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Statistics for Dummies

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Getting Ahead: A Specialty ENT Text

Sharon Cushing, B.Sc. (OT3)

**Congenital Anomalies
of the Ear, Nose
and Throat**

Edited by Ted L. Tewfik and
Vazken M. Der Kaloustian

Oxford University Press
1997, 579 pp
\$214.50

It is reported that 3% of infants are born with a major birth defect diagnosed within the first year of life.¹ In 1994, congenital defects represented the leading cause of infant mortality in the United States.² A significant proportion of congenital malformations are otolaryngologic in nature or have a significant otolaryngologic component.¹ *Congenital Anomalies of the Ear, Nose and Throat* is a specialty text that

spans the range of medical genetics, epidemiology, embryology, clinical characteristics, diagnostics, and surgical treatments implicated in the assessment of congenital anomalies of the ears, nose, and throat.

This text is divided into nine sections, the first of which presents general themes. The authors begin by reviewing the “necessary basics,” including the molecular structure of DNA, gene expression, mutation and inheritance, chromosomal abnormalities, pedigree symbols, and the prevention and treatment of congenital anomalies. This first chapter presents difficult concepts in medical genetics and dysmorphology in both a succinct and digestible manner. The level of sophistication is neither too simplistic nor too advanced as the authors clearly outline the essential principles necessary for the reader's continued understanding. The public health impact of congenital anomalies is highlighted by a description of the epidemiological characteristics of several defects, including oral clefts, microtia, choanal and esophageal atresia, tracheoesophageal fistula, and congenital deafness. A review of the anatomic structures and facial measurements involved in the evaluation of otolaryngologic malformations is then presented. This description is supplemented by diagrams of the normal anatomy and graphics outlining the distribution of the normal ranges of facial measurements. Although well written and illustrated, this chapter would be improved by additional photographs and diagrams depicting the abnormal findings described in the text. This section of the text also includes a short chapter on human teratogens, presenting the principles of exposure and dose response in addition to reviewing several common teratogens (ethanol, coumarin, anticonvulsants

and retinoids). The clinical effects resulting from exposure to each teratogen are described in the text and are further illustrated with the use of tables and photographs. The General Themes segment is brought to a close with a discussion of prenatal diagnosis. Both invasive and non-invasive modalities are reviewed in this chapter, and the specific use of ultrasonography in prenatal detection of several specific malformations is described.

The following seven sections of the text provide an organized description of anomalies involving the ear, nose, mouth, palate and pharynx, cranium and face, neck, larynx, and esophagus. Each section is organized in a similar fashion. The sections include chapters that review the relevant embryology, the most common congenital anomalies, the associated syndromes, and the surgical management. Numerous photographs, illustrations, diagrams, and imaging are found throughout the text, and they greatly facilitate the reader's understanding. An all-inclusive table outlining all syndromes and conditions associated with the congenital anomaly described can be found in each section's appendix. These tables include the name of the syndrome, the mode of inheritance, the otolaryngologic manifestations, and other manifestations. More than 150 syndromes and conditions are included in each addendum, making it a complete reference that includes even the most rare congenital anomalies.

The final section of the text is a compilation of selected multi-system syndromes and conditions, each of which is illustrated and described with respect to their general manifestations, otolaryngological manifestations, etiology, and differential diagnosis.

Although it is rich in illustrations and photographs, this text is strictly monochromatic and would be greatly enhanced by the addition of colour photographs. The latest edition of this text is copyrighted 1997, raising the concern about the accuracy of the content. This may be particularly applicable to the chapters focusing on medical genetics and prenatal diagnosis, as these fields have seen many recent advances.

