

# Evidence-based Imaging

[DOWNLOAD HERE](#)

1;Foreword;8 2;Preface;10 3;Contents;12 4;Contributors;16 5;Part I Principles, Methodology, Economics, and Radiation Risk;22 5.1;1: Principles of Evidence-Based Imaging;23 5.1.1;I. What Is Evidence-Based Imaging?;23 5.1.2;II. The Evidence-Based Imaging Process;25 5.1.2.1;A. Formulating the Clinical Question;25 5.1.2.2;B. Identifying the Medical Literature;25 5.1.2.3;C. Assessing the Literature;25 5.1.2.3.1;1. What Are the Types of Clinical Studies?;26 5.1.2.3.2;2. What Is the Diagnostic Performance of a Test: Sensitivity, Specificity, and Receiver Operating Characteristic Curve?;27 5.1.2.3.3;3. What Are Cost-Effectiveness and Cost-Utility Studies?;29 5.1.2.4;D. Types of Economic Analyses in Medicine;29 5.1.2.5;E. Summarizing the Data;31 5.1.2.6;F. Applying the Evidence;31 5.1.3;III. How to Use This Book;34 5.1.4;IV. Take Home Appendix 1: Equations;35 5.1.5;V. Take Home Appendix 2: Summary of Bayes Theorem;35 5.1.6;References;36 5.2;2: Critically Assessing the Literature: Understanding Error and Bias;38 5.2.1;Issues;38 5.2.2;I. What Are Error and Bias?;38 5.2.3;II. What Is Random Error?;39 5.2.3.1;A. Type I Error;39 5.2.3.2;B. Confidence Intervals;39 5.2.3.3;C. Type II Error;40 5.2.3.4;D. Power Analysis;40 5.2.4;III. What Is Bias?;40 5.2.5;IV. What Are the Inherent Biases in Screening?;42 5.2.6;V. Qualitative Literature Summary;42 5.2.7;Conclusion;43 5.2.8;Take Home Tables and Figures;43 5.2.9;References;45 5.3;3: Radiation Risk from Medical Imaging: A Special Need to Focus on Children;46 5.3.1;Key Points;47 5.3.2;Definition and Pathophysiology;47 5.3.2.1;Radiation Terminology;47 5.3.2.2;Radiation Mechanisms of Effect;47 5.3.2.3;Types of Biological Effects;48 5.3.2.4;Radiation Doses in Medical Imaging;48 5.3.3;Epidemiology and Medical Utilization of Ionizing Radiation;48 5.3.3.1;Increased Dose from Medical Imaging;49 5.3.3.2;Increased Use of CT Scans;49 5.3.3.3;Assessing Risk Versus Benefit when Using Medical Imaging in Children;49 5.3.4;Overall Cost to Society;50 5.3.5;Goals;50 5.3.6;Methodology;50 5.3.7;I. Is There a Cancer Risk from Low-Level Radiation Used in Medical Imaging? What Are the Uncertainties in the Data?;51 5.3.7.1;A. Cancer Risk and Radiation Following Diagnostic Medical Imaging;51 5.3.7.2;B. CT Scan and Risk;51 5.3.7.3;C. Assumptions in Estimating Radiation Risks;52 5.3.7.4;D. Increased Radiosensitivity in Children;52 5.3.7.5;E. Nonfatal Cancers;52 5.3.7.6;F. Additional Confounders in Risk Estimation;52 5.3.7.7;G.

Radiation Doses from Medical Imaging and Uncertainty in Cancer Risks;52 5.3.8;II. What Is the Estimated Risk from a Single Chest X-Ray in a Child?;53 5.3.9;III. What Is the Estimated Risk from a Single Abdominal CT Scan in a Child?;53 5.3.9.1;A. The Changing Landscaping of Radiation Dose for Medical Imaging;54 5.3.9.2;B. Lowering CT Dose in Children;54 5.3.10;IV. Understanding Benefit Versus Risk of Imaging Tests in Well-Indicated Studies Versus Those that Have Very Low Probability ;54 5.3.10.1;A. The Example of CT in Children with Headache;54 5.3.11;V. How Should I Communicate Radiation Risk from Imaging to Parents and Patients?;55 5.3.12;VI. Special Situation: Increased Cancer Risk Following Therapeutic Medical Radiation;56 5.3.13;Take Home Tables and Figures;56 5.3.14;Future Research;56 5.3.15;References;60 5.4;4: The Economic and Regulatory Impact of Evidence-Based Medicine on Radiology;61 5.4.1;Issues;61 5.4.2;Key Points;61 5.4.3;I. What Political and Economic Forces Influence the United States Healthcare System?;62 5.4.4;II. What Is the Impetus Driving US Healthcare Reform Now?;63 5.4.5;III. How Are Rising Costs of Healthcare Affecting Governments and Individuals?;63 5.4.6;IV. Do Increased Health Expenditures Lead to Better Care?;65 5.4.7;V. How Does Supplier-Driven Demand Influence Imaging Utilization?;66 5.4.8;VI. What Can Be Learned from High-Value Systems?;66 5.4.9;VII. Cost-Control Strategies: Rationing Versus Redu EAN/ISBN : 9781441977779 Publisher(s): Springer, Berlin, Springer Science & Business Media Discussed keywords: Bildgebende Verfahren (Medizin), Evidenzbasierte Medizin (EBM) Format: ePub/PDF Author(s): Medina, L. Santiago - Blackmore, C. Craig - Applegate, Kimberly E.

[DOWNLOAD HERE](#)

Similar manuals: