DRAFT: Cataract – Treatment of Adults

External review survey link: https://surveymoh.health.gov.bc.ca/survey/external-review-questionnaire-cataract-treatment-adults

Scope

This guideline provides recommendations for primary care providers in the prevention, diagnosis, management and postoperative care of cataracts for adults (age 19 and older).

Key Recommendations

- The following are recommended to delay the onset of cataracts:¹,²
  - Smoking cessation
  - Reduced ultraviolet (UV)-B exposure (hats, sunglasses with UV-B protection)
  - Safety eyeglasses during high-risk activities at work or recreation to avoid eye trauma
- Patients who are long-term users of corticosteroids (by any route) should be informed of the increased risk of cataract formation.³
- Indications for cataract surgery are not limited to Snellen visual acuity alone and referral for cataract surgery consultation is indicated in the setting of other symptoms such as glare, monocular diplopia and other associated symptoms.
- It should be noted that cataract surgery may be indicated in other ocular diseases for reasons independent of vision rehabilitation.
- When a cataract lens is surgically removed, it is replaced with an intraocular lens (IOL). There are many types of IOL’s available. IOL technologies and choices continuously evolve as does MSP coverage of IOLs. Patients can be reassured that MSP covered monofocal lenses provide fully satisfactory visual correction in the majority of patients. Glasses may be required after surgery for near and/or distance vision. Non-MSP covered lenses may lessen dependency on glasses post surgery, but may not be appropriate for all patients due to individual suitability or side effects. IOL selection evolves out of a comprehensive discussion with the surgeon.
- Primary care practitioners should be aware of postoperative “red flags”. Post operative patients should be urgently assessed by their surgeon or an on-call ophthalmologist (within 24 hours) with increasing eye redness, pain or decrease in vision (see Table 4 for more details).

Definition

- A cataract is a progressive clouding of the lens in the eye that interferes with vision and the examiner’s view of the fundus.
- Most cataracts are related to aging. They can occur in one or both eyes.²
- Cataract types are defined by their specific location of opacity or clouding within the anatomical lens and include: nuclear, cortical, subcapsular (anterior and posterior), and mixed. The prevalence of different cataract types is multifactorial. The nuclear type is more common in the older population whereas the posterior subcapsular (PSC) type can manifest in a young patient due to trauma, radiation or steroid use.
- The management of cataracts is similar irrespective of the type.

Epidemiology

- Between 1996-2001, the prevalence of low vision and blindness in all ages in B.C. was reported as 21.46/10,000 with cataract as the most common cause (29.9 %).³
• In 2018/2019, 69,463 cataract surgeries were performed in B.C.
• The risk of cataract (especially cortical) is higher in women and increases with age.²

Risk factors

• The most common risk factors for cataracts includes: diabetes, long term use of topical, systemic, intravitreal, inhaled or oral corticosteroids and prior intraocular surgery.²

Table 1. Risk Factors Associated with Cataracts

<table>
<thead>
<tr>
<th>Ocular conditions</th>
<th>Non-ocular conditions</th>
</tr>
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<tbody>
<tr>
<td>Myopia²</td>
<td>UV-B light exposure²</td>
</tr>
<tr>
<td>Prior pars plana vitrectomy²</td>
<td>Ionizing radiation²</td>
</tr>
<tr>
<td>Ocular inflammation</td>
<td>Steroid use including topical, systemic, intravitreal, inhaled (chronic)</td>
</tr>
<tr>
<td>Chronic ocular disease</td>
<td>Smoking/Tobacco²</td>
</tr>
<tr>
<td>Ocular/orbit trauma²</td>
<td>Diabetes²</td>
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<tr>
<td></td>
<td>Family history²</td>
</tr>
<tr>
<td></td>
<td>Hypertension²</td>
</tr>
<tr>
<td></td>
<td>Hyperbaric oxygen</td>
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<tr>
<td></td>
<td>Social determinants of health⁴</td>
</tr>
</tbody>
</table>

