

## BOOK LIST

*By: Phil Hahn, Queen's University, January 4, 2010*

*Books I have on my bookshelf and recommend to busy clinicians wishing to better understand key concepts in biostatistics and epidemiology.*

### BIOSTATISTICS

Geoffrey R. Norman and David L. Streiner. **PDQ Statistics**. 3<sup>rd</sup> Edition (B.C. Decker Inc., Hamilton, 2003) **Highly Recommended**

PDQ stands for "Pretty - Darn - Quick." One can quickly look up concise descriptions of statistical tests that you may come across in reading journal articles.

Douglas G. Altman. **Practical Statistics for Medical Research**. (Chapman & Hall, London, 1991)

Douglas Altman is Director of the Centre for Statistics in Medicine in Oxford, U.K. For medical investigators and clinicians who wish to gain insight into statistical principals and methods. By discussing both the use and misuse of statistics this book should give the reader the material to be able to judge the appropriateness of the methods and interpretation in papers published in medical journals.

Douglas G. Altman, David Machin, Tevor N. Bryant and Martin J. Gardner (editors) **Statistics with Confidence: Confidence intervals and statistical guidelines**. 2<sup>nd</sup> Edition (BMJ Books 2000)

You may have heard me say that... "confidence intervals are a much better way to present results than P values". This book gives guidelines for calculating and using confidence intervals around just about any point estimate.

### EPIDEMIOLOGY

David L. Streiner and Geoffrey R. Norman. **PDQ Epidemiology**. 2<sup>nd</sup> Edition (B.C. Decker Inc., Hamilton, 1998) **Highly Recommended**

PDQ stands for "Pretty - Darn - Quick." An efficient study guide to the world of epidemiology: data gathering, sampling procedures, study designs, biases, measurement reliability/validity and much more.

David L. Sackett, R. Brian Haynes, Gordon H. Guyatt and Peter Tugwell. **Clinical Epidemiology: A Basic Science for Clinical Medicine**. 2<sup>nd</sup> Edition (Little Brown and Company, Toronto, 1991)

Applies the principles learned in epidemiology to the complex clinical decisions that must be made every day.

### EVIDENCE-BASED MEDICINE

Sharon E. Straus, W. Scott Richardson, Paul Glasziou and R. Brian Haynes. **Evidence-Based Medicine: How to practice and teach EBM**. 3<sup>rd</sup> Edition (Edinburgh: Churchill Livingstone, 1997)

This book is written for the busy clinician, thus it's short and practical. David Sackett is acknowledged in the preface as the senior author of the first edition and mentor to Sharon Straus.

## **EVIDENCE-BASED MEDICINE**

Ann McKibbin and Nancy Wilczynski. **PDQ Evidence-Based Principles and Practice**. 2<sup>nd</sup> Edition (People's Medical Publishing House, Shelton, Connecticut, 2009)

"Provides a plain-language approach to basic principles of evidence generation and application" (Brian Haynes, Chief, Health Information Research Unit at McMaster University). Good section on systematic reviews.

Trisha Greenhalgh. **How to Read a Paper: The Basics of Evidence-Based Medicine**. 3<sup>rd</sup> Edition (BMJ Books 2006)

One of the bestselling texts on evidence-based medicine, used by health care professionals and medical students worldwide. Good critical appraisal primer for Journal Club with chapters like "statistics for the non-statistician".

Marshall Godwin and Geoffrey Hodgetts. **The Bedford murder: An evidence-based mystery**. (Hanley & Belfus Inc.: Philadelphia, 2003)

Authors from Queen's University teach EBM concepts through a murder mystery.

Richard K. Riegelman. **Studying a Study and Testing a Test: How to read the medical literature**. (Little, Brown and Company, Boston, 1981)

This self-study, active-participation book was written to show clinicians how to read the medical literature thoughtfully and efficiently. Good chapter on diagnostic test statistics: sensitivity/specificity and predictive values.