Congenital Anomalies of the Ear, Nose and Throat is well written with input from many experts from a variety of disciplines across Canada and the United States. The logical and consistent organization of this text, as well as its extensive index, represents the book's strongest features as they allow the reader to easily navigate through the contents. This text is essentially an inclusive review of the literature on congenital anomalies of the ear, nose, and throat, and it is richly referenced with primary sources throughout. As a result of its price and

specialized focus, it would not be recommended either to medical students or to undifferentiated clinicians. However, this extensive specialty text would appeal to and provide good reference for those interested in teratology, epidemiology, pediatrics, syndromology, medical genetics, otolaryngology, and facial plastic surgery. It would also be a valuable reference text in any hospital or medical library.

1. Tewfik TL and Der Kaloustian VM. ed. (1997). Congenital Anomalies of the Ear, Nose and Throat. Oxford University Press: New York.
2. Petrini J, Damus K, and Johnston Jr. RB. (1997). An Overview of Infant Mortality and Birth Defects in the United States. March of Dimes Birth Defects Foundation, White Plains, New York. *Teratology*. 56(1-2):8-10.

Statistics for Dummies

Irfan A. Dhalla, B.A.Sc. (OT3)

Using Multivariate Statistics, 4th Edition

Barbara G. Tabachnick,
Linda S. Fidell

Allyn and Bacon
2001, 966 pp
\$140.95

One need only leaf through a recent issue of the *Lancet* or the *New England Journal of Medicine* to realize that the 21st century medical researcher must be able to select from a long menu of multivariate statistical techniques. Multiple regression, Kaplan-Meier survival analysis, and repeated measures testing are just three widely used but almost indigestible techniques.

Sadly, the days of thriving on a diet consisting solely of t-tests and Chi-squared analyses are long gone.

It's all too easy for the medical student who is expected to complete a research project to feel overwhelmed. Most of us enter medical school with little or no formal training in statistics. Epidemiology courses within the undergraduate medical curriculum focus on deciphering statistical tests, not on conducting them. Similarly, there are many excellent primers on interpreting statistics in the biomedical sciences, but few that explain how the statistical neophyte should choose which statistical technique to use. Even fewer describe how one actually goes about performing a particular test. Using *Multivariate Statistics*, now in its fourth incarnation, helps fill this gap.

At 966 pages, *Using Multivariate Statistics* is clearly too long for

the average medical student to put onto his or her pleasure reading list. The second chapter, however, allows the reader to use the book as an efficient learning tool. Entitled "A Guide to Statistical Techniques: Using the Book", the chapter suggests which statistical technique the reader needs and refers to the appropriate chapter. Each subsequent chapter (including one on univariate statistics) functions largely as a stand-alone primer, complete with theoretical and practical discussions as well as instructions on how to perform the designated manipulation with three commonly used software packages. The text is practical and concise, and frequent examples aid in understanding the material.

The ideal situation for most medical students performing research is to use the services of a professional statistician. Professionals save time and their expertise helps prevent time-consuming and embarrassing mistakes. *Using Multivariate Statistics* does not replace personal consultation. Even after reading the text, most medical students would probably be reluctant to endorse the do-it-yourself approach to multivariate statistics. Professional statisticians, however, are not always available. As well, some medical students may want to better understand the tests that their statistical consultants recommend. Overall, *Using Multivariate Statistics* is an excellent choice for the health care professional who wants to (or has to) analyze his or her own data.

Spine Trauma

Douglas J. Cook, B.Sc. (OT4)

Spine Trauma

Edited by Alan M. Levine,
Frank J. Eismont,
Steven R. Garfin,
and Jack E. Zigler

W.B. Saunders Company
1998, 688 pp
\$244

Spine Trauma is a multidisciplinary review of the management of spinal injury. The book offers a complete discussion of the acute and long-term care of patients living with spinal cord injury. The editors, all orthopedic surgeons, have collaborated with experts from neurosurgery, neurology, physiotherapy, nutrition, occupational therapy and basic science to compose this thorough

