SUMMARY BENCHMARKS FOR PREFERRED PRACTICE PATTERN® GUIDELINES

Introduction

These are summary benchmarks for the Academy's Preferred Practice Pattern® (PPP) guidelines. The Preferred Practice Pattern series of guidelines has been written on the basis of three principles.

- Each Preferred Practice Pattern should be clinically relevant and specific enough to provide useful information to practitioners.
- Each recommendation that is made should be given an explicit rating that shows its importance to the care process.
- Each recommendation should also be given an explicit rating that shows the strength of evidence that supports the recommendation and reflects the best evidence available.

Preferred Practice Patterns provide guidance for the pattern of practice, not for the care of a particular individual. While they should generally meet the needs of most patients, they cannot possibly best meet the needs of all patients. Adherence to these Preferred Practice Patterns will not ensure a successful outcome in every situation. These practice patterns should not be deemed inclusive of all proper methods of care or exclusive of other methods of care reasonably directed at obtaining the best results. It may be necessary to approach different patients' needs in different ways. The physician must make the ultimate judgment about the propriety of the care of a particular patient in light of all of the circumstances presented by that patient. The American Academy of Ophthalmology is available to assist members in resolving ethical dilemmas that arise in the course of ophthalmic practice.

The Preferred Practice Pattern® guidelines are not medical standards to be adhered to in all individual situations. The Academy specifically disclaims any and all liability for injury or other damages of any kind, from negligence or otherwise, for any and all claims that may arise out of the use of any recommendations or other information contained herein.

For each major disease condition, recommendations for the process of care, including the history, physical exam and ancillary tests, are summarized, along with major recommendations for the care management, follow-up, and education of the patient. For each PPP, a detailed literature search of PubMed and the Cochrane Library for articles in the English language is conducted. The results are reviewed by an expert panel and used to prepare the recommendations, which are then given a rating that shows the strength of evidence when sufficient evidence exists.

To rate individual studies, a scale based on the Scottish Intercollegiate Guideline Network (SIGN) is used. The definitions and levels of evidence to rate individual studies are as follows:

- I++: High-quality meta-analyses, systematic reviews of randomized controlled trials (RCTs), or RCTs with a very low risk of bias
- I+: Well-conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias
- I–: Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias
- II++: High-quality systematic reviews of case-control or cohort studies; high-quality case-control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal
- II+: Well-conducted case-control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal
- II–: Case-control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal
- III: Nonanalytic studies (e.g., case reports, case series)

Recommendations for care are formed based on the body of the evidence. The body of evidence quality ratings are defined by Grading of Recommendations Assessment, Development and Evaluation (GRADE) as follows:

- Good quality (GQ): Further research is very unlikely to change our confidence in the estimate of effect
- Moderate quality (MQ): Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate
- Insufficient quality (IQ): Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate; any estimate of effect is very uncertain

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Introduction *(continued)*

Key recommendations for care are defined by GRADE as follows:

- Strong recommendation (SR): Used when the desirable effects of an intervention clearly outweigh the undesirable effects or clearly do not
- Discretionary recommendation (DR): Used when the trade-offs are less certain—either because of low-quality evidence or because evidence suggests that desirable and undesirable effects are closely balanced

In PPPs prior to 2011, the panel rated recommendations according to its importance to the care process. This "importance to the care process" rating represents care that the panel thought would improve the quality of the patient's care in a meaningful way. The ratings of importance are divided into three levels.

- Level A, defined as most important
- Level B, defined as moderately important
- Level C, defined as relevant but not critical

The panel also rated each recommendation on the strength of evidence in the available literature to support the recommendation made. The "ratings of strength of evidence" also are divided into three levels.

- Level I includes evidence obtained from at least one properly conducted, well-designed randomized controlled trial. It could include meta-analyses of randomized controlled trials.
- Level II includes evidence obtained from the following:
  - Well-designed controlled trials without randomization
  - Well-designed cohort or case-control analytic studies, preferably from more than one center
  - Multiple-time series with or without the intervention
- Level III includes evidence obtained from one of the following:
  - Descriptive studies
  - Case reports
  - Reports of expert committees/organizations (e.g., PPP panel consensus with external peer review)

This former approach, however, will eventually be phased out as the AAO adopted the SIGN and GRADE rating and grading systems.

The PPPs are intended to serve as guides in patient care, with greatest emphasis on technical aspects. In applying this knowledge, it is essential to recognize that true medical excellence is achieved only when skills are applied in a such a manner that the patients' needs are the foremost consideration. The AAO is available to assist members in resolving ethical dilemmas that arise in the course of practice. (AAO Code of Ethics)

Adult Strabismus with a History of Childhood Strabismus*

Initial Exam History

- Ocular misalignment
- Strabismus angle and direction
- History of chronicity, review past clinical, surgical and imaging records

Initial Physical Exam

- Optical corrections and presence of ground-in or overlay prism, and impact current correction has on alignment
- Manifest refraction to identify barriers to binocular alignment or fusion
- Assessment of alignment by light reflex testing (e.g., Krimsky) to compare with cover test and identification of abnormal angle kappa
- Dry manifest and cycloplegic refraction, providing clues to original oculomotor disturbance
- Complete motility examination, including cover-uncover, alternate-cover testing, testing for binocular fusion and stereopsis.
- Inspection of the ocular surface for conjunctival scars (prior incision sites) and exposure of the thinned sclera behind anatomical insertions (evidence of likely muscle recession)
- Inspection of the interpalpebral fissures for evidence of prior vertical or horizontal rectus muscle resection (smaller interpalpebral fissure) or recession (larger interpalpebral fissure)
- Prism testing to simulate desired postsurgical alignment and range of overcorrection and undercorrection comfortably tolerated and unlikely to result in diplopia
- Assessment for ocular torsion by sensory testing or anatomic evidence of torsion noted during indirect ophthalmoscopy, particularly in patients with vertical strabismus
- Imaging (e.g., CT, MRI, orbital ultrasound) although nearly all cases can be managed without imaging

Management Plan

- Patient should be monitored/observed if symptoms are mild, occasional, and well tolerated or if patient is opposed to treatment
- Consider if alignment might be improved with changing optical correction (e.g., correction of hyperopia and appropriate bifocal or progressive lenses for adults approaching presbyopia)
- Reversal of monovision may be necessary and may resolve symptoms
- Prisms to address some forms of diplopia, and orthoptic exercises to address some forms of diplopia and asthenopia can be considered

Surgical and Postoperative Care

- Correction of childhood strabismus in adults is generally surgical but, because a broad range of conditions may be responsible, specifics of surgery will vary
- Surgery is often challenging because of pre-existing surgical scarring, uncertainty about extraocular muscle attributes and location, possible limited fusional skills
- Sequelae of previous surgery should be addressed to optimize postoperative alignment

Patient Education and Follow-up

- Patients should be informed about the disorder and management options, as well as the adaption to the new ocular alignment resulting from surgery
- Inform the patient's other health care providers about the diagnosis and treatment plan

* Please refer to the Adult Strabismus Preferred Practice Patterns for care process of other forms of adult strabismus