

## Care of the Adult Patient with Cataract



American Optometric Association

### A. DESCRIPTION AND CLASSIFICATION

Cataract, an opacification of the lens that leads to measurably decreased visual acuity and/or some functional disability as perceived by the patient, may occur as a result of aging or secondary to hereditary factors, trauma, inflammation, metabolic or nutritional disorders, or radiation.

#### 1. Classification and Grading of Cataract

Cataracts may be classified on the basis of their location within the three zones of the lens and may be graded by visual inspection and assignment of numerical values to indicate severity, as indicated in Table 1.

### B. RISK FACTORS

- Age
- Diabetes mellitus
- Nutrition (low levels of antioxidants)
- Certain drugs/medications
- Smoking
- Ultraviolet radiation (high UVB exposure)
- Alcohol

### C. COMMON SIGNS, SYMPTOMS, AND COMPLICATIONS

The hallmark symptoms of cataract are blurred vision and increased problems with glare. Other signs and symptoms may include, but are not limited to:

- Decreased vision under low contrast conditions
- Index myopia
- Decreased color perception
- Diplopia

Complications of untreated cataract include visual impairment and blindness.

### D. EARLY DETECTION AND PREVENTION

While the biological processes of cataract formation are becoming more clearly understood, there is still no clinically established treatment to prevent or slow the progression of cataract. Research on the prevention of cataract has centered on risk factors and control of diseases associated with cataracts. A simple low-cost and low-risk preventive strategy is to reduce exposure to sunlight, decrease or discontinue smoking, and increase antioxidant vitamin intake.

NOTE: This Quick Reference Guide should be used in conjunction with the Optometric Clinical Practice Guideline on Care of the Adult Patient with Cataract (Reviewed 2004). It provides summary information and is not intended to stand alone in assisting the clinician in making patient care decisions.

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## E. EVALUATION

The evaluation should include the elements of a comprehensive eye and vision examination with particular attention given to inspection of the lens of the eye:

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### 1. Patient History

- Onset of vision loss (acute or gradual)
- Vision problems under special conditions (e.g., low contrast, glare)
- Difficulty performing visual tasks (e.g., ambulation, driving, reading under dim and high illumination conditions, reading medicine labels, performing occupational and avocational activities)
- Ocular history (e.g., refractive history, previous eye disease, amblyopia, eye surgery, trauma)
- General health history (e.g., patient's current medications, allergies to antibiotics or anesthetics, special needs relevant to surgery).

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### 2. Ocular Examination

- Measurement of visual acuity under both low and high illumination
- Biomicroscopy with pupillary dilation
- Stereoscopic fundus examination with pupillary dilation
- Assessment of ocular motility and binocularity
- Visual fields screening by confrontation or formal perimetry, if indicated
- Evaluation of pupillary responses
- Refraction
- Measurement of intraocular pressure

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### 3. Supplemental Testing

Supplemental testing, that may be necessary to document the extent of functional disability, the presence of coexisting eye disease, and the potential for improvement, may include:

- Contrast sensitivity and/or glare testing
- Potential acuity testing
- Threshold visual fields or Amsler grid
- Specialized color vision testing
- Electrophysiology
- Corneal pachymetry
- B-Scan ultrasonography
- Tonography

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## F. MANAGEMENT

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### 1. Basis for Treatment

Treatment of the patient with cataract depends on the extent of the patient's visual disability:

#### Asymptomatic Cataract

No significant vision loss: Educate patient; schedule for periodic re-evaluation per Guideline

Significant vision loss: Educate patient; discuss nonsurgical and surgical options

#### Symptomatic Cataract

Mild to severe vision loss: Educate patient; discuss nonsurgical and surgical options

Surgery is indicated when the cataract formation has reduced visual acuity to the level that it interferes with the patient's lifestyle and everyday activities and when satisfactory functional vision cannot be obtained with spectacles, contact lenses, or other optical aids.

#### Indications for Surgery:

Patient complaints of decreased vision, monocular diplopia, or large refractive differences between the eyes

Snellen visual acuity worse than 20/40

#### Contraindications for Surgery:

Coexisting ocular conditions (e.g., active proliferative diabetic retinopathy, rubeosis iridis, neovascular glaucoma, microphthalmos, buphthalmos)

Preoperative conditions that may affect surgery (e.g., anterior uveitis, corneal guttata, diabetes mellitus, glaucoma, retinal detachment)

Lens-induced disease (e.g., uveitis, phacomorphic or phacolytic glaucoma)

Need to obtain a clear view of the retina in concomitant ocular disease (e.g., diabetic retinopathy)

Underlying systemic disease or coexisting medical condition

- ❑ Advantages and disadvantages of the available cataract extraction techniques
- ❑ Intraocular lens (IOL) options
- ❑ Qualifications of surgeon and setting for delivery of care
- ❑ Aspects of surgery (e.g., anesthesia, location and type of incision, medications, disposition)
- ❑ Continuing postoperative care

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## 2. Available Treatment Options

### **Nonsurgical Treatment:**

Prescribe spectacles or contact lenses

Employ other optical and nonoptical aids as needed to enhance visual abilities

Consider treating pharmaceutically, under certain circumstances, if no contraindications

Schedule for periodic re-evaluation per Guideline

### **Surgical Treatment:**

Consult with ophthalmic surgeon regarding preoperative evaluation and surgical technique

Schedule for postoperative evaluation per Guideline

Prescribe optical correction

Schedule long-term followup

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## 3. Patient Education

Patients should be informed about the findings of the eye examination and how a cataract might affect performance of visual tasks and visually-guided activities. Nonsurgical and surgical options for treatment and their potential benefits and limitations should be discussed.

