# Complete Summary

## GUIDELINE TITLE

Care of the patient with strabismus: Esotropia and exotropia.

## BIBLIOGRAPHIC SOURCE(S)

American Optometric Association. Care of the patient with strabismus: esotropia and exotropia. 2nd ed. St. Louis (MO): American Optometric Association; 1996. 69 p. (Optometric clinical practice guideline; no. 16). [115 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 as of 2004. 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)

Strabismus:

- Esotropia
  - Infantile Esotropia
  - Acquired Esotropia
  - Secondary Esotropia
  - Microesotropia
- Exotropia

- Infantile Exotropia
- Acquired Exotropia
- Secondary Exotropia
- Microexotropia

**GUIDELINE CATEGORY**

Diagnosis
Evaluation
Management

**CLINICAL SPECIALTY**

Optometry

**INTENDED USERS**

Health Plans
Optometrists

**GUIDELINE OBJECTIVE(S)**

- To identify patients at risk of developing strabismus
- To accurately diagnose strabismus
- To improve the quality of care rendered to patients with strabismus
- To minimize the adverse effects of strabismus and enhance the patient's quality of life
- To preserve the gains obtained through treatment
- To inform and educate other health care practitioners including primary care physicians, teachers, parents, and patients about the visual complications of strabismus and the availability of treatment.

**TARGET POPULATION**

Children and adults with suspected or diagnosed strabismus.

**INTERVENTIONS AND PRACTICES CONSIDERED**

A. Diagnosis
    1. Patient History
    2. Ocular Examination
        - Visual Acuity
        - Ocular Motor Deviation
        - Monocular Fixation
        - Extraocular Muscle Function
        - Sensorimotor Fusion
        - Accommodation
        - Refraction
        - Ocular Health Assessment and Systemic Health Screening
B. Treatment
    1. Optical Correction

2. Added Lens Power
3. Prisms
4. Active Vision Therapy
5. Pharmacological Agents
6. Extraocular Muscle Surgery
7. Chemodenervation

C. Patient Education

### 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 Strabismus*

The examination of strabismic patients generally includes all areas of the evaluation of a comprehensive adult or pediatric eye and vision examination. The evaluation of sensory, motor, refractive, and accommodative functions requires further, in-depth examination. Additional office visits may be required to complete the examination process, especially with younger children.

The evaluation of a patient with strabismus may include, but is not limited to, the following components. Professional judgment and individual patient symptoms and findings may have significant impact on the nature, extent, and course of the services provided.

1. Patient History
2. Ocular Examination
    a. Visual Acuity
    b. Ocular Motor Deviation
    c. Monocular Fixation
    d. Extraocular Muscle Function
    e. Sensorimotor Fusion
    f. Accommodation
    g. Refraction
    h. Ocular Health Assessment and Systemic Health Screening

*Management of Strabismus*

The extent to which an optometrist can provide treatment for strabismus may vary depending on the state's scope of practice laws and regulations and the individual optometrist's certification. Management of the patient with strabismus may require consultation with or referral to an ophthalmologist for those services outside the optometrist's scope of practice.

The management of the strabismic patient is based on the interpretation and analysis of the examination results and overall evaluation. The goals of treatment may include (1) obtaining normal visual acuity in each eye, (2) obtaining and/or improving fusion, (3) eliminating any associated sensory adaptations, and (4) obtaining a favorable functional appearance of the alignment of the eyes. The significance of normal ocular alignment for the development of a positive self-image and interpersonal eye contact cannot be overemphasized.

The indications for and specific types of treatment need to be individualized for each patient.

The treatment of strabismus may include any or all of the following procedures:

a. Optical Correction
b. Added Lens Power
c. Prisms
d. Active Vision Therapy
e. Pharmacological Agents
f. Extraocular Muscle Surgery
g. Chemodenervation

Patient Education

The prognosis, advantages, and disadvantages of the various modes of treatment should be discussed with the patient and/or the patient's parents and a plan developed based on this dialogue.

Prognosis and Follow-up

The purpose of the follow-up evaluation is to assess the patient's response to therapy and to alter or adjust treatment as needed.

