Complete Summary

GUIDELINE TITLE

Care of the patient with accommodative and vergence dysfunction.

BIBLIOGRAPHIC SOURCE(S)

American Optometric Association. Care of the patient with accommodative and vergence dysfunction. 2nd ed. St. Louis (MO): American Optometric Association; 1998. 89 p. (Optometric clinical practice guideline; no. 18). [160 references]

GUIDELINE STATUS

This is the current release of the guideline.

According to the guideline developer, this guideline has been reviewed on a biannual basis and is considered to be current. This review process involves updated literature searches of electronic databases and expert panel review of new evidence that has emerged since the original publication date.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Accommodative or vergence dysfunction

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Optometry

INTENDED USERS

Health Plans
Optometrists

GUIDELINE OBJECTIVE(S)

- To identify patients at risk for developing accommodative or vergence dysfunction
- To accurately diagnose accommodative and vergence anomalies
- To improve the quality of care rendered to patients with accommodative or vergence dysfunction
- To minimize the adverse effects of accommodative or vergence dysfunction and enhance the quality of life of patients having these disorders
- To inform and educate other health care practitioners, including primary care physicians, teachers, parents, and patients about the visual complications of accommodative or vergence dysfunction and the availability of treatment.

TARGET POPULATION

Patients of all ages with accommodative and vergence dysfunction

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. Patient History
2. Ocular Examination
    - Visual Acuity
    - Refraction
    - Ocular Motility and Alignment
    - Near Point of Convergence
    - Near Fusional Vergence Amplitudes
    - Relative Accommodation Measurements
    - Accommodative Amplitude and Facility
    - Stereopsis
    - Ocular Health Assessment and Systemic Health Screening
3. Supplemental Tests
    - Accommodative Convergence/Accommodation Ratio
    - Fixation Disparity/Associated Phoria
    - Distance Fusional Vergence Amplitudes
    - Vergence Facility
    - Accommodative Lag
4. Assessment
    - Graphical Analysis
    - Zones of Comfort
    - Comparison to Expected Values

- Fixation Disparity and Vergence Adaptation
- Comparison of Methods of Analysis

Treatment

1. Optical Correction
2. Vision Therapy
3. Lens and Prism Therapy
4. Medical (Pharmaceutical) Treatment
5. Surgery

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed literature searches using the National Library of Medicine's Medline database and the VisionNet database.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The Reference Guide for Clinicians was reviewed by the American Optometric Association (AOA) Clinical Guidelines Coordinating Committee and approved by the AOA Board of Trustees.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Diagnosis of Accommodative and Vergence Dysfunction

The evaluation of a patient with accommodative and vergence dysfunction may include, but is not limited to, the following areas. The examination components described are not intended to be all inclusive. Professional judgment and the individual patient's symptoms and findings have a significant impact on the nature, extent, and course of the services provided. The potential components of the diagnostic evaluation for accommodative and vergence dysfunction include the following areas:

A. Patient history
B. Ocular examination
C. Visual acuity
D. Refraction
E. Ocular motility and alignment
F. Near point of convergence
G. Near fusional vergence amplitudes
H. Relative accommodation measurements
I. Accommodative amplitude and facility
J. Stereopsis
K. Ocular health assessment and systemic health screening
L. Supplemental tests
    1. AC/A ratio
    2. Fixation disparity/associated phoria
    3. Distance fusional vergence amplitudes

4. Vergence facility
5. Accommodative lag

Management of Accommodative and Vergence Dysfunction

Management of the patient with an accommodative or vergence dysfunction is based on such interpretation and analysis of the examination results.

The general goals for treating accommodative and/or vergence dysfunction are:

- To assist the patient to function efficiently in school performance, at work, and/or in athletic activities
- To relieve ocular, physical, and psychological symptoms associated with these disorders.

The frequency and composition of evaluation and management visits for accommodative or vergence dysfunction is summarized in the table, below.