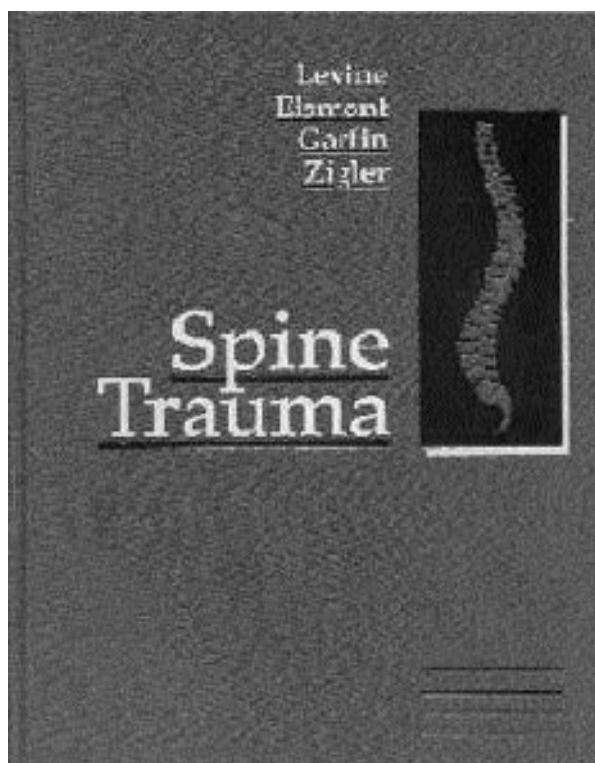
resource manual. The book follows a natural progression of the stages of spinal injury, from acute to long-term care, with emphasis on surgical management of specific injuries. There are three major sections: General Considerations, Management of Specific Injuries and Fractures and Postoperative Care.

Spine Trauma begins with a discussion of the epidemiology of spinal injury in the United States. The incidence of spinal injury is cited as 30 cases per million per year, with automobile related injuries listed as the main cause of injury. Data also indicate that older patients (60 years of age) sustaining spinal cord injury have a significantly lower survival rate than twenty-year-olds sustaining the same injury. Accordingly, psychosocial outcomes, including employability and suicide following an injury, are discussed in detail.

The examination of the spinal patient is outlined in the General Considerations section of the text. It begins with the basic emergency principles for stabilization of the trauma patient. The physical exam follows with a guide for typical inspection and palpation of the patient. Brown-Sequard syndrome, central cord syndrome, and anterior cord syndrome are discussed using cross sections to illustrate the anatomy of the insult involved. Techniques for assessment of reflexes, including joint, bulbocavernosus, and anal reflex, are illustrated with simple drawings for inclusion in the exam. In general, this is an excellent guide to the physical examination, but needs to be independently summarized by the reader for practical reference use.

In the investigation of any spine trauma, determining the anatomy of an injury guides the surgical management of the case. For that reason, pathophysiology, anatomy, radiology, and vascular anatomy are divided and discussed in separate chapters. X-ray, CT, and MRI images are reviewed with multiple images of injuries; the text discusses key points and typical signs in imaging various injuries. Vascular anatomy of the spinal cord is well covered, with drawings demonstrating the course of major vessels, the blood supply of each segment and the venous drainage of the segments. The classification of spinal fractures and surgical approach, including clear anatomical illustrations demonstrating the incision, dissection, and exposure required for each level of the spine, are discussed as individual chapters of the General Principles section. A section on spinal orthoses (cervical collars or braces, halos, thoracolumbosacral orthoses, and lumbosacral corsets) covers the biomechanics and selection of orthoses for managing spine trauma. The approximate cost of each orthotic is given in chart form for consideration before selection. This guide to orthotic selection is as an important resource for those seeking a practical understanding of the orthoses that are available for specific applications.

The surgical management of spinal injury is the emphasis of *Spine Trauma*. It forms the second section of the book, which is subdivided by the level of injury and further subdivided by



type of injury. It encompasses one-half of the text. The discussion of each injury includes a historic perspective, etiology and pathophysiology of the injury, clinical findings, and diagnostic evaluation. The surgical procedures required to repair fractures and ligamentous damage is particularly well covered. This section is well organized, acting as a complete guide to the management of specific injuries.

