

**Critical Thinking:
Understanding and
Evaluating Dental
Research, 2nd ed.**

Donald Maxwell Brunette, with contributors Kathryn Hornby and Carol Oakley

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Critical Thinking: Understanding and Evaluating Dental Research is a significantly updated and revised edition of the text by Donald M. Brunette that first appeared in 1996. Given the increased emphasis on evidence-based dentistry and the appropriate integration of research evidence into the clinical decision making process, the appearance of this new edition is especially timely. The purpose of the book is to provide dental students and dental educators, as well as the experienced practitioner, with the tools to critically evaluate the dental research literature as an aid to clinical practice. While the first edition consisted of 244 pages and nineteen chapters (including a problem set and commentary as the final chapter), the second edition has been expanded to 312 pages and twenty-two chapters, with additional material on rhetoric, logic, and statistical analysis. The second edition, like the first, includes a number of statistical tables in an appendix. A large number of figures and tables complements the text.

Brunette includes chapters on scientific logic, scientific rhetoric, and research design, including experimental, observational, and correlational research. Especially valuable is the chapter on inductive logic, hypotheses, and causation, which provides a useful discussion of the philosophical underpinning of research and the notion of causation. These chapters provide the reader with a greater appreciation of the difficulties confronting researchers as they attempt to document and demonstrate causal relationships. Also valuable is a revised chapter on “Quacks, Cranks, and Abuses of Logic,” which does a good job of debunking pseudoscientific claims that are prevalent in popular culture. Many of these chapters stand alone quite well.

Statistics is covered in separate chapters on statistics associated with discrete and continuous variables, the problem of error in measurement, diagnostic tests, and measurements in clinical practice, as well as a chapter entitled “Statistics as an Inductive Argument and Other Statistical Concepts.” The writing in these chapters is clear but dense. To grasp the material in these chapters, a reader with limited research or statistical experience would need to read them very carefully, in the order in which the chapters are presented, and be able and willing to deal with basic mathematics, including algebra.

Examples in the book are drawn from both clinical and basic dental research. Additionally, Brunette pulls in a wide variety of material from outside the biomedical sciences on everything from Bo Derek to Aristotelian philosophy. However, Brunette is at his best here as he uses this outside material to effectively make larger points about the process of research.

Brunette also includes a chapter on searching the dental literature in which he describes search strategies such as the PICO (Problem, Intervention, Comparison, and Outcome) approach and provides an introduction to using the U.S. National Library of Medicine PubMed system. Brunette briefly discusses collections of evidence, such as review articles, systematic reviews, and meta-analysis, as well as the Cochrane Collaboration. Given the increasing emphasis such organizations as the American Dental Association are placing on this type of literature as the foundation of evidence-based dentistry rather than individual research studies, an expanded

discussion of the strengths and weaknesses of this type of literature would have been useful.

Perhaps the greatest strength of Brunette's book—its comprehensiveness—is also its greatest weakness. In the dense four-year curriculum that is characteristic of most dental schools, there is probably insufficient time to give this book its due. There is probably enough material in the book for one or two semesters of undergraduate (prebaccalaureate) courses in research design and statistics. Having said that, however, the dental student, educator, or practitioner who is willing to spend sufficient time with *Critical Thinking: Understanding and Evaluating Dental Research* will have a better understanding of the research process, a comprehensive armamentarium of tools for evaluating the dental research literature, and, perhaps, a greater appreciation of the problems and rewards associated with the research endeavor.

Brushing Your Teeth Can Be Fun: And Lots of Other Good Ideas for How to Grow Up Healthy, Strong, and Smart

Munro Leaf

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This book was originally published in 1943 as *Health Can Be Fun* by Munro Leaf (1905–76), an author famous for children's books, especially *The Story of Ferdinand*. The book on health was one of a series of nearly forty books by the author including *Grammar Can Be Fun*, *Mathematics Can Be Fun*, *How to Behave and Why*, and *Manners Can Be Fun*.

Brushing Your Teeth Can Be Fun reviews basic habits that children should follow to promote good health. Much of the advice for good health is still very relevant today: eat a well-balanced diet with a variety of foods; exercise; get plenty of sleep; brush your teeth twice a day; visit a dentist twice a year; let an adult know if you have cuts, burns, scratches; don't try to self-medicate; and keep yourself clean, especially your hands. The advice related to colds and flu reflects beliefs that were common when the book was first published. For example, the author notes that we catch colds by getting chilled after being too warm or by sleeping in a draft.

Although some of the health advice provided by the author is no longer accepted as valid, the book has catchy visual illustrations (stick figures) and sends a convincing message to the young audience about the importance of taking care of your health. This is a good book to have in a dental office waiting area for parents and children to read.