

PRIMARY OPEN-ANGLE GLAUCOMA 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 they rated in two ways.

The panel first rated each recommendation 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)

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)

Primary Open-Angle Glaucoma (Initial Evaluation)

Initial Exam History (Key elements)

- Ocular history ^[A:III]
- Systemic history ^[A:III]
- Family history ^[A:II]
- Review of pertinent records ^[A:III]
- Assessment of impact of visual function on daily living and activities ^[A:III]

Initial Physical Exam (Key elements)

- Visual acuity ^[A:III]
- Pupils ^[B:II]
- Slit-lamp biomicroscopy of anterior segment ^[A:III]
- Measurement of IOP ^[A:I]
- Central corneal thickness ^[A:II]
- Gonioscopy ^[A:III]
- Evaluation of optic nerve head and retinal nerve fiber layer with magnified stereoscopic visualization ^[A:III]
- Documentation of optic nerve head appearance by color stereophotography or computer-based image analysis ^[A:II]
- Evaluation of the fundus (through a dilated pupil whenever feasible) ^[A:III]
- Visual field evaluation, preferably by automated static threshold perimetry ^[A:III]

Management Plan for Patients in Whom Therapy is Indicated

- Set an initial target pressure of at least 25% lower than pretreatment IOP, assuming that the measured pretreatment pressure range contributed to optic nerve damage ^[A:I]
- Target pressure is an estimate; all treatment decisions must be individualized according to the needs of the patient ^[A:III]
- Medical therapy is presently the most common initial intervention to lower IOP; consider balance between side effects and effectiveness in choosing a regimen of maximal effectiveness and tolerance to achieve the desired IOP reduction for each patient ^[A:III]
- Assess the patient who is being treated with glaucoma medication for local ocular and systemic side effects and toxicity ^[A:III]
- Laser trabeculoplasty can be considered as initial therapy in selected patients ^[A:I]
- Filtering surgery can be considered in selected cases as initial therapy ^[A:I]

Surgery and Postoperative Care for Laser Trabeculoplasty Patients

- The ophthalmologist who performs surgery has the following responsibilities:
 - Obtain informed consent ^[A:III]
 - Ensure that the preoperative evaluation confirms the need for surgery ^[A:III]
 - At least one IOP check within 30 minutes to 2 hours of surgery ^[A:I]
 - Follow-up examination within 6 weeks of surgery or sooner if concern about IOP-related optic nerve damage ^[A:III]

Surgery and Postoperative Care for Incisional Glaucoma Surgery Patients

- The ophthalmologist who performs surgery has the following responsibilities:
 - Obtain informed consent ^[A:III]
 - Ensure that the preoperative evaluation accurately documents findings and indications for surgery ^[A:III]
 - Prescribe topical corticosteroids in the postoperative period ^[A:II]
 - Follow-up evaluation on the first postoperative day (12 to 36 hours after surgery) and at least once during the first 1 to 2 weeks ^[A:II]
 - In the absence of complications, perform additional postoperative visits during a 6-week period ^[A:III]
 - Schedule more frequent visits, as necessary, for patients with postoperative complications ^[A:III]
 - Additional treatments as necessary to maximize the chances for a successful long-term result ^[A:III]

Patient Education For Patients with Medical Therapy

- Discuss diagnosis, severity of the disease, prognosis and management plan, and likelihood of lifelong therapy ^[A:III]
- Educate about eyelid closure or nasolacrimal occlusion when applying topical medications to reduce systemic absorption ^[B:II]
- Encourage patients to alert their ophthalmologist to physical or emotional changes that occur when taking glaucoma medications ^[A:III]

Primary Open-Angle Glaucoma (Follow-up Evaluation)

Exam History

- Interval ocular history ^[A:III]
- Interval systemic medical history ^[B:III]
- Side effects of ocular medications ^[A:III]
- Frequency and time of last IOP-lowering medications, and review of use of medications ^[B:III]

Physical Exam

- Visual acuity ^[A:III]
- Slit-lamp biomicroscopy ^[A:III]
- Measurement of IOP ^[A:I]
- Evaluation of optic nerve head and visual fields (see table below) ^[A:III]
- Measurement of central corneal thickness should be repeated after any event that may alter it ^[A:II]

Management Plan For Patients On Medical Therapy

- At each exam, record dosage and frequency of use, discuss adherence to the therapeutic regimen and patient's response to recommendations for therapeutic alternatives or diagnostic procedures. ^[A:III]
- Perform gonioscopy if there is a suspicion of angle closure, anterior-chamber shallowing or anterior-chamber angle abnormalities or if there is an unexplained change in IOP. ^[A:III] Perform gonioscopy periodically (e.g., 1-5 years). ^[A:III]

- Reassess treatment regimen if target IOP is not achieved and benefits of a change in therapy outweigh the risk. ^[A:III]
- Adjust target pressure downward if optic disc or visual field change is progressive. ^[A:III]
- Within each of the recommended intervals, factors that determine frequency of evaluation include the severity of damage, the rate of progression, the extent to which the IOP exceeds the target pressure and the number and significance of other risk factors for damage to the optic nerve. ^[A:III]

Patient Education

- Educate about the disease process, rationale and goals of intervention, status of their condition, and relative benefits and risks of alternative interventions so that patients can participate meaningfully in developing an appropriate plan of action ^[A:III]
- Refer for or encourage patients with significant visual impairment or blindness to use appropriate vision rehabilitation and social services ^[A:III]

Follow-Up:

Recommended Guidelines for Follow-up Glaucoma Status Evaluations with Optic Nerve and Visual Field Assessment ^{[B:III]*}

Target IOP Achieved	Progression of Damage	Duration of Control (months)	Approximate Follow-up Interval (months)* *
Yes	No	≤6	6
Yes	No	>6	12
Yes	Yes	NA	1–2
No	Yes	NA	1–2
No	No	NA	3–6

IOP = intraocular pressure; NA = not applicable

*Evaluations consist of clinical examination of the patient, including optic nerve head assessment (with periodic color stereophotography or computerized imaging of the optic nerve and retinal nerve fiber layer structure) and visual field assessment.

**Patients with more advanced damage or greater lifetime risk from POAG may require more frequent evaluations. These intervals are the maximum recommended time between evaluations.