Prevention

• There is an epidemiologic link between cataract development and smoking, steroid use, diabetes, and ultraviolet ray exposure. Patients who are subthreshold for surgery may benefit from lifestyle modification.¹
• The following are recommended to prevent cataract progression:¹:²
  o Smoking cessation
  o Reduced UV-B exposure (e.g. hats, sunglasses with UV-B protection)
  o Safety eyeglasses during high-risk activities at work or recreation to avoid eye trauma
• Patients who are long-term users of corticosteroids (by any route) should be informed of the increased risk of cataract formation.²
• Nutritional supplementation has not been shown to reduce the rate of cataract development.¹
• There are no approved topical treatments for cataract prevention in Canada.

Diagnostic Process

• There is insufficient evidence to recommend routine screening for impaired vision in asymptomatic adults.⁵,⁶
• As with many other conditions, social determinants of health are important⁴ and may lead to a late cataract diagnosis resulting in more complicated surgery and postoperative care.
• In a primary care setting recognition of risk factors and the use of screening questions (e.g. blur, glare, colour change, dimming, monocular diplopia), Snellen visual acuity chart and examination with an ophthalmoscope can suggest the diagnosis of cataracts. Symptoms of visual function and the patient’s perspective of visual function are important, even with good Snellen visual acuity. It is helpful for the primary care practitioner to have a high index of suspicion for visual causes of functional decline (e.g. falling, mood change, depression⁷, withdrawing from social activities, cessation of night driving). Patients may adapt to their visual impairment and may fail to notice functional decline that accompanies the progression of a typical cataract.²
• Further assessment by an eye care professional is indicated to confirm the diagnosis of cataract and rule out other causes of vision loss. Slit lamp examination is the gold standard for this purpose, but does not solely determine who may benefit from cataract surgery as this is a complex, multifactorial decision.
Non-surgical Management

- Currently, there are no pharmacological treatments known to eliminate existing cataracts or stop their progression.²
- The main nonsurgical alternative to cataract surgery is to optimize the patient’s refractive correction. In some cases, this may delay the patient’s need for surgery.
- Tinted lenses, increased illumination, and magnifiers are other temporizing measures to improve visual function.

Indication for Referral to Eye Care

- See Appendix 1 for patient care pathway.
- The decision to refer a patient to an eye care provider is based on decreased vision or visual symptoms.

Indications for Surgery

- The decision to recommend cataract surgery should not be made solely on the basis of Snellen visual acuity.² Functional impairment of vision and patient-centred decision making are the main drivers. Measurements of distance acuity, near vision, glare disability and contrast sensitivity, combined with patient goals and functional requirements, will all contribute to the decision to proceed with surgery.
- In the majority of cases, cataract surgery is performed on patients who have reported difficulties with their activities of daily living that are attributable to their lens opacity. Such difficulties may be situational, such as only occurring at night. Difficulties include:¹
  - Seeing fine details (reading, driving, watching television)
  - Problems with visual aberrations (glares, haloes, monocular diplopia, color change)
  - Problems with binocularity
- In some cases, patients may require expedited surgery to meet occupational visual acuity standards¹ (e.g. commercial drivers, pilots, marine pilots, railroad conductors, law enforcement).
- In some cases, due to the slow, progressive decline in vision associated with cataracts, patients may not be aware of their decrease in visual function¹ and may need deeper discussion with their eye care professional to review the possible implications to their driver’s licence and benefits of surgery.
- In rarer and select cases, it is ethical to offer cataract surgery if there is an expectation of functional improvement even if visual acuity cannot be ascertained preoperatively (e.g. cognitive impairment, intellectual disability, moderate dementia, aphasia).
- Although most of the time, as described above, removing the cataract and placing an intraocular implant lens is done to improve vision impaired by lens opacity, this is not the only reason for cataract surgery. Surgical need also arises when the lens itself is the source of serious problems. The goal of surgery in these scenarios is to improve or maintain the anatomic health of their eye.¹ In these instances, patients require an explanation from their ophthalmologist that the primary reason for surgery is not to improve vision and that failure to remove the lens could lead to other ocular health issues. Some of these reasons include:
  1) When the cataract causes inflammation or secondary glaucoma²
  2) When the lens is causing shallow anterior chambers with risk of angle closure and acute glaucoma
  3) When the cataract interferes with visualization and management of retinal diseases (e.g. diabetes, macular degeneration, tumors)
- Historically, functional monocular status was a relative contraindication to cataract surgery given procedural risks. With advancement of technology, there is now good evidence that delaying surgery until the cataract is very advanced may increase surgical risk and slow visual recovery (III, good quality, strong recommendation – see Methodology section).² Therefore, surgery in monocular patients should be carried out when the benefits outweigh the risks and should not be delayed solely due to monocular status.¹ In this circumstance, it should be
discussed with the patient that blindness is one of the rare risks of cataract surgery (III, good quality, strong recommendation – see Methodology section).

