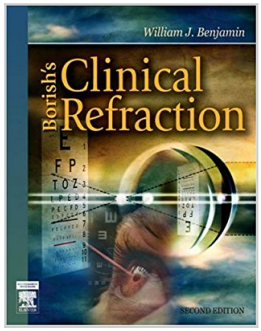

Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction)

By William J. Benjamin OD MS PhD

Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) By William J. Benjamin OD MS PhD

Now updated and expanded to cover the latest technologies, this full-color text on clinical refraction uses an easy-to-read format to give optometry students and practitioners all the important information they need. Also covers a wide range of other aspects of the eye exam, including anterior and posterior segment evaluations, contact lens, ocular pharmacology, and visual field analysis. Four new chapters cover wavefront-guided refraction, optical correction with refractive surgeries, prosthetic devices, and patients with ocular pathology.

- Offer precise, step-by-step how-to's for performing all of the most effective refractive techniques.
- Presents individualized refractive approaches for the full range of patients, including special patient populations.
- Contriubtors are internationally recognized, leading authorities in the field.

- New full-color design with full-color images throughout.
- Completely updated and expanded to include current technologies.
- A new chapter on Optical Correction with Refractive Surgeries, including keratoplasty, traditional refractive surgeries (e.g. LASIK and PRK), crystalline lens extraction with and without pseudophakia, the new presbyopic surgery, etc.
- A new chapter on Wavefront Guided Refraction provides information on the advantages and limitations the Hartmann-Shack Method for objective refraction plus aberrometry and the refraction and the use of in the correction of the eye with spectacles, contact lenses, and refractive surgery.
- A new chapter on Patients with Ocular Pathology reflects the most current knowledge of patients with ocular pathologies.
- Provides information on Optical Correction with Prosthetic Devices, including corneal onlays, stromal implants, phakic intraocular lenses, etc.
- Includes new chapters and/or discussions on such topics as: Aberrations of the Eye, Refractive Consequences of Eye Pathology, Diagnosis and Treatment of Dry Eye, Diagnosis of Pathology of the Anterior Segment, Diagnosis of Glaucoma, and Diagnosis of Pathology of the Posterior Segment.
- Visual Acuity chapter expanded to include the effect of refractive error on visual acuity and statistics on how much of a change in visual acuity is

significant.

- Objective Refraction, Corneal Topography, and Visual Field Analysis chapters include the addition of new electro-optical and computer techniques and equipment.
- Chapters on Multifocal Spectacle Lenses and Contact Lenses now cover newer progressive addition lenses and contact lenses that are now on the market.
- Electrodiagnosis chapter revised to take a more clinical approach.

Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction)

By William J. Benjamin OD MS PhD

Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) By William J. Benjamin OD MS PhD

Now updated and expanded to cover the latest technologies, this full-color text on clinical refraction uses an easy-to-read format to give optometry students and practitioners all the important information they need. Also covers a wide range of other aspects of the eye exam, including anterior and posterior segment evaluations, contact lens, ocular pharmacology, and visual field analysis. Four new chapters cover wavefront-guided refraction, optical correction with refractive surgeries, prosthetic devices, and patients with ocular pathology.

- Offer precise, step-by-step how-to's for performing all of the most effective refractive techniques.
- Presents individualized refractive approaches for the full range of patients, including special patient populations.
- Contriubtors are internationally recognized, leading authorities in the field.

