

Learning Objectives, Critical Concepts and Study References

The Fellowship process is designed to help you expand your knowledge base in all aspects of behavioral vision care. You will be challenged in your written responses by your mentor and members of the review board. Advanced competency is expected in the following principles and procedures for each clinical condition. The first phase of your fellowship process will help you obtain and articulate a deeper understanding of these principles. It is not required or expected that you will complete the process in one cycle. The examination phase will further explore your understanding of these clinical issues.

1. Principles and Procedures – You should be able to define and explain:

- a. The unique qualities, and scientific and clinical principles of each clinical condition.
- b. The epidemiological and demographic characteristics of each clinical condition.
- c. The characteristic history, and signs and symptoms for each clinical condition.
- d. How to assess each clinical condition, including specific test protocols and their interpretation.
- e. The differential diagnosis for each clinical condition.
- f. The specific treatment and management of each clinical condition including:
 - 1) Prognostic indicators
 - 2) Treatment options
 - 3) Duration and frequency of treatment
 - 4) Treatment philosophy and goals
 - 5) Specific lens treatment and therapy procedures including rationale for that which is prescribed whether lenses or vision therapy
 - 6) Ergonomics and visual hygiene
 - 7) Outcomes to determine successful completion of treatment
 - 8) Frequency of follow-up care and patient instructions
 - 9) Referral criteria (medical, neurological, educational, etc.)

2. Clinical Conditions

- a. Strabismus and Amblyopia
 - 1) Amblyopia
 - a) Anisometropic / Isometropic Refractive Amblyopia
 - b) Strabismic Amblyopia
 - c) Hysterical Amblyopia
 - d) Form Deprivation Amblyopia
 - e) Differential diagnoses in childhood visual acuity loss
 - 2) Strabismus
 - a) Esotropia
 - i. Infantile

- ii. Accommodative
 - iii. Acquired
 - iv. Microtropia
 - v. Sensory
 - vi. Convergence Excess
 - vii. Divergence Insufficiency
 - viii. Non-accommodative
 - ix. Sensory Adaptations
 - b) Exotropia
 - i. Divergence Excess
 - ii. Convergence Insufficiency
 - iii. Basic Exotropia
 - iv. Congenital
 - v. Sensory
 - c) Vertical Deviations
 - d) Noncomitant Deviations (AV Syndrome; Duane's Retraction Syndrome; Brown's Syndrome; III, IV, VI nerve palsy, etc.)
 - e) Differential diagnoses in strabismus
- 3) Special clinical considerations
- a) Anomalous Correspondence
 - b) Eccentric Fixation
 - c) Suppression
 - d) Motor Ranges
 - e) Stereopsis
 - f) Horror fusionalis/intractable diplopia
- b. Growth and Development
- 1) Visual
 - a) Infant vision (normal and abnormal ranges of refractive status in infant, toddler, and preschool populations)
 - b) Acuity / Binocularity / Stereopsis / Accommodation
 - c) Neurological / Cognitive / Behavioral
 - d) Developmental milestones
 - e) Piaget stages of development
- c. Perception and Visual Information Processing
- 1) Neurological / Psychological
 - a) Ambient / focal systems.
 - b) Visual perceptual midline
 - c) Parvocellular / Magnocellular function
 - d) Perceptual Style (central, peripheral)
 - e) Impact of colored filters
 - f) Attention

- 2) Intersensory and Sensorimotor Integration
 - a) Visual-auditory
 - b) Visual-vestibular
 - c) Visual-oral
 - d) Visual-motor
 - e) Visual-tactual

- 3) Performance indicators
 - a) Laterality and directionality
 - b) Visual requirements for academic success
 - c) Bilaterality
 - d) Gross and fine motor ability
 - e) Form perception/visual analysis
 - f) Spatial awareness
 - g) Visualization
 - h) Visual memory
 - i) Visual sequential memory
 - j) Form constancy
 - k) Visual speed and visual span
 - l) Visual sequencing

d. Refractive conditions and visual skills

- 1) Refractive Conditions
 - a) Developmental influence on refraction & emmetropization
 - b) Aniseikonia
 - c) Myopia
 - d) Astigmatism
 - e) Hyperopia
- 2) Ocular Motor Function
 - a) Eye movements and reading
 - b) Pursuit dysfunctions
 - c) Nystagmus
 - d) Saccadic Dysfunctions
- 3) Accommodation
 - a) Role in myopia development
 - b) Role in computer-related asthenopia
- 4) Fusion in Non-Strabismic Conditions
 - a) Fixation disparity
 - b) Motor fusion
 - c) Sensory fusion

e. Special clinical conditions

- 1) Acquired brain injury (traumatic brain injury {TBI} and stroke)