**Refractive lens surgery or ‘clear lens’ exchange**
- Occasionally the primary care practitioner may encounter patients undergoing refractive lens exchange in a non-visually significant cataract. Refractive lens exchange is essentially the same procedure as cataract surgery; however, the primary purpose is to reduce glasses dependence in people who do not yet need cataract surgery. The intraocular technique, postoperative care and complications are identical to cataract surgery, however, the surgery is not medically necessary and is not MSP covered.

**Benefits and Risks**

- **Prognosis:**
  - Up to 95% of patients have reported being satisfied with the results of their cataract surgery. Dissatisfied patients were more likely to be older and have an ocular comorbidity.
  - Cataracts cannot recur following cataract surgery.
  - When visual function is restored by cataract removal physical function, mental health, emotional well-being, safety and overall quality of life can be improved (see Table 2 below).

**Table 2. Potential Benefits of Cataract Surgery**

<table>
<thead>
<tr>
<th><strong>Improved visual function</strong></th>
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<tbody>
<tr>
<td>• Better optically corrected vision</td>
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<tr>
<td>• Increased ability to read or do near work</td>
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<tr>
<td>• Reduced glare</td>
</tr>
<tr>
<td>• Improved ability to function in dim levels of light</td>
</tr>
<tr>
<td>• Improved depth perception and binocular vision</td>
</tr>
<tr>
<td>• Improved color vision</td>
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<tr>
<td>• Improved peripheral vision</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Improved activities of daily living</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increased ability to perform self-care and continue independent living</td>
</tr>
<tr>
<td>• Increased ability to continue or resume an occupation</td>
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<tr>
<td>• Increased mobility (e.g. walking, driving)</td>
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<table>
<thead>
<tr>
<th><strong>Improved mental health and well-being</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Improved self-esteem and independence</td>
</tr>
<tr>
<td>• Improved injury avoidance</td>
</tr>
<tr>
<td>• Better social engagement</td>
</tr>
<tr>
<td>• Relief from fear of blindness</td>
</tr>
<tr>
<td>• Reduced fear of falling</td>
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</tbody>
</table>

- Cataract surgery is cost-effective for the first eye and even more so for the second eye, even in patients with low probability of vision improvement.
- Visual impairments such as poor depth perception and low contrast sensitivity are important risk factors for falls and hip fractures. First-eye cataract surgery has been shown to reduce the rate of falling and fracture by 34% over 1 year.
- Cataract surgery in at least one eye has been shown to reduce the rate of motor vehicle accidents by 53% compared with patients with cataracts who declined surgery. Drivers with visually significant cataracts are 2.5 times more likely to have an at-fault motor vehicle crash over a 5-year period compared with drivers without
The loss of vision in the elderly is associated with a decline in physical and mental function as well as a loss of independence in the activities of daily living.2

Risks:
Because cataract surgery is generally done with topical/local anaesthetic, general surgical risks, other than those directly related to the eye are minimal (see Table 3 below).

