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6

Pediatric Ophthalmology and Strabismus

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BCSC
Basic and Clinical Science Course™

Protecting Sight. Empowering Lives.™

Published after collaborative review with the European Board of Ophthalmology subcommittee

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Cover image: From BCSC Section 5, *Neuro-Ophthalmology.* Fundus photograph showing an arteriovenous malformation (racemose angioma) of the retina in a patient with Wyburn-Mason syndrome. *(Courtesy of Mark J. Greenwald, MD.)*

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Basic and Clinical Science Course

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Contents

General Introduction

The Basic and Clinical Science Course (BCSC) is designed to meet the needs of residents and practitioners for a comprehensive yet concise curriculum of the field of ophthalmology. The BCSC has developed from its original brief outline format, which relied heavily on outside readings, to a more convenient and educationally useful self-contained text. The Academy updates and revises the course annually, with the goals of integrating the basic science and clinical practice of ophthalmology and of keeping ophthalmologists current with new developments in the various subspecialties.

The BCSC incorporates the effort and expertise of more than 90 ophthalmologists, organized into 13 Section faculties, working with Academy editorial staff. In addition, the course continues to benefit from many lasting contributions made by the faculties of previous editions. Members of the Academy Practicing Ophthalmologists Advisory Committee for Education, Committee on Aging, and Vision Rehabilitation Committee review every volume before major revisions. Members of the European Board of Ophthalmology, organized into Section faculties, also review each volume before major revisions, focusing primarily on differences between American and European ophthalmology practice.

Organization of the Course

The Basic and Clinical Science Course comprises 13 volumes, incorporating fundamental ophthalmic knowledge, subspecialty areas, and special topics:

1 Update on General Medicine
2 Fundamentals and Principles of Ophthalmology
3 Clinical Optics
4 Ophthalmic Pathology and Intraocular Tumors
5 Neuro-Ophthalmology
6 Pediatric Ophthalmology and Strabismus
7 Orbit, Eyelids, and Lacrimal System
8 External Disease and Cornea
9 Intraocular Inflammation and Uveitis
10 Glaucoma
11 Lens and Cataract
12 Retina and Vitreous
13 Refractive Surgery

In addition, a comprehensive Master Index allows the reader to easily locate subjects throughout the entire series.

References

Readers who wish to explore specific topics in greater detail may consult the references cited within each chapter and listed in the Basic Texts section at the back of the book.

These references are intended to be selective rather than exhaustive, chosen by the BCSC faculty as being important, current, and readily available to residents and practitioners.

Videos

This edition of Section 6, *Pediatric Ophthalmology and Strabismus,* includes videos related to topics covered in the book (see the Related Videos section in Chapters 7, 11, and 14). The videos were selected by members of the BCSC faculty and are available to readers of the print and electronic versions of Section 6. Mobile-device users can scan the QR code below (a QR-code reader must already be installed on the device) to access the video content.

Study Questions and CME Credit

Each volume of the BCSC is designed as an independent study activity for ophthalmology residents and practitioners. The learning objectives for this volume are given on page 1. The text, illustrations, and references provide the information necessary to achieve the objectives; the study questions allow readers to test their understanding of the material and their mastery of the objectives. Physicians who wish to claim CME credit for this educational activity may do so by following the instructions given at the end of the book.

Conclusion

The Basic and Clinical Science Course has expanded greatly over the years, with the addition of much new text, numerous illustrations, and video content. Recent editions have sought to place greater emphasis on clinical applicability while maintaining a solid foundation in basic science. As with any educational program, it reflects the experience of its authors. As its faculties change and medicine progresses, new viewpoints emerge on controversial subjects and techniques. Not all alternate approaches can be included in this series; as with any educational endeavor, the learner should seek additional sources, including Academy Preferred Practice Pattern Guidelines.

The BCSC faculty and staff continually strive to improve the educational usefulness of the course; you, the reader, can contribute to this ongoing process. If you have any suggestions or questions about the series, please do not hesitate to contact the faculty or the editors.

The authors, editors, and reviewers hope that your study of the BCSC will be of lasting value and that each Section will serve as a practical resource for quality patient care.

Objectives

Upon completion of BCSC Section 6, *Pediatric Ophthalmology and Strabismus,* the reader should be able to

- describe evaluation techniques for young children that provide the maximum information gain with the least trauma and frustration
- describe the anatomy and physiology of the extraocular muscles
- explain the classification and diagnosis of amblyopia, as well as the treatment options
- describe the commonly used tests for the diagnosis and measurement of strabismus
- classify the various esodeviations and exodeviations, and describe the management of each type
- identify pattern and vertical strabismus, as well as special forms of strabismus, and formulate a treatment plan for each type
- describe the features of the various forms of nystagmus and understand their significance
- list the possible complications of strabismus surgery, and describe guidelines to minimize them
- design an approach to the diagnosis of decreased vision in children, and list resources available to these patients
- differentiate among various causes of congenital and acquired ocular infections in children, and formulate a logical plan for the diagnosis and management of each type
- list the most common lacrimal drainage system abnormalities seen in children and formulate a management plan
- list the most common diseases and malformations of the cornea, anterior segment, and iris seen in children

- describe the diagnostic findings and treatment options for childhood glaucoma
- identify common types of childhood cataract and other lens disorders
- construct a diagnostic and management plan for childhood cataracts
- identify appropriate diagnostic tests for pediatric uveitis
- differentiate among various vitreoretinal, optic disc, and metabolic diseases and disorders found in children
- list the characteristics of ocular tumors and phakomatoses seen in children
- describe the characteristic findings of accidental and nonaccidental ocular trauma in childhood