- New full-color design with full-color images throughout.
- Completely updated and expanded to include current technologies.
- A new chapter on Optical Correction with Refractive Surgeries, including keratoplasty, traditional refractive surgeries (e.g. LASIK and PRK), crystalline lens extraction with and without pseudophakia, the new presbyopic surgery, etc.
- A new chapter on Wavefront Guided Refraction provides information on the advantages and limitations the Hartmann-Shack Method for objective refraction plus aberrometry and the refraction and the use of in the correction of the eye with spectacles, contact lenses, and refractive surgery.
- A new chapter on Patients with Ocular Pathology reflects the most current knowledge of patients with ocular pathologies.
- Provides information on Optical Correction with Prosthetic Devices, including corneal onlays, stromal implants, phakic intraocular lenses, etc.
- Includes new chapters and/or discussions on such topics as: Aberrations of the Eye, Refractive Consequences of Eye Pathology, Diagnosis and Treatment of Dry Eye, Diagnosis of Pathology of the Anterior Segment, Diagnosis of Glaucoma, and Diagnosis of Pathology of the Posterior Segment.
- Visual Acuity chapter expanded to include the effect of refractive error on visual acuity and statistics on how much of a change in visual acuity is significant.
- Objective Refraction, Corneal Topography, and Visual Field Analysis chapters include the addition of new electro-optical and computer techniques and equipment.
- Chapters on Multifocal Spectacle Lenses and Contact Lenses now cover newer progressive addition lenses and contact lenses that are now on the market.
- Electrodiagnosis chapter revised to take a more clinical approach.

Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) By William J. Benjamin OD

MS PhD Bibliography

- Rank: #409903 in Books
- Brand: Brand: Butterworth-Heinemann
- Published on: 2006-10-27
- Original language: English
- Number of items: 1
- Dimensions: 2.28" h x 8.64" w x 11.20" l, 7.99 pounds
- Binding: Hardcover
- 1712 pages

Editorial Review

Review
BOOK REVIEW
William J. Benjamin, Editor, Irvin M. Borish, Consultant;
Borish's Clinical Refraction, second edition
Butterworth-Heinemann -Elsevier, 2006; hardbound, 1694pp, US$195, ISBN-13: 978–0–7506–7524–6
Barry Masters
Received: 1 April 2008 / Accepted: 2 April 2008

Visual acuity is taken for granted until it changes, and then it adversely affects our ability to function. It is a supreme tribute to the clinical skills and the plethora of optoelectronic instruments that are available to optometrists and ophthalmologists that they can determine the altered refraction that is required to restore normal visual acuity. Before the era of photorefractive surgery, before the era of contact lenses, there were glasses (that is, two pieces of glass that are polished in such a manner to achieve the required alteration in the light paths by the process of refraction), and they are mounted in a frame to be worn on the bridge of the nose and the ears and thus remain stationary with respect to the visual axes of the eyes. With eyeglasses, as compared to hand-held single lens magnifiers that were used for reading, the hands are free and the glasses remain stationary with respect to movements of the head and the body. In the history of inventions, eyeglasses provide an example of a simple idea that when properly implemented provides individuals with a great improvement in their quality of life. What is the origin of high quality spectacles?
In a thoroughly researched and beautifully illustrated new book, Renaissance Vision from Spectacles to Telescopes (Philadelphia, American Philosophical Society, 2007) Vincent Ilardi provides new evidence that 15th century Florence was the center for the production of high quality spectacles. While Venice during the same period also produced eyeglasses, the emphasis was on items such as mirrors, vessels and similar objects that resulted in higher profits. The glass industry in Florence existed from the early 13th century, and by the time of the middle of the 17th century it was producing high-quality glass that even Venice could not surpass.
We now jump from 15th century Florence to the present and introduce Borish's Clinical Refraction, Second Edition.

For this edition, William J. Benjamin served as the editor, Irvin M. Borish served as consultant, and 58 clinicianscientists contributed chapters. Both the editors and the contributors deserve acclaim for their scholarly and clearly written and superbly illustrated chapters that comprise this one-volume tome on the principles and the clinical practice of refraction and associated subjects such as color vision, contrast sensitivity, ocular motility, and visual fields. The extensive scope of this volume is indicated by additional chapters on infants, toddlers, and children; patients with amblyopia and strabismus; patients with anisometropia and aniseikonia; patients with high refractive error; patients with keratoconus and irregular astigmatism; the elderly; patients with low vision; and a final chapter on the refractive effects of ocular disease.

Borish's Clinical Refraction provides the reader with two varieties of information.

