We can never know whether the results of a RCT apply to either a particular patient or to a specified group. This is an enormous disadvantage in medicine. But that s not all. The size of the treatment effect in large-scale studies is very small. Indeed, it s so small that the true size of the effect is deliberately hidden by researchers and others with a vested interest in the outcome of the studies. When we look closely, the product of these studies is of dubious worth and doubtful meaning. The reasons for the widespread acceptance of statistics-based research are to be found in the events of the past fifty years or more. History shows how the advocates have used every means at their disposal to spread a flawed methodology and how their views have infiltrated the thinking of generations of researchers, practicing physicians and others involved in the care of patients. But this doesn t apply only to medical research. Many other academic disciplines use similar methods. If, as is argued in stats.con, the case against statistics-based research is made, then the implications extend far beyond the field of medicine.

JAMA Guide to Statistics and Methods-Edward H. Livingston 2019-11-29 Publisher's Note: Products purchased from Third Party sellers are not

guaranteed by the publisher for quality, authenticity, or access to any online entitlements included with the product. The world-renowned experts at JAMA® explain statistical analysis and the methods used in medical research Written in the language and style appropriate for clinicians and researchers, this new JAMA Guide to Statistics and Methods provides explanations and expert discussion of the statistical analytic approaches and methods used in the medical research reported in articles appearing in JAMA and the JAMA Network journals. This addition to the JAMAevidence® series is particularly timely and necessary because today's physicians and other health care professionals must pursue lifelong learning to keep up with the ever-expanding universe of new medical science and evidence-based clinical information. Readers and users of research articles must have a firm grasp of the myriad new statistical, analytic, and methodologic approaches used in contemporary medical studies. To provide concrete examples, the explanations in the book link to research articles that incorporate the specific statistical test or methodological approach being discussed.

Quantitative Research in Human Biology and Medicine-Sigismund Peller 2013-10-22 Quantitative Research in Human Biology and Medicine reflects the author's past activities and experiences in the field of medical statistics. The book presents statistical material from a variety of medical fields. The text contains chapters that deal with different aspects of vital statistics. It provides statistical surveys of perinatal mortality rate; epidemiology of various diseases, like cancer, tuberculosis, malaria, diphtheria, and scarlatina; and discussions of various aspects of human biology such as growth and development, genetics, and nutrition. The inheritance of mental qualities; the law governing multiple births; and historical demography are covered as well. Medical statisticians and physicians will find the book interesting.

Basic Skills in Statistics-Adrian Cook 2004 Statistics can be an intimidating subject for many students and clinicians. This concise text introduces the basic concepts that underpin medical statistics, and using everyday clinical examples, highlights the importance of statistical principles to understanding and implementing research findings in routine clinical care. This book will be an essential tool for students, clinicians in training, nurses and GPs. Table of Contents: Part 1 Introduction Part 2 Laying the foundations: measure and probability Part 3 Description of a single variable Part 4 Linking two variables Part 5 Statistical inference Part 6 Study design Part 7 Combining studies: systematic reviews and meta-analyses Part 8 Managing data

Statistical Methods in Laboratory Medicine-P. W. Strike 2014-05-16 Statistical Methods in Laboratory Medicine focuses on the application of statistics in laboratory medicine. The book first ponders on quantitative and random variables, exploratory data analysis (EDA), probability, and probability distributions. Discussions focus on negative binomial distribution, non-random distributions, binomial distribution, fitting the binomial model to sample data, conditional probability and statistical independence, rules of probability, and Bayes' theorem. The text then examines inference, regression, and measurement and control. Topics cover analytical goals for assay precision, estimating the error variance components, indirect structural assays, functional assays, bivariate regression model, and least-squares estimates of the functional relation parameters. The manuscript takes a look at assay method comparison studies, multivariate analysis, forecasting and control, and test interpretation. Concerns include time series structure and terminology, polynomial regression, assessing the performance of the classification rule, quantitative screening tests, sample correlation coefficient, and computer assisted diagnosis. The book is a dependable reference for medical experts and statisticians interested in the employment of statistics in laboratory medicine.

Using and Understanding Medical Statistics-David E. Matthews 1996-01-01 This latest edition is highly recommended both as an excellent introduction to medical statistics and as a valuable tool in explaining the more complex statistical methods and techniques used today.

Riemannian Geometric Statistics in Medical Image Analysis-Xavier

Pennec 2019-09-02 Over the past 15 years, there has been a growing need in the medical image computing community for principled methods to process nonlinear geometric data. Riemannian geometry has emerged as one of the most powerful mathematical and computational frameworks for analyzing such data. Riemannian Geometric Statistics in Medical Image Analysis is a complete reference on statistics on Riemannian manifolds and more general nonlinear spaces with applications in medical image analysis. It provides an introduction to the core methodology followed by a presentation of state-of-the-art methods. Beyond medical image computing, the methods described in this book may also apply to other domains such as signal processing, computer vision, geometric deep learning, and other domains where statistics on geometric features appear. As such, the presented core methodology takes its place in the field of geometric statistics, the statistical analysis of data being elements of nonlinear geometric spaces. The foundational material and the advanced techniques presented in the later parts of the book can be useful in domains outside medical imaging and present important applications of geometric statistics methodology Content includes: The foundations of Riemannian geometric methods for statistics on manifolds with emphasis on concepts rather than on proofs Applications of statistics on manifolds and shape spaces in medical image computing Diffeomorphic deformations and their applications As the methods described apply to domains such as signal processing (radar signal processing and brain computer interaction), computer vision (object and face recognition), and other domains where statistics of geometric features appear, this book is suitable for researchers and graduate students in medical imaging, engineering and computer science. A complete reference covering both the foundations and state-of-the-art methods Edited and authored by leading researchers in the field Contains theory, examples, applications, and algorithms Gives an overview of current research challenges and future applications

