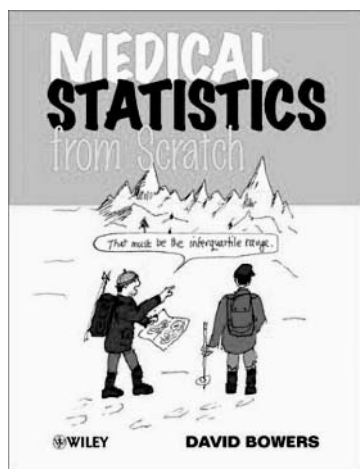# Resource review

Bowers, D. *Medical statistics from scratch.* Chichester: J Wiley, 2002.

Medical statistics from scratch can be purchased online at http://www.wileyeurope.com for £23.

Students genuinely learning from scratch must be assumed to have no knowledge of the subject at all, and lacking this knowledge, are ignorant of what it is they need to know. Would-be learners choosing a basic medical statistics book should therefore be very clear about *why* they want to learn statistics. Particularly, they must decide whether they are ''doers'' who are hands-on researchers (a minority) or ''users'' whose main need is to evaluate research done by others (the vast majority).

This book is aimed at a wide audience. However, it leans more strongly towards ''doers'' than ''users.'' For example, almost a third of the book is spent explaining how to describe data through tables, charts, frequency distributions and summary measures. Also, the explanations of statistical methods often include examples of output from SPSS and Minitab, with guidance on how to interpret them. These examples are useful only to those actually performing calculations with these computer packages. Knowledge of how to use the programs is assumed.

The book covers the usual range of basic methods for continuous and categorical data. It also includes brief descriptions of different study designs and full explanations of multiple linear and logistic regression. What makes it stand out is its informality (it includes cartoons and the odd joke) and the chatty style of the writing. This makes it both accessible and generally very clear, though readers might well be baffled by the wordy explanation of logistic regression (which includes an inaccurate statement of the logit transformation), or by the idiosyncratic definition of a contingency table. There are also some confusing typos. The text is enlivened by numerous examples from the medical literature, and there are self-test exercises with helpful answers posted on a website.

Despite its many assets, I have one strong reservation about the book. The author seems to accept the view that results can be arbitrarily divided into significant and non-significant using the $p < 0.05$ cut-off point. Thus the 95% confidence interval is presented primarily as a significance test, the decision rule being whether or not it straddles the null value. And the interpretation of the p value is explained only in relation to its critical value, stated as ''usually 0.05 but sometimes 0.01.'' The implication is that the actual value of p doesn't matter. This may be adequate information for getting through an exam, but it is inadequate and misleading advice for those of us wanting to evaluate medical research. Perhaps because of this straitjacket, the clinical implications of a study never come alive. For example, we are not told that the confidence interval indicates the clinical importance (or otherwise) of an observed difference between treatments. Or that the width of the interval conveys useful information even if the interval crosses the null value. Or that a p value of 0.001 is more convincing evidence of a real effect than a p value of 0.05.

In sum, the book is a friendly introduction for doers of research, with the reservation noted above. I prefer the more clinically focused introductory text by Anna Hart: *Making sense of statistics in healthcare*. And users of research (most of us) might look to the other book by David Bowers: *Understanding clinical papers*.

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RATINGS:

Methods/Quality of information: ★★★★☆
Clinical usefulness: ★★☆☆☆