First, the clear explanation of the science related to the relevant topic; the anatomy, the physiology, the biochemistry, the neural pathways, the pharmacology, the optics, the materials and their optical and mechanical properties that comprise the lenses of glasses and contact lenses. Second, the art of the appropriate clinical practice that involves the physical examination of the eyes, clinical measurement of the optical properties of the visual system, measurements of the shape of the cornea, the aberrations of the visual system, and the logical approach to select and fit the appropriate glasses or contact lenses, or the procedures of various types of photorefractive surgery. The successful clinician needs to know both the basic science as well as the details of the procedures that are required for the diagnosis and management of refractive eye conditions, and the reference book provides the principles and the clinical procedures for the diagnosis and the management of refractive eye conditions. As expected, the bulk of the volume is devoted to a detailed, critical and comprehensive treatment of the following topics: the examination of the visual system, the various techniques to measure refraction, and the analysis and prescription of optical corrections.

The strengths of Borish's Clinical Refraction include the following: (1) a single volume book that is up-to-date, clearly written, well illustrated, and comprehensive, (2) the high quality black and white illustrations and the color illustrations and clinical photographs which provide graphical understanding to the text, (3) the well-designed and easily read and understandable tables which summarize, compare and contrast various parameters and procedures, (4) the full color clinical images which illustrate the pathology, clinical techniques, diagnostic readouts, diagnostic

instruments, and the optical principles, (5) the references which provide additional resources, and (6) a detailed index..

I now point out the utility for clinical practice and the detailed exposition of the basic principles that are found in each chapter of Borish's Clinical Refraction. I will proceed by pointing out the significant features of two chapters, in order to illustrate the basis of my evaluation of this book. Again, these examples serve as exemplars of the remaining chapters in the book.

I begin with the chapter on corneal topography. The shape of the anterior corneal surface is important for both the diagnosis and the management of many ocular conditions. Because about two-thirds of the refractive power of the eye is located at the air/tear film interface that is adjacent to the anterior surface of the cornea, it is important to be able to determine the shape of the cornea. If the cornea was a portion of a sphere, the task would be simplified; of course, the human cornea is not spherical, and that is only the beginning of the array of difficult problems that must be solved to design and calibrate an instrument that is capable of measuring the shape of the cornea. It is of note that both Helmholtz and Gullstrand independently worked on the problem of designing an instrument to measure the shape of the cornea. In modern times, the personal computer was used to calculate the shape of the cornea from a target of concentric rings (Placido disk); the results depend on the assumptions and the limitations of the mathematical models and the details of the calculation algorithm. The important points of this chapter are the discussion of the accuracy and the assumptions that are implicit in the calculation of corneal shape. To emphasize these factors the authors have placed them in a summary box: assumptions and limitations inherent in standard keratometry. For example, in the section on keratometer principles we learn that the keratometer measures the radius of curvature of a small region of the central cornea. The value of this chapter is a critical discussion of the assumptions and the limitations for each type of instrument that is used to measure corneal shape. I stress this point, because so much of the commercial marketing literature either ignores or provides minimal discussion and evidence from peer-reviewed publications that provide experimental data in support of the accuracy and the precision of a particular instrument. More modern instruments use proprietary reconstruction algorithms to model the corneal surface. The Klein algorithm is presented as one solution to the problems that are inherent in the older two-dimensional algorithms that