Table 3. Cataract Surgery Complications and Associated Symptoms

<table>
<thead>
<tr>
<th>Complication</th>
<th>Symptom</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common cataract surgery complications</strong></td>
<td></td>
</tr>
<tr>
<td>• Dry eye</td>
<td>• Foreign body sensation or ocular irritation</td>
</tr>
<tr>
<td></td>
<td>• Intermittent blurred vision</td>
</tr>
<tr>
<td>• Posterior capsular opacification (PCO) (up to 53%)², treatable with laser</td>
<td>• Decline in vision</td>
</tr>
<tr>
<td><strong>Infrequent cataract surgery complications (&lt; 9%²,8)</strong></td>
<td></td>
</tr>
<tr>
<td>• Persistent corneal edema (swelling) or corneal decompensation (clouding)</td>
<td>• Persistent blurred vision</td>
</tr>
<tr>
<td>• Cystoid macular edema (central retinal swelling producing blur)</td>
<td>• Persistent blurred vision</td>
</tr>
<tr>
<td>• Ptosis</td>
<td>• Drooping of eyelid</td>
</tr>
<tr>
<td><strong>Rare complications that can lead to permanent loss of vision (&lt; 1.1%)²</strong></td>
<td></td>
</tr>
<tr>
<td>• High intraocular pressure</td>
<td>• Decrease in vision, severe pain</td>
</tr>
<tr>
<td>• Intraocular bleeding</td>
<td>• Numerous floaters</td>
</tr>
<tr>
<td>• Toxic anterior segment syndrome</td>
<td>• Increasing redness and pain, declining vision</td>
</tr>
<tr>
<td>• Infectious endophthalmitis</td>
<td>• Increasing redness and pain, declining vision</td>
</tr>
<tr>
<td>• Retinal detachment</td>
<td>• Flashes, numerous floaters and visual field defects</td>
</tr>
<tr>
<td>• Intraocular lens dislocation</td>
<td>• Sudden drastic change in vision (painless)</td>
</tr>
</tbody>
</table>

Contraindications to Cataract Surgery

- Spectacle or other visual aids provide vision that meets the patient’s needs.¹,² However, an exception to this exists when the surgery is medically necessary for other reasons (please see Indications for Surgery above).
- Surgery is not expected to improve visual function, and no other indication for lens removal exists.¹,²
- The patient cannot safely undergo surgery because of coexisting medical or ocular conditions.¹,²
- Appropriate postoperative care cannot be arranged¹,²

Surgical Management

Referral to Ophthalmology
The patient’s medical history should be included in the referral as the following conditions may affect surgery. An exhaustive list is not included here but specific considerations impact the ease of delivering surgery:
- Allergies
- Medications
  - history of Flomax® (tamsulosin hydrochloride) use (increased risk of complicated surgery)
Musculoskeletal disorders e.g. tremor\(^1\), movement disorders, posturing challenges\(^1\) or spine diseases (can cause positional difficulty being supine for surgery)

- Obstructive sleep apnea and CPAP use (anesthetic considerations)
- Psychiatric concerns
  - Cognitive impairment/dementia\(^2\) (may necessitate a general anaesthetic)
  - Significant anxiety\(^1,2\) or mood disorders

### Preoperative assessment
- History and standardized ophthalmological physical exam
- Ancillary Tests
  - Specific to cataract surgery
  - For other ocular conditions

### Preoperative Surgical planning
- Logistics of peri-operative support system (e.g. transportation, medication purchase and cost, eye drop application, time off work)
- Logistics of shared care (e.g. urban/rural, surgeon/optometrist)
- Preoperative goals and postoperative expectations