Surgical candidates should be informed of:

- ❑ Risks (i.e., complications) involved with cataract surgery

#### 4. Prognosis and Followup

Cataract extraction with IOL implant leads to improved vision in the majority of patients and contributes to an improved quality of life and mental status.

Table 2 provides an overview of the general guidelines for followup of an uncomplicated clinical course following cataract surgery. Care of the patient with postoperative complications is specific to each complication (see Guideline). Postoperative complications that may arise following cataract surgery include:

<b><u>Early Emergent Complications</u></b>	<b><u>Early Less-Emergent Complications</u></b>	<b><u>Intermediate to Late Complications</u></b>
<input type="checkbox"/> Ocular hypertension	<input type="checkbox"/> Ptosis	<input type="checkbox"/> Ptosis
<input type="checkbox"/> Malignant glaucoma	<input type="checkbox"/> Diplopia	<input type="checkbox"/> Diplopia
<input type="checkbox"/> Wound leak with shallow or flat anterior chamber	<input type="checkbox"/> Wound leak with well-formed anterior chamber	<input type="checkbox"/> Ocular hypertension or glaucoma
<input type="checkbox"/> Endophthalmitis	<input type="checkbox"/> Acute corneal edema	<input type="checkbox"/> Epithelial downgrowth
<input type="checkbox"/> Iris prolapse or vitreous in the wound	<input type="checkbox"/> Hyphema	<input type="checkbox"/> Chronic corneal edema/ corneal decompensation
<input type="checkbox"/> IOL dislocation	<input type="checkbox"/> Anterior uveitis	<input type="checkbox"/> Late hyphema
<input type="checkbox"/> Retinal break and detachment	<input type="checkbox"/> IOL decentration/ pupillary capture	<input type="checkbox"/> Chronic anterior uveitis
	<input type="checkbox"/> Choroidal detachment	<input type="checkbox"/> Posterior capsular opacity
	<input type="checkbox"/> Anterior ischemic optic neuropathy	<input type="checkbox"/> Pseudophakic cystoid macular edema

**Table 1\***  
**Grading the Three Common Types of Cataracts\*\***

<b><u>Cataract Type</u></b>	<b><u>Grade 1</u></b>	<b><u>Grade 2</u></b>	<b><u>Grade 3</u></b>	<b><u>Grade 4</u></b>
<b>Nuclear</b>				
Yellowing and sclerosis of the lens nucleus	Mild	Moderate	Pronounced	Severe
<b>Cortical</b>				
Measured as aggregate percentage of the intrapupillary space occupied by the opacity	Obscures 10% of Intrapupillary space	Obscures 10%-50% of intrapupillary space	Obscures 50%-90% of intrapupillary space	Obscures more than 90% of intrapupillary space
<b>Posterior subcapsular</b>				
Measured as aggregate percentage of the posterior capsular area occupied by the opacity	Obscures 3% of the area of the posterior capsule	Obscures 30% of the area of the posterior capsule	Obscures 50% of the area of the posterior capsule	Obscures more than 50% of the area of the posterior capsule

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\* Adapted from Table 1 in the Optometric Clinical Practice Guideline on Care of the Adult Patient with Cataract.

\*\* Designation of cataract severity that falls between grade levels can be made by addition of a + sign (e.g., 1+, 2+). Grading of cataracts is usually done when the pupil is dilated.

**TABLE 2\***

**FREQUENCY AND COMPOSITION OF EVALUATION AND MANAGEMENT VISITS FOR AN UNCOMPLICATED CLINICAL COURSE FOLLOWING CATARACT SURGERY**

Postoperative Visits	History	Composition of Followup Evaluations				Dilated Fundus Exam****	Management Plan
		Visual Acuity Unaided and With Pinhole***	External and Slit Lamp Exam	Refraction	Tonometry		
#1 One Day	Yes	Yes	Yes	No	Yes	If indicated by symptoms of very poor vision or retinal disease	Administer topical antibiotic/steroid; Counsel patient
#2 7-14 days Usually 1 week	Yes	Yes	Yes	No	Yes	If indicated by signs or symptoms of retinal disease	Continue and/or taper medications; Counsel patient
#3 3-4 weeks	Yes	Yes	Yes	Yes	Yes	Yes++	Continue and/or taper medications; Counsel patient; Prescribe refractive correction
#4** 6-8 weeks	Yes	Yes	Yes+	Yes	Yes	Yes++	Discontinue medications if exam is normal; Counsel patient; Prescribe/modify refractive correction
#5** Subsequent visits 3-6 months	Yes	Aided visual acuity with pinhole	Yes	If vision is reduced	Yes	If indicated based on findings and symptoms	Reschedule for yearly evaluation or as needed

\* Adapted from Figure 2 in the Optometric Clinical Practice Guideline on Care of the Adult Patient with Cataract.

\*\* Optional visit: Some clinicians elect to schedule three postoperative visits, others schedule four prior to determining a final spectacle prescription.

\*\*\* Pinhole VA: Assess if visual acuity worse than 20/30 unaided.

\*\*\*\* Dilated fundus exam: Provided at least once during the postoperative period.

+ Consider need to cut sutures, if present, if high astigmatism is measured.

++ Check clarity of posterior capsule.