were used in reconstruction of the corneal shape.
The highlights of the chapter on corneal topography are the critical and detailed discussions of the comparison of the various corneal-surface descriptors, the comparison of the various videokeratoscopic instruments, the role of alignment, focus and reference planes, the discussion of color maps and their interpretation, as well as the critical and important subject of the analysis of accuracy and repeatability. Corneal topographical mapping is an important measurement system, and the data is presented in various color-coded forms: surface elevation maps, dioptric corneal maps, axial curvature maps, instantaneous curvature maps and ray-tracing refractive power maps. The authors present a critical evaluation of the various approaches for the display of topographical maps.
Wavefront refraction is the subject of another chapter that illustrates the exemplary features of Borish's Clinical Refraction. Today it is possible to measure optical aberrations over the entire pupil that are smaller than the wavelength of the incident light. The primary purpose of wavefront aberrometers is to accurately measure the aberrations of the eye. This is particularly important for mitigating the unwanted effects of spherical aberrations and coma that occur with refractive surgery. The goal of developing wavefront refraction is to improve the precision and the accuracy of both autorefractors and subjective refraction for visible light. The wavefront distortion is measured by the root-mean-squared wavefront error, and an eye is considered to be emmetropic if the total distortion over the pupil is minimal. The most common form of wavefront sensor is the Shack-Hartmann wavefront sensor. This wavefront sensor measures the slope or the spatial derivative of the wavefront; the integration of the wavefront slope yields the shape of the aberrated wavefront. The authors provide excellent discussions of methods to interpret the wavefront aberration function, how to classify the aberrations in terms of Zernike polynomials, and a comprehensive analysis of various metrics to access the optical quality of the eye. Finally, they describe the challenge of using wavefront measurement to prescribe the most appropriate vision aids.
In summary, Borish's Clinical Refraction is a modern, comprehensive, didactic approach to the principles and the clinical practice of refraction. While the text emphasizes the examination of the eye and the visual system, the methods of refraction, and the prescription of various types of spectacles and contact lens, there is also a detailed analysis and discussion of the field of refractive surgery and prosthetic devices. The book is a useful textbook on the

principles and the practice of refraction; the measurement and analysis of refractive errors and the detailed steps to treat, manage, and prescribe spectacles or contact lenses that serve to ameliorate the refractive errors and thus improve the quality of the patient's lives. The second edition has many new features; for example, an expanded chapter on patients with keratoconus and irregular astigmatism. An important section is devoted to the special ocular conditions that are of importance to the clinician. In conclusion, I highly recommend this very practical book for its honest, critical, comprehensive, and scholarly approach.

BOOK REVIEW-2

Borish's Clinical
Refraction, 2nd Edition
William J Benjamin
St Louis: Butterworth Heinemann
Elsevier, 2006
1,694 pages, RPR $315.00

Reviewed by ALEXANDRA JAWORSKI,
Department of Optometry and Vision Sciences, The University of Melbourne
E-mail: aaja@unimelb.edu.au

I am compelled to agree with the editor that, like many books, this second edition is better than the first. Beginning with the basics, this book is smaller and has coloured pictures. More seriously, the extensive array of diagrams better illustrates clinical procedures, underlying principles and clinical findings and generally makes the text more inviting. Despite the reduced thickness, the new edition covers previously addressed topics pertaining to refractive error more comprehensively and in light of recent advances in research and clinical optometry.

You receive 'a set of steak knives' with this edition. Despite the title, more than refraction is addressed. The book is organised into five sections: principles, adjunct examinations, the refraction, analysis and prescription of optical corrections, and special conditions. Research and clinical optometrists will recognise many of the 45 authors who provide the breadth of knowledge across the 37 chapters.

Factors associated with refractive error, relationships between ocular components,

refractive changes in children and adulthood, progression of ametropias and control strategies are well reviewed. These last two discussions provide a sizeable source of information to benefit patient management and serve as a good foundation for patient advice regarding progression of ametropia. However, like most books, recent research findings are occasionally absent.

Methods of objective and subjective refraction at distance and near, including corneal topography, are particularly well discussed. The inclusion of wavefront refraction is in keeping with advances in aberrometry that are aimed at improving vision beyond the dioptre when correcting ametropia and which perhaps will be incorporated in more routine clinical examinations in the not too distant future.

Various forms of refractive correction are reviewed, including the optical and clinical considerations of single vision lenses, multifocal lenses, contact lenses (including silicon hydrogels, options for presbyopes and RGPs) and surgical strategies. Although corrective techniques and approaches are constantly changing, I found the review of surgical procedures informative. General procedures, side effects, complications, contraindications and clinical features of marginal and good candidates are covered; topics that are important when a patient presents with an interest in refractive surgery or we think we have identified a suitable candidate.

