



Pediatrics/Binocular Vision/Vision Therapy CAP Assessment Syllabus Form II – September 2023

SECTION 1: REFERENCE-BASED QUESTIONS (questions 1-13)

These questions are based on the references listed below, which emphasize new information relevant to optometry within the areas of pediatrics, binocular vision and vision therapy.

See page 2 for learning objectives for each topic area.

Topic: Effects of digital devices on binocular vision (questions 1-4)

Maharjan U, Rijal S, Jnawali A, Sitaula S, Bhattarai S, et al. (2022) Binocular vision findings in normally-sighted school aged children who used digital devices. PLOS ONE 17(4): e0266068.

<https://doi.org/10.1371/journal.pone.0266068>

Topic: Management of pediatric nystagmus (questions 5-9)

Rutner D., Sequential and Multi-Modal Optometric Management of Pediatric Nystagmus. Optometry and Contact Lenses. 2023. <https://www.ocl-online.de/en/sequ-multi-mod-opto-manage-pedia-nystagmus>

Topic: Natural course of intermittent exotropia (questions 10-13)

Pediatric Eye Disease Investigator Group; Writing Committee, Mohny BG, et al. Three-Year Observation of Children 3 to 10 Years of Age with Untreated Intermittent Exotropia. *Ophthalmology*. 2019;126(9):1249-1260.

[Three-year Observation of Children Age 3 to 10 Years Old with Untreated Intermittent Exotropia - PMC \(nih.gov\)](https://pubmed.ncbi.nlm.nih.gov/31111111/)

SECTION 2: FUNDAMENTAL KNOWLEDGE QUESTIONS (questions 14-25)

These questions are considered “fundamental knowledge” within the specific areas of pediatrics, binocular vision, and vision therapy listed below. This is information that has not changed substantially in the past 5-10 years, and with which all optometrists should be familiar or be able to access quickly.

The following outline is provided as a general guide for this section.

- A. Treatment and management options for anisometropia
- B. Treatment and management options for refractive and non-refractive amblyopia
- C. Assessment, differential diagnosis, treatment and management for accommodative disorders (AI, AE, infacility, spasm)
- D. Assessment, differential diagnosis, treatment and management for binocular vision disorders (CI, CE, DI, DE, pseudo-CI)
- E. Assessment, differential diagnosis, treatment and management for oculo-motor anomalies (saccades, pursuits, nystagmus)
- F. Assessment for visual perception disorders (common tests and when to use)
- G. Non-surgical treatment and management of strabismus

The following references are recommended as a review of general concepts, but are not required.

Care of the Patient with Accommodative and Vergence Dysfunction, AOA Clinical Practice Guidelines, revised 2010
<https://www.aoa.org/AOA/Documents/Practice%20Management/Clinical%20Guidelines/Consensus-based%20guidelines/Care%20of%20Patient%20with%20Accommodative%20and%20Vergence%20Dysfunction.pdf>

Comprehensive Pediatric Eye and Vision Examination, AOA Evidence-Based Clinical Practice Guideline, 2017
<https://www.aoa.org/AOA/Documents/Practice%20Management/Clinical%20Guidelines/EBO%20Guidelines/Comprehensive%20Pediatric%20Eye%20and%20Vision%20Exam.pdf>



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Bodack, M., Jenewein, E. New thinking on binocular vision problems. *Review of Optometry*, Jan 15, 2020.
<https://www.reviewofoptometry.com/article/binocular-vision-problems>

Learning objectives

The following learning objectives are provided as a guide to aid in navigating through the references and preparing for the reference-based section of the assessment.

Reference 1: Maharjan U, Rijal S, Jnawali A, Sitaula S, Bhattarai S, et al. (2022) Binocular vision findings in normally-sighted school aged children who used digital devices. *PLOS ONE* 17(4): e0266068.
<https://doi.org/10.1371/journal.pone.0266068>

The learner will be able to:

- Discuss the factors related to digital devices that increase demand on the binocular system
- Define “computer vision syndrome” and list common symptoms
- Explain the overall design of the study referenced in this article
- Identify the major results of the study, including which test results were significantly affected in digital device users, which test results were not significantly affected, and how the non-user, low user, and high user groups differed
- Discuss the significance of the results with respect to digital device use in children

Reference 2: Rutner D., Sequential and Multi-Modal Optometric Management of Pediatric Nystagmus. *Optometry and Contact Lenses*. 2023. <https://www.ocl-online.de/en/sequ-multi-mod-opto-manage-pedia-nystagmus>

The learner will be able to:

- Identify the causes and frequency of pediatric nystagmus and time of onset
- Discuss the need for intervention in cases of pediatric nystagmus
- Explain why abnormal head postures are often seen with pediatric nystagmus and how that affects the prognosis
- List the three types of interventions for nystagmus and identify the pros and cons of each type
- Discuss the multi-modal approach to optometric management of nystagmus and the importance of proceeding in a stepwise fashion
- Discuss why early intervention with optimal spectacle correction is important
- Discuss how prismatic correction can be helpful in managing nystagmus
- Explain why yoked prism is preferred over BO prism to manage nystagmus



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- Describe the proper placement of yoked prism in cases of nystagmus
- Explain the benefits of CLs over spectacles in the management of nystagmus
- List the types of biofeedback used with nystagmus and give examples of each
- Discuss the goals of vision therapy for patients with nystagmus and the type of activities that can be used
- Discuss when and why to refer patients with nystagmus to other providers

Reference 3: Pediatric Eye Disease Investigator Group; Writing Committee, Mohny BG, et al. Three-Year Observation of Children 3 to 10 Years of Age with Untreated Intermittent Exotropia. *Ophthalmology*. 2019;126(9):1249-1260. [Three-year Observation of Children Age 3 to 10 Years Old with Untreated Intermittent Exotropia - PMC \(nih.gov\)](#)

The learner will be able to:

- List the prevalence of intermittent exotropia and factors that affect its frequency in individuals
- Explain the methodology of the study described in this article, including how subjects were included or excluded, the observation period, and the primary outcome measure
- Discuss the major results of the study
 - The frequency of progression to constant XT and/or loss of stereoacuity
 - The findings which showed statistical improvement over the observation period
 - The findings that remained stable over the observation period
 - The rate of deterioration over the course of the study
- Discuss the conclusions that can be drawn from the study on the natural course of IXT and the impact on patient care/management