### Lens selection
- At the time of writing this guideline, a non-toric monofocal lens is covered by MSP at no cost to the patient. Patients can be reassured that MSP covered monofocal lenses provide fully satisfactory visual correction in the majority of patients. Glasses may be required after surgery for near and/or distance vision. Lens choices and related testing continuously evolve with technological advances.
- Lens selection and refractive targets will be finalized with the patient by the surgical team.
- Lens selection depends on the patient’s desired goals, vision requirements and ocular exam findings as there are multiple postoperative refractive result options.\(^2\) The patient can choose to optimize distance, optimize near or attempt optimizing each (one eye distance, one eye near, also referred to as monovision). Recommendations are made taking patient’s previous refractive state and ocular exam findings into account. There are compromises to be made with each lens choice and the discussion is complex.

- Monofocal and multifocal lens choices:
  - A **monofocal** IOL aims to provide optimal clarity at only one working distance: near, mid-range or far. This choice will generally require glasses for other working distances that remain uncorrected after surgery.
  - A **multifocal** IOL provides clarity at multiple working distances. This choice aims to lessen dependence on glasses however, this lens can come with side effects (e.g. glare, halo, neuro adaptability) which can be more significant than a monofocal lens and should be discussed with the ophthalmologist.

- For some patients with pre-existing astigmatism, there is a **toric** additional feature that can be selected with either monofocal and multifocal IOLs:
  - A **toric** IOL aims to lessen dependence on glasses. This lens is only indicated if the patient has visually significant corneal astigmatism.

- Post operative refractive result options can be set-up in multiple ways:
  - Bilateral emmetropia (distance vision optimized, reading glasses dependency)
  - Bilateral myopia (distance glasses dependency, reading vision optimized)
  - Monovision (one eye optimized for distance, the other for near)
• Basic eye measurements are required for standard monofocal lenses (axial length).
  o Additional testing is needed for toric IOLs or multifocal IOLs. These IOLs may be referred to as “speciality lenses” or “premium lenses”. These IOLs are not always the better choice for the patient and in fact may not be indicated based on individual patient history, ocular health, and visual goals.
  o This additional testing may not be covered by MSP when using toric IOLs and multifocal IOLs.

\section*{Surgical Considerations}

• The predominant method of cataract surgery in the developed world is sutureless small-incision phacoemulsification with foldable IOL implantation. \cite{2}
• Cataract surgery is predominantly an ambulatory outpatient operative procedure. Routinely it is carried out with topical anaesthetic alone, sometimes supplemented by oral or intravenous sedation. Rarely is general anaesthesia required.
• Cataract surgery prioritization is provincially standardized by urgency.
• Significant decline in visual function while waiting may require reassessment by the ophthalmologist.

\section*{Cataract Surgery Combined with Other Ocular Surgery}

• When patients have other ocular diseases coexistent with their cataracts, there is a role for cataract surgery combined with other types of surgery. For example:
  o Patients with glaucoma and cataracts may sometimes have a glaucoma procedure combined with their cataract surgery.
  o Cataract surgery may be combined with corneal transplantation in patients with corneal disease.
  o Combined cataract surgery and vitrectomy can be used in cases where the cataract interferes with the surgical treatment of posterior segment pathology. \cite{1}