Chapters in the ‘adjunction examinations’ section cover additional clinical procedures to evaluate a patient’s visual function, including visual field assessment, contrast sensitivity, colour vision and electrophysiology, in light of recent advances. Ocular examination techniques of the anterior and posterior segments are detailed and compare well with books that focus solely on general optometric procedures. These sections are particularly useful for third year to final year optometry students and clinical instructors.

Clear instructions on basic physical examination techniques are provided to identify systemic signs of conditions that have ocular manifestations, and aid our diagnostic power. Regardless of whether systemic evaluation is actively performed, the text and illustrations represent reminders of physical signs we may notice coincidently during the course of an ocular examination.
The final section addressing special conditions is a great concluding addition. It reiterates and integrates important issues and clinical techniques discussed in previous chapters, which are appropriate for examining particular patient populations, such as the elderly, children and patients with high refractive errors, low vision and keratoconus. The final chapter on the refractive effects of ocular disease provides a nice summary, encompassing both ocular and systemic conditions, to aid diagnosis and management of your patient, in light of their refractive error.
The editor advises that this book was specifically written for the qualified eyecare practitioner and advanced student. This pitch is achieved and as no other book covers the breadth and depth found here, this edition qualifies as a valuable reference in our bookshelves. Students just commencing their optometric training would find this book to be a worthwhile investment and a valuable resource for their subsequent student and working years. The theoretical basis of many clinical procedures is provided, in addition to clear instructions on technique, expected findings and factors that impact on these tests. The theoretical basis serves students and practitioners well, enabling both to appreciate the rationale and application of alternative clinical tests and management.

About the Author

William J. Benjamin, OD, MS, PhD, Professor of Optometry and Physiological Optics, Director of Clinical Research and Senior Scientist, Vision Science Research Center, University of Alabama at Birmingham, School of Optometry, Birmingham, AL

Users Review

From reader reviews:

Winston Nakashima:

This Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) book is not ordinary book, you have after that it the world is in your hands. The benefit you will get by reading this book is definitely information inside this e-book incredible fresh, you will get data which is getting deeper you read a lot of information you will get. This specific Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) without we understand teach the one who examining it become critical in imagining and analyzing. Don't be worry Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) can bring any time you are and not make your carrier space or bookshelves' become full because you can have it in the lovely laptop even phone. This Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) having excellent arrangement in word and also layout, so you will not feel uninterested in reading.

Florence Wiggins:

Now a day people who Living in the era just where everything reachable by connect to the internet and the resources included can be true or not need people to be aware of each data they get. How individuals to be smart in having any information nowadays? Of course the correct answer is reading a book. Studying a book can help folks out of this uncertainty Information specifically this Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) book because book offers you rich facts and knowledge. Of course the info in this book hundred per cent guarantees there is no doubt in it you probably know this.

Margaret Boyer:

Often the book Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) will bring someone to the new experience of reading the book. The author style to explain the idea is very unique. If you try to find new book to study, this book very suited to you. The book Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) is much recommended to you to see. You can also get the e-book from official web site, so you can quickly to read the book.

Allen Barnett:

Reading a e-book tends to be new life style in this era globalization. With studying you can get a lot of information that may give you benefit in your life. Having book everyone in this world can certainly share their idea. Textbooks can also inspire a lot of people. A lot of author can inspire their particular reader with their story or perhaps their experience. Not only the storyline that share in the ebooks. But also they write about advantage about something that you need case in point. How to get the good score toefl, or how to teach your young ones, there are many kinds of book which exist now. The authors on this planet always try to improve their skill in writing, they also doing some research before they write to the book. One of them is this Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction).

Read Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) By William J. Benjamin OD MS PhD for online ebook

Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) By William J. Benjamin OD MS PhD Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) By William J. Benjamin OD MS PhD books to read online.

Online Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) By William J. Benjamin OD MS PhD ebook PDF download

Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) By William J. Benjamin OD MS PhD Doc

Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) By William J. Benjamin OD MS PhD Mobipocket

Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) By William J. Benjamin OD MS PhD EPub

N9HUELC0XYP: Borish's Clinical Refraction, 2e (Benjamin, Borish's Clinical Refraction) By William J. Benjamin OD MS PhD