- 2) Developmental disabilities (Down Syndrome, Developmental delay, etc.)
- 3) Visually induced balance disorders
- 4) Motor disabilities (Cerebral Palsy, ataxia, etc.)
- 5) Behavioral disorders
- 6) Autism spectrum disorders
- 7) ADD / ADHD
- 8) Dyslexia and specific reading disabilities
- 9) Learning Disabilities
- 10) Computer Vision Syndrome

3. Vision Therapy Concepts to Consider

- a. Peripheral awareness: focal / ambient roles
- b. Significant findings which are good or poor prognostic indicators of vision therapy and lens application
- c. Development, rehabilitation, prevention, enhancement
- d. Behavioral lens application
- e. Yoked prism rationale for treatment and application
- f. The relationship between the visual and vestibular systems
- g. SILO/SOLI
- h. Visual stress and its impact on the visual system
- i. Role of posture in vision development, comfort and performance
- j. Disruptive therapy: Discuss this type of therapy and how it can be used as a clinical therapeutic tool.
- k. Relationship of speech-auditory to vision
- l. How might television, reading, video gaming, restricted movement, computer work, nutrition, etc. impact vision?
- m. Perceptual Style, e.g., spatial/temporal, central/peripheral

Study References

The primary resource for writing your responses to the OBQ's and your cases should be your clinical experience. Your writing should not reflect your expertise in quoting back passages from various references but instead your understanding and how you practice. However, you and your mentor may feel that you may benefit from consulting of some of the following reference materials to broaden and deepen your foundation in particular areas. Once you have consulted those mentor-suggested materials and discussed the relevance of that material with your mentor, you may find your approach to your written work taking on a different and/or more solid approach. The following list of references is only meant as a *potential* guide for the material you may find helpful in building your knowledge base.

Study materials can be downloaded at the following link on the COVD website:

<https://www.covd.org/page/Fellowship>

Amblyopia/Strabismus

Amblyopia in Problems in Optometry Vol. 3 (2)

Rutstein RP (ed.) Lippincott 1991

Amblyopia – Basic and Clinical Aspects

Ciuffreda K, Levi D, Selenow A. Butterworth – Heinemann 1991

Applied Concepts in Vision Therapy

Press LJ. OEPF 2008

Binocular Anomalies: Theory, Testing & Therapy (5th ed.)

Griffin JR, Borsting EJ. Butterworth-Heinemann 2011 (2 volumes)

Binocular Vision and Ocular Motility: Theory and Management of Strabismus (4th ed.)

von Noorden GK. CV Mosby Co. 1990

Clinical Management of Strabismus

Calaroso E. and Rouse M. Butterworth – Heinemann 1993

Clinical Uses of Prism: A Spectrum of Applications

Cotter S. Mosby 1995

Effective Strabismus Therapy

Greenwald I. OEPF 1979

Strabismus and Amblyopia.

Getz D. OEPF 1990

Pediatrics and Child Development

Clinical Pediatric Optometry

Press LJ and Moore BD. Butterworth – Heinemann 1993

Visual Development and Diagnosis and Treatment of the Pediatric Patient

Duckman R. Lippincott 2006

Developmental Disabilities in Infancy and Childhood. 2nd ed.

Capate AJ and Accardo PJ. Paul Brooks Publishing, 1996

Eye Care for Infants and Young Children

Moore, BD. Butterworths 1997

How to Develop Your Child's Intelligence

Getman G. OEPF

Pediatric Optometry in Problems in Optometry Vol. 2. (3)
Scheiman, M editor. J.B. Lippincott 1990

Pediatric Optometry
Jennings BJ, editor. in *Optometry Clinics*, Appleton & Lange 1996

Principles and Practice of Pediatric Optometry
Rosenbloom AA and Morgan MW. Lippincott 1990

Smart in Everything Except School
Getman GN. OEPF 1992

Your Child's Vision: A Parents Guide to Seeing Growing and Developing
Kavner RS. Simon and Schuster 1985 and OEPF

Vision- Its Development in Infant and Child
Gesell A. Ilg Fl, and Bullis GE. Hafner Publishing Co. 1970

What and how does this child see?
Hyvärinen L and Jacob N. Good Lite and OEPF

Visual Perception, Visual Information Processing, and Learning

Applied Concepts in Vision Therapy
Press LJ. OEPF 2008

Developmental & Perceptual Assessment of Learning – Disabled Children: Theoretical Concepts and Diagnostic Testing
Groffman S, Solan HA. OEPF 1994
Optometric Management of Learning Related Vision Problems 2nd ed.
Scheiman MM and Rouse MW. Mosby 2006

Optometric Management of Nearpoint Vision Disorders
Birnbaum MH. OEPF 2008 (reprinted)

Optometric Management of Reading Dysfunctions
Griffin JR, Chirstenson GN, Wesson MD, Erickson GB. Butterworth – Heinemann 1997

Tests and Measurements for Behavioral Optometrists
Solan HA and Suchoff IB. OEPF 1991

*Thinking Goes to School: Piaget's Theory in Practice **
Furth H and Wachs H. Oxford Univ. Press 1975 and OEPF

Vision and Reading
Garzia R. Mosby 1996.