Frequency and Composition of Evaluation and Management Visits for Accommodative or Vergence Dysfunction

Dysfunction	Number of Evaluation Visits	Treatment Options	Prognosis	Number of Follow-Up Visits	Management Plan*
Convergence insufficiency (CI)	1	Vision therapy (VT); prism	Excellent	15 to 20	Provide in-office VT with supplemental home VT; use prisms if patient is not able to participate in VT; educate patient
Divergence excess (DE)	2	VT; prism; minus lenses; surgery	Good	30	Provide active VT; use passive VT including occlusion, base-in prism, and minus lenses for non communicative patient; surgery if VT is not successful or the deviation is too large; educate

					patient
Basic exophoria	1	Prism; VT	Good	30	Treat near problems like CI; treat distance problems like DE; educate patient
Convergence excess	1	Plus lenses; VT; prism	Excellent	15 to 25	Prescribe plus lens addition at near; provide VT for residual symptoms; increase plus acceptance; use prism for the nonresponsive patient; educate patient
Divergence insufficiency	1 to 2	Vision therapy; prism	Fair	15 to 25	Differentiate functional DI from acquired DI in children; refer patient for MRI if neurological; treat with VT or prismatic correct at distance; educate patient
Basic esophoria	1	Prism; VT	Good	20	Eliminate deviation by correcting hyperopia; prescribe prismatic correction; provide VT for residual asthenopia and to eliminate prism; educate patient
Fusional vergence dysfunction	1	VT	Excellent	15 to 20	Provide VT balanced between convergence and divergence; treat abnormal accommodative system; educate

					patient
Vertical phorias	1 to 2	Prism; VT	Good	20	Correct vertical deviation with prism; if vergence dysfunction, proceed with horizontal vergence VT; educate patient
Accommodative insufficiency	1	VT; plus lenses	Excellent	15 to 20	Provide VT to build accommodative amplitudes and accommodative facility; prescribe plus lenses at near; educate patient
Ill-sustained accommodation	1	VT; plus lenses	Excellent	10	Treat with VT or plus lenses; educate patient
Accommodative infacility	1	Plus lenses; VT	Excellent	10	Improve speed of accommodation with plus lenses initially; proceed with vision therapy; educate patient
Paralysis of accommodations	1	Optical correction	Poor	---	Determine underlying cause; correct with progressive lens when necessary; educate patient
Spasm of accommodation	1 to 2	Plus lenses; VT; cycloplegic drug	Fair	10	Begin with plus lenses and VT; if VT fails, use cycloplegic agent temporarily; educate patient

Note: VT = vision therapy
MRI = magnetic resonance imaging
* See original guideline document for other management strategies

CLINICAL ALGORITHM(S)

An algorithm is provided for Optometric Management of the Patient with Accommodative Dysfunction.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Most accommodative and vergence dysfunction responds to the appropriate use of lenses, prisms, or vision therapy. It is medically necessary for the optometrist to diagnose the condition accurately, discuss the diagnosis and the risks and potential benefits of existing treatment options with the patient, and initiate treatment when appropriate. Treatment, including lenses, prisms and vision therapy, is not age restricted. Vision therapy can be given at any age. In some cases, the best treatment includes a combination of lenses, prisms, and/or vision therapy. Proper treatment usually results in rapid, cost-effective, and permanent improvement in visual skills.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

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Clinicians should not rely on this Clinical Guideline alone for patient care and management. Please refer to the references and other sources listed in the original guideline for a more detailed analysis and discussion of research and patient care information.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Clinical Algorithm
Patient Resources

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1998 (reviewed 2006)

GUIDELINE DEVELOPER(S)

American Optometric Association - Professional Association

SOURCE(S) OF FUNDING

Funding was provided by the Vision Service Plan (Rancho Cordova, California) and its subsidiary Altair Eyewear (Rancho Cordova, California)

GUIDELINE COMMITTEE

American Optometric Association Consensus Panel on Care of the Patient with Accommodative or Vergence Dysfunction

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American Optometric Association Web site.

Print copies: Available from the American Optometric Association, 243 N. Lindbergh Blvd., St. Louis, MO 63141-7881

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

The following are available:

- Answers to your questions about eye coordination. St. Louis, MO: American Optometric Association. (Patient information pamphet).
- Answers to your questions about vision therapy. St. Louis, MO: American Optometric Association. (Patient information pamphet).

Print copies: Available from the American Optometric Association, 243 N. Lindbergh Blvd., St. Louis, MO 63141-7881; Web site, www.aoanet.org.

authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on December 1, 1999. The information was verified by the guideline developer on January 31, 2000.

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