The third and final section of the text deals with long-term care. Specialists in occupational and physiotherapy begin by covering rehabilitation in the spinal injury patient. Requirements for patients with specific limitations are included as subsections to the chapter. For instance, considerations in rehabilitating a patient requiring ventilation are covered. Training with equipment such as wheel chairs, orthoses, and bathroom equipment required by patients with specific deficits is thoroughly covered in this section. Finally, monitoring improvement in activities of daily living and goal setting for patients are outlined. The final chapters of the text deal with the complications of chronic spinal injuries. Methods and treatment of complications of long-term catheterization, management of pressure sores, structural consequences of spasticity and chronic pain syndromes are the most common topics discussed. These chapters would be especially useful to those involved in the primary care of patients with spinal cord injury.

This text is a complete review of spinal injury. It is an excellent resource for medical professionals seeking detailed information on the etiology, pathophysiology, anatomy, and management of spinal cord injury. However, the text is not conducive to quick review like other resources in the field. The clear text and graphics make the book extremely user friendly. For medical students, the textbook is an excellent resource to review procedures before assisting in the operating room. For students with a specific interest in spine surgery, the book is an excellent overview of the trauma cases that are encountered in practice.

An Attempt at Creating a Guideline for Improving a Nation's Health

Naomi Spitale, B.Sc. (OT5)

The Potential for Health: How to Improve the Nation's Health

Kenneth C. Calman

Oxford University Press
1999, 280 pp
\$45.95

Sir Kenneth Calman published *The Potential for Health* during the latter portion of his seven-year post as the Chief Medical Officer to the Department of Health in Britain. Calman's book is a collection of talks and speeches that outline his personal philosophy about health, as it explores a nation's potential to achieve both a healthier population and a more effective health care system. Although

the book is written for a non-professional audience, Calman hopes that decision makers of health care will find his book enlightening as they embark on the complex task of restructuring their health care systems to accommodate the changing needs of society. Since Canada's health care system is on the brink of change, this book is a resource for the general public, health care workers, and politicians of this country who wish to participate in the inevitable health care debate.

Calman begins *The Potential for Health* by revealing his goal, which is to identify key issues in health and health care, and to suggest ways to improve them. Most health-related issues and his formula for "making it happen" are discussed in the introductory chapter and are later expanded upon. Thus, those who are familiar with various aspects of health will gain insight into Calman's philosophies by reading the introductory chapter. Others will benefit from the entire book as it presents a well-rounded view of health that is not often appreciated by the majority of people.

The Potential for Health is extremely informative not only because it outlines several determinants of health, and the importance of ethics and public involvement in health, but also because it indicates that a health care system does not define a nation's health status. In fact, Calman states, "If the health of a population is to be changed, the least effective way to do this is through health services". Calman's analysis of a health care system is as thorough as his explanation of the various facets of health. He identifies several issues that are

critical to all health care systems, including quality of care, setting and measuring standards, evidence based medicine, management, and resource allocation. The chapter, "Making it Happen" describes the path that will lead to a refinement in the issues addressed regarding a nation's health. The agenda Calman suggests is not a clearly defined, simple protocol. He does not introduce a radical route that will lead to the attainment of better health and health care, rather, he states numerous times that improvements can be made if our existing knowledge is harnessed. Changes must occur at multiple levels of society, and all citizens, not just individuals at the front line of health care, or decision makers of health care policy must be involved. As such, these changes will be difficult to implement and will ultimately take many years to accomplish. Although *The Potential for Health* has much to offer, the book has some flaws. As stated, and despite the promise made by its title, this book does not reveal an easy to follow formula that will help improve the health of a nation. Furthermore, Calman's book does not address the inherent problems of the public health care system that he advocates for. For example, he does not attempt to suggest an antidote for the long waiting lists, or the rationing of care that arises as a result of the gap between supply and demand that exists in universal health care systems.