Visual Imagery: An Optometric Approach
Forrest E. OEPF 1981.

Visual Processes in Reading and Reading Disabilities
Willows and Kruk, Lawrence Erlbaum Associates 1992

Refractive Conditions and Visual Skills (Accommodation, Vergence, Saccades, Pursuits)

Accommodation, Nearwork, and Myopia
Ong E and Ciuffreda KJ. OEPF 1997

Applied Concepts in Vision Therapy
Press LJ. OEPF 2008

Binocular Anomalies: Theory, Testing & Therapy (5th ed.)
Griffin JR, Borsting EJ. Butterworth-Heinemann 2011 (2 volumes)

*Clinical Management of Binocular Vision: Heterophoric, Accommodative, and Eye Movement Disorders** 3rd ed
Scheiman M. Wick B. Lippincott 2008

Clinical Uses of Prism: A Spectrum of Applications
Cotter S. Mosby 1995

Eye Movement Basics for the Clinician
Ciuffreda KJ and Tannen B. Mosby 1995

Optometric Management of Nearpoint Vision Disorders
Birnbaum MH. OEPF 2008 (reprint)

Sports Vision: Vision Care for the Enhancement of Sports Performance
Erickson G. Elsevier 2007

Sport Vision in Optometry Clinics Vol. 3 (1)
Classe J. Appleton & Lange 1993

Stress and Vision
Forrest E. OEPF 1988

Vergence Eye Movements: Basic and Clinical Aspects
Schor CM and Ciuffreda KJ. Butterworths 1983

Lens Power in Action
Kraskin R OEPPF 2003

Special Clinical Conditions

(Acquired Brain Injury, Developmental Disabilities such as Down's Syndrome, Autism Spectrum Disorders, Motor Disabilities etc.)

Applied Concepts in Vision Therapy (Chapter 12)
Press LJ. OEPPF 2008

Neuro-Visual Processing Rehabilitation: An Interdisciplinary Approach
Padula, MW. OEPPF 2012

Visual Diagnosis and Care of the Patient with Special Needs
Taub MB, Bartuccio M, Maino DM Lippincott Williams & Williams 2012

Visual and Vestibular Consequences of Acquired Brain Injury
Suchoff IB, Ciuffreda KJ, Kapoor N (eds) OEPPF 2001

Clinical Management of Binocular Vision 3rd Edition (Chapter 20)
Scheiman M & Wick VB Lippincott Williams & Wilkins 2008

Envisioning a Bright Future – Interventions that work for children and adults with Autism Spectrum Disorders
Lemer PS (ed) OEPPF 2008

Seeing Through New Eyes: changing lives of children with Autism, Asperger's syndrome and other developmental disabilities through vision therapy
Kaplan M. Jessica Kingsley Publishing 2006

Vision Rehabilitation- Multidisciplinary Care of the Patient Following Brain Injury
Suter PS, Harvey Lisa H (eds) CRC Press 2012

Other /Miscellaneous References

Bibliography of Near Lenses and Vision Training Research

OEPF 1998

(This is a softbound text that lists over 1500 references in 64 categories related to behavioral vision care.)

Optometric Clinical Practice Guidelines

Various authors, all are published by the American Optometric Association

- ❖ Care of the Patient with Accommodative and Vergence Dysfunction
- ❖ Care of the Patient with Amblyopia
- ❖ Care of the Patient with Strabismus: Esotropia and Exotropia
- ❖ Pediatric Eye and Vision Examination
- ❖ Care of the Patient with Learning Related Vision Problems

Sources for Study References

American Optometric Association

Items: Optometric Clinical Practice Guidelines

www.aoa.org

<http://www.aoa.org/optometrists/tools-and-resources/clinical-practice-guidelines>

Bernell/U.S.O 1-800-348-2225

Items: Textbooks

andrews1@midwest.net

Optometric Extension Program Foundation (OEPF) 1-949-250-8070 or 1-800-824-8070

Items: Textbooks and other reprints

<http://www.oepf.org/>