\section*{Postoperative Monitoring}

• Eye care providers typically follow patients for up to 6 weeks post operatively. Conventionally, patients are given instructions to contact the surgeon directly if they have decreased vision, increased pain or redness. However, since patients may contact their primary care practitioner in this time period, it is important to be aware of red flag symptoms.
• Connect a patient back urgently (within 24 hours) to either their surgeon or the on-call ophthalmologist if the patient complains of reduction in vision, increasing pain, progressive redness, increased floaters, photopsia, eyelid edema or any periocular swelling (see Table 4, red flag symptoms section). The most concerning postoperative issues include infectious endophthalmitis, Toxic Anterior Segment Syndrome (TASS) or retinal detachment. \cite{2}
  o TASS is a sterile postoperative inflammatory reaction caused by a non-infectious substance that enters the anterior segment, resulting in toxic damage to intraocular tissue. \cite{1}
  o If infectious endophthalmitis is suspected (acute intraocular infection), this requires emergency ophthalmology attention. Anterior chamber and/or vitreous fluid may be biopsied for evaluation of possible pathogens and the vitreous injected with antibiotics. \cite{2}
• Decline in vision weeks to decades after cataract surgery can occur due to posterior capsular opacity (PCO) (previously referred to as a ‘secondary cataract’) and merits reassessment because of a decline in acuity. This may present weeks to decades after cataract surgery. PCO can be treated by laser and visual acuity regained.
• Non-urgent concerns can be electively referred back to the ophthalmologist (e.g. PCO, dry eyes, eyelid ptosis).
Table 4. Postoperative Red Flags versus Expected Symptoms after Cataract Surgery

<table>
<thead>
<tr>
<th>Up to 24 hours</th>
<th>24 hours to 1 week</th>
<th>&gt;1 week – months</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Red flag symptoms</strong> (refer within 24 hours)</td>
<td>• Severe pain with or without redness</td>
<td>• Severe pain</td>
</tr>
<tr>
<td><strong>Expected symptoms</strong></td>
<td>• Decreased vision</td>
<td>• Improving vision</td>
</tr>
<tr>
<td></td>
<td>• Mild redness</td>
<td>• Mild redness</td>
</tr>
<tr>
<td></td>
<td>• Foreign body sensation</td>
<td>• Improving foreign body sensation</td>
</tr>
</tbody>
</table>

**Controversies in care**

- **‘Immediately sequential bilateral’ or ‘bilateral simultaneous’ cataract surgery**
  - While further research is needed in the Canadian context to support this paradigm\(^9\), the British Columbia pattern of practice is generally to limit this option and to limit to people who require general anesthesia and are at low risk of ocular complications during and after cataract surgery.\(^10\)

- **Femtosecond Laser-assisted Cataract Surgery**
  - A limited number of surgical centres offer this non-MSP covered option in BC. The femtosecond laser is used to assist with certain steps of cataract surgery. However, there is a paucity of high-quality evidence that it improves healing time, refractive outcome or complication rates.

**Methodology**

These guideline recommendations are tailored to support practice in British Columbia and are based on the ADAPTE Collaboration guideline adaption methodology.\(^11\) Clinical recommendations were developed based on the sourced guidelines (American Academy of Ophthalmology\(^2\), the Canadian Ophthalmological Society\(^1\) and National Institute for Health and Care Excellence\(^10\)), as well as expert clinical consensus where evidence was insufficient or unavailable. In situations where there is a lack of rigorous evidence, we provide best clinical opinion to support decision making and high-quality patient care. The source guidelines were chosen following an environmental scan of internationally available guidelines. Guidelines were chosen for adaptation following an evaluation using the Appraisal of Guidelines for Research and Evaluation II (AGREE II) tool.\(^12\) The guideline development process includes significant engagement and consultation with primary care providers, specialists and key stakeholders. For more information about Guidelines and Protocols Advisory Committee (GPAC) guideline development processes, refer to the GPAC handbook available at BCGuidelines.ca.

Where level and quality of evidence ratings are included in this guideline, they are based on those used by the American Academy of Ophthalmology.\(^2\)

**Resources**

- Healthlink BC: [www.healthlinkbc.ca](https://www.healthlinkbc.ca)
  - Cataracts: [https://www.healthlinkbc.ca/health-topics/hw36825#hw37110](https://www.healthlinkbc.ca/health-topics/hw36825#hw37110)
  - Cataracts: Should I have Surgery? [https://www.healthlinkbc.ca/health-topics/aa57339](https://www.healthlinkbc.ca/health-topics/aa57339)
Abbreviations

- CPAP – Continuous positive airway pressure
- IOL – Intraocular Lens
- PCO - Posterior capsular opacification
- PSC – Posterior subcapsular cataract
- TASS – Toxic Anterior Segment Syndrome
- UV – Ultraviolet

Appendices

Appendix 1: Overview of the Patient Pathway

Associated Documents

A Guide for Patients

References

This guideline is based on scientific evidence current as of the Effective Date. This guideline was developed by the Guidelines and Protocols Advisory Committee and adopted by the Medical Services Commission.

THE GUIDELINES AND PROTOCOLS ADVISORY COMMITTEE

The principles of the Guidelines and Protocols Advisory Committee are to:

- encourage appropriate responses to common medical situations
- recommend actions that are sufficient and efficient, neither excessive nor deficient
- permit exceptions when justified by clinical circumstances

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Disclaimer
The Clinical Practice Guidelines (the guidelines) have been developed by the Guidelines and Protocols Advisory Committee on behalf of the Medical Services Commission. The guidelines are intended to give an understanding of a clinical problem, and outline one or more preferred approaches to the investigation and management of the problem. The guidelines are not intended as a substitute for the advice or professional judgment of a health care professional, nor are they intended to be the only approach to the management of clinical problem. **We cannot respond to patients or patient advocates requesting advice on issues related to medical conditions. If you need medical advice, please contact a health care professional.**
Appendix 1: Overview of the Patient Pathway

**Patient with Suspected Cataracts**
Patient visits primary care practitioner or optometrist for assessment

**Provide the Patient with Information**
(see patient handout)
Primary care practitioner or optometrist provides information tailored to the patient's needs

**Referral for Cataract Assessment**
The decision to refer a patient to an eye care provider is based on patient/family members/caregivers' discussion of decreased vision or visual symptoms

**Pertinent information to include:**
An exhaustive list is not included here but specific considerations impact the ease of delivering surgery:
- Allergies
- Medications
  - History of Flomax® (tamsulosin hydrochloride) use (increased risk of complicated surgery)
  - Musculoskeletal disorders e.g. tremor, movement disorders, posture challenges or spine diseases (can cause positional difficulty being supine for surgery)
  - Obstructive sleep apnea and CPAP use (anesthetic considerations)
  - Psychiatric concerns
    - Cognitive impairment/dementia (may necessitate a general anesthetic)
    - Significant anxiety or mood disorders

**Confirmation of Cataract and Rule Out Other Ocular Conditions**

**Appointment(s) with Surgical Team**
- Which eye is being considered
- What cataract surgery involves, how long it takes and anesthetic requirements
- Benefits and possible risks
- Likely recovery time
- What support might be needed after surgery
- Likely long-term outcomes, including the possibility of glasses for some tasks
- Delay between eyes and prescription imbalance difficulties

**Lens Implant Selection:**
- Depends on detailed preoperative measurements and a complex discussion with the patient regarding the patient's desired goals, vision requirements and ocular exam findings. There are multiple lens choices, costs and compromises to be made with each lens choice.

**Cataract Surgery**
- **Anesthesia** - predominantly topical, occasionally periocular and sedation as needed, rarely general anesthesia
- **Surgical technique** – generally small-incision phacoemulsification with foldable intraocular lens (IOL) implantation
- **Intraocular lens implants** – soft foldable acrylic is standard of care
- **Perioperative topical medications** – commonly antibiotics, steroids, non-steroidal anti-inflammatories starting 1-2 days prior to surgery and continuing after surgery
- **Preventing and managing postoperative complications** – see Table 4 in the guideline

**Postoperative Assessment**

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**References:**
A Guide for Patients

The recommendation is:

- You should consider cataract surgery if your vision gives you problems with your daily activities or your doctor explains that you have an eye condition that may worsen without cataract surgery.

What is a Cataract?

- Normally, the lens of the human eye is clear. Cataract means the lens has become cloudy, which makes it harder to see