The frequency and composition of evaluation and management visits for esotropia and exotropia are summarized in the following table:

**Frequency and Composition of Evaluation and Management Visits for Esotropia and Exotropia**

| Type of Patient | Number of Evaluation Visits | Treatment Options | Frequency of Follow-Up Visits* | Management Plan |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Accommodative esotropia | 1 to 3 | • Optical correction<br>• Vision therapy | • <6 years: every 4 to 6 mos<br>• 6 to 10 years: every 6 to 12 mos<br>• ≥11 years: every 12 mos | Provide refractive correction; treat any amblyopia; use added plus at near if needed to facilitate fusion; prescribe vision therapy to develop/enhance normal sensory and motor fusion. |
| Acute esotropia and exotropia | 1 to 3 | • Prisms<br>• Vision therapy<br>• Surgery | • Every 3 to 12 mos | Use prisms to eliminate diplopia and re-establish binocular vision; prescribe vision therapy; in stable deviations over 20 to 25 prism diopter (PD), consult with ophthalmologist regarding extraocular muscle surgery. |
| Consecutive esotropia and exotropia | 1 to 3 | • Optical correction<br>• Prisms<br>• Vision therapy<br>• Surgery | • Variable, depending on etiology | Provide refractive correction; prescribe prism and/or vision therapy to prevent amblyopia, eliminate diplopia, and establish normal sensory fusion, if applicable. |
| Infantile or early-acquired esotropia and exotropia | 1 to 3 | • Optical correction<br>• Prisms<br>• Vision therapy<br>• Surgery | • <2 years: every 3 mos<br>• 2 to 5 years: every 4 to 6 mos<br>• 6 to 10 | Provide refractive correction; treat any amblyopia; use prism to establish normal sensory fusion, |

| | | | | |
|---|---|---|---|---|
| | | | years: every 12 mos<br>• ≥11 years: every 12 to 24 mos | if applicable; consult with ophthalmologist regarding extraocular muscle surgery. |
| Intermittent exotropia | 1 to 3 | • Optical correction<br>• Prisms<br>• Vision therapy<br>• Surgery | • <5 years: every 4 to 6 mos<br>• 5 to 10 years: every 6 to 12 mos<br>• ≥11 years: every 12 to 24 mos | Provide refractive correction; use added minus lens power or base-in prism if needed to facilitate fusion; prescribe vision therapy; if deviation persists or increases, consult with ophthalmologist regarding extraocular muscle surgery. |
| Mechanical esotropia and exotropia | 1 to 3 | • Prisms<br>• Surgery | • Variable, depending on etiology | No therapy if strabismus is not present in the primary position of gaze and no diplopia. Consider prisms and/or surgery to treat head turn. |
| Microtropia | 1 to 3 | • Optical correction<br>• Prisms<br>• Vision therapy | • Every 3 to 12 mos | Provide refractive correction; treat any amblyopia; prescribe vision therapy and/or prism to establish bifoveal fusion, if applicable. |
| Sensory esotropia and exotropia | 1 to 3 | • Optical correction<br>• Prisms<br>• Vision | • Every 3 to 12 mos | Consult with ophthalmologist regarding treatment of any |

| | | |
|---|---|---|
| | therapy<br>• Surgery | underlying ophthalmic disease; provide refractive correction; treat any amblyopia; prescribe vision therapy and/or prism, if applicable; if deviation persists or increases, consult with ophthalmologist regarding extraocular muscle surgery. |

* Vision therapy would require additional visits.

### CLINICAL ALGORITHM(S)

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

## 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

The optometrist should emphasize the diagnosis, timely and appropriate management, and careful follow-up of patients with strabismus. Proper care can result in reduction of personal suffering for those involved as well as a substantial cost savings for the involved individuals and their families.

### POTENTIAL HARMS

- Pharmacological agents may be associated with local and systemic adverse effects.
- Extraocular muscle surgery may be associated with postoperative complications including diplopia, under-corrections, overcorrections, chronic

inflammation of the conjunctiva, excessive scar tissue, lost muscle(s), perforation of the globe, endophthalmitis, anterior segment ischemia, and corneal dellen.
- Chemodenervation may be associated with transient ptosis and vertical strabismus.

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

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

### 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

1995 (revised 1999; reviewed 2004)

## 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 the Care of the Patient with Strabismus

## 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 is available:

- Answers to your questions about strabismus. 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.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the 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.

### COPYRIGHT STATEMENT



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