In light of today's headlines highlighting the need for a revision of Canada's health care system, *The Potential for Health* is suitable for all audiences because it eloquently explains the fundamental principles of health that must be appreciated before the ailing health of a nation can be remedied. *The Potential for Health* is also recommended for medical students who wish to gain a broader understanding of health-related issues through an easy to read book that presents many analogies which are applicable at the national and international level.

A Must-Read Radiology Book for Surgeon To-Be or Not-To-Be

Gilbert H. L. Tang, B.A. (OT2)

Imaging for Surgeons: A Clinical Guide, 2nd Ed.

David A. Lisle

Oxford University Press
1999, 220 pp
\$88

With continuing advances in medical technology, the use of diagnostic imaging in addition to history taking and physical exam has almost become a standard practice to diagnose and manage diseases in modern medicine. The growing importance of radiology is particularly apparent and relevant in the field of surgery, where accurate visualization of the anatomy is critical in determining whether an operation is necessary. And if the patient was to proceed with surgery, various imaging modalities such as CT, MRI and angiography would assist the surgeon in identifying regional pathology and maximizing safety and efficiency during the operation. Post-operatively, diagnostic imaging provides clues to causes of potential complications, leading to appropriate medical or surgical management.

Currently, medical students often acquire their knowledge in radiology via informal clinical teaching, either through core rotations or electives. While this may be a good method of rapidly acquiring experience in interpreting films such as X-rays, CTs and MRIs, students often lack an understanding of the basic principles of different imaging modalities. For surgical trainees and students participating in surgical rotations, the ability to correlate clinical conditions with radiological images is important in both diagnosis and treatment. Most radiology textbooks are daunting in both volume and detail. A book that can concisely present surgical problems along with radiological images would be ideal in this setting.

Imaging for Surgeons, 2nd Ed., according to author David A. Lisle, is a guide intended for surgical trainees who would like to familiarize themselves with the application of diagnostic imaging in surgery. The book gives the reader salient knowledge in general and interventional radiology to aid in surgical diagnosis and management. The first chapter presents an overview of each imaging modality with excellent points on application, advantages and disadvantages, helpful to every medical student. The other chapters are divided using a systems approach. These chapters include general topics on acute abdomen, trauma, breast, urology, cardiovascular and gastrointestinal systems, and head and neck, plus specialty

subjects on paediatrics, oncology and transplantation. Each chapter concludes with a "Further Reading" section listing research papers of interest.

The book is a relatively quick read (220 pages) and easy to follow. The text is presented in a clear and concise point-form format. For each clinical problem, the author outlines a logical sequence of investigation, including indications and investigation of choice. In your general surgery rotation, have you ever wondered when to do a barium swallow, small bowel follow-through or barium enema? This book will clearly outline the indications and methodology of each procedure. Many surgical problems are well illustrated by X-rays and CTs. More specialized imaging modalities such as helical CT, nuclear scan and angiography are also discussed in relevant cases. Diagrams and images have been carefully selected to highlight key issues. The unique and most helpful aspect of this book is its images; there are arrows and symbols indicating the pathology, as well as brief point-form captions outlining the important features.

This book is not designed to be a textbook but rather a guide to the use of diagnostic imaging in common surgical problems. The picture qualities are generally excellent except for a few images, where some of the indicated features are not visible. The section on common orthopaedic problems is contained within the "Trauma" chapter and could be more easily located by moving it to an independent chapter. The price of \$88 may be too expensive for medical students and residents to purchase, especially if one may only read the book a few times for content review or for gaining a rapid knowledge of using radiology in surgery.

Overall, *Imaging for Surgeons* is an outstanding book outlining surgical diagnostic imaging for both medical students and surgical trainees. For medical students who want the salient knowledge of radiology in surgical problems, this is the book to read.



Any Thoughts On The UTMJ?

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