## **RESEARCH DESIGN**

Kenneth F. Shultz and David A. Grimes. **The Lancet Handbook of Essential Concepts in Clinical Research**. (Elsevier, Toronto, 2006)

Each chapter represents a peer-reviewed article published in The Lancet from 2002 to 2005.

"Few doctors would quibble with the view that their skills in evaluating clinical research are modest. This book provides a superb and indispensable guide to the interpretation of research for the busy doctor." (Richard Horton, Editor, The Lancet)

Stephen B. Hulley, Steven R. Cummings, Warren S. Browner, Deborah Grady, Norman Hearst and Thomas B. Newman. **Designing Clinical Research: An Epidemiologic Approach**. 2<sup>nd</sup> Edition (Lippincott Williams & Wilkins, Philadelphia, 2001)

Thoroughly covers all elements of designing retrospective, prospective and experimental studies. Addresses sample size estimation with appendices that provide estimates for the different study designs.

Stuart J. Pocock. **Clinical Trials: A Practical Approach**. (John Wiley & Sons, Toronto, 1983)

Excellent text devoted to clinical trials. Good chapters on crossover trials and sample size estimation.

Alejandro Jadad. **Randomized Controlled Trials**. (BMJ Books, 1998)

For busy readers who wish to understand the basic principles of RCTs and their role in health care decisions.

## **SURVEY RESEARCH**

Priscilla Salant and Don A. Dillman. **How to Conduct Your Own Survey.** (New York, John Wiley & Sons, 1994). **Highly Recommended**

Step by step guide to survey research. Start with this book.

Pamela Alreck and Robert Settle. **The Survey Research Handbook.** (Boston, Irwin/McGraw-Hill, 1995)

From planning and designing your survey to analyzing the data. Good chapter on sampling.

## **HEALTH MEASUREMENT SCALES**

David L. Streiner and Geoffrey R. Norman. **Health Measurement Scales: A Practical Guide to Their Development and Use.** 2<sup>nd</sup> Edition (Oxford Medical Publications, Oxford, 1995)

This text enables experienced researchers and those coming new to the subject to develop accurate, sensitive, and easy-to-use measurement scales in their clinical practice.

## **PUBLISHING**

Thomas A. Lang and Michelle Secic. **How to Report Statistics in Medicine: Annotated Guidelines for Authors, Editors and Reviewers.** 2<sup>nd</sup> Edition (American College of Physicians, Philadelphia, 2006)

This is not a typical text detailing statistical calculations. It is an excellent guide for reporting and interpreting statistical presentations.

Thomas A. Lang. **How to Write, Publish, & Present in the Health Sciences: A Guide for Clinicians & Laboratory Researchers.** (ACP Press, Philadelphia, 2010)

"Lang's earlier book on how to report medical statistics proved so useful that I bought a second copy to keep in my home office. His new book features the same type of pragmatic advice on the nuts and bolts of scientific writing." (David Grimes, University of North Carolina School of Medicine)

## **THE MEDIA**

Steven Woloshin, Lisa M. Schwartz and H. Gilbert Welch. **Know Your Chances: Understanding Health Statistics.** (University of California Press, Berkeley, 2008) **Highly Recommended**

How to see through the hype in medical news, ads, and public service announcements. I had the privilege of meeting these authors at an NIH "Medicine in the Media" workshop at Dartmouth College in the summer of 2006. This annual training opportunity helps develop journalists' ability to evaluate and report on medical research. Steven, Lisa and Gil are world leaders in knowledge translation, particularly in the area of risk assessment. Get to know what these folks have to say!

Victor Cohn and Lewis Cope. **News & Numbers: A Guide to Reporting Statistical Claims and Controversies in Health and Other Fields.** 2<sup>nd</sup> Edition (Iowa State Press, Iowa, 2001)

"Victor Cohn of the Washington Post has prepared this manual to help reporters cut through statistical tangles. By such efforts, scientists and writers may gradually upgrade the whole communication system, scientific and journalistic." (Frederick Mosteller, Professor Emeritus of Mathematical Statistics, Harvard University)