Statistical Remedies for Medical Researchers-Peter F. Thall 2020-03-12 This book illustrates numerous statistical practices that are commonly used by medical researchers, but which have severe flaws that may not be obvious. For each example, it provides one or more alternative statistical methods that avoid misleading or incorrect inferences being made. The technical level is kept to a minimum to make the book accessible to non-statisticians. At the same time, since many of the examples describe methods used routinely by medical statisticians with formal statistical training, the book appeals to a broad readership in the medical research community.

Clinical and Statistical Considerations in Personalized Medicine-Claudio Carini 2014-03-27 The Future of Clinical Research and Health Care: From Empirical to Precision Medicine Clinical and Statistical Considerations in Personalized Medicine explores recent advances related to biomarkers and their translation into clinical development. Leading clinicians, biostatisticians, regulators, commercial professionals, and researchers address the opportunities and challenges in successfully applying biomarkers in drug discovery and preclinical and clinical development. Robust Biomarkers for Drug Development and Disease Treatment The first four chapters discuss biomarker development from a clinical perspective. Coverage ranges from an introduction to biomarkers to advances in RNAi screens, epigenetics, and rare diseases as targets for personalized medicine approaches. Subsequent chapters examine the statistical considerations in applying a personalized medicine approach, including multiplicity in pharmacogenomics. The last chapter assesses the regulatory issues involved in using biomarkers. Improve Patient Care and Reduce Costs and Side Effects Despite the vast amount of literature on biomarkers, there is no comprehensive book that integrates the clinical and statistical components. This book is one of the first to incorporate both the clinical and statistical aspects of biomarkers in the personalized medicine paradigm. Covering a wide spectrum of personalized medicine-related topics, it presents state-of-the-art techniques for advancing the application of biomarkers in drug discovery and development.

Essentials of Medical Statistics-Betty Kirkwood 1991-01-15 A concise, straightforward introduction to medical statistics, this book covers all the topics which a medical student or research worker is likely to encounter in routine work. It can be used for self-teaching, as a reference text, and as a useful companion to basic courses in medical statistics. The book consists of twenty short chapters, each including worked examples, the chapter order reflecting a logical progression of practical concepts rather than a formal

mathematical development.

Bayesian Biostatistics and Diagnostic Medicine-Lyle D. Broemeling 2007-07-12 There are numerous advantages to using Bayesian methods in diagnostic medicine, which is why they are employed more and more today in clinical studies. Exploring Bayesian statistics at an introductory level, Bayesian Biostatistics and Diagnostic Medicine illustrates how to apply these methods to solve important problems in medicine and biology. After focusing on the wide range of areas where diagnostic medicine is used, the book introduces Bayesian statistics and the estimation of accuracy by sensitivity, specificity, and positive and negative predictive values for ordinal and continuous diagnostic measurements. The author then discusses patient covariate information and the statistical methods for estimating the agreement among observers. The book also explains the protocol review process for cancer clinical trials, how tumor responses are categorized, how to use WHO and RECIST criteria, and how Bayesian sequential methods are employed to monitor trials and estimate sample sizes. With many tables and figures, this book enables readers to conduct a Bayesian analysis for a large variety of interesting and practical biomedical problems.

Sports Medicine Statistics, An Issue of Clinics in Sports Medicine E-Book-Joseph M. Hart 2018-06-23 This issue of Clinics in Sports Medicine, guest edited by Drs. Joe Hart and Stephen Thompson, will cover a variety of interesting topics surrounding Sports Medicine Statistics. Subjects covered include, but are not limited to: Fundamentals of Sports Analytics; Statistical considerations for injury prevention in sports medicine; Mixed model designs for sports medicine research; Clinical Trials in sports medicine: design and analyses; Novel approaches to data presentation; Innovation in analytics – new methods in sports medicine; Patient reported outcome measures in sports medicine; Administrative Databases in sports medicine; and Lessons from the MOON: How to perform multicenter research in sports medicine.

Brief Guidelines for Methods and Statistics in Medical Research-Jamalludin Bin Ab Rahman 2015-10-14 This book serves as a practical guide to methods and statistics in medical research. It includes step-by-step instructions on using SPSS software for statistical analysis, as well as relevant examples to help those readers who are new to research in health and medical fields. Simple texts and diagrams are provided to help explain the concepts covered, and print screens for the statistical steps and the SPSS outputs are provided, together with interpretations and examples of how to report on findings. Brief Guidelines for Methods and Statistics in Medical Research offers a valuable quick reference guide for healthcare students and practitioners conducting research in health related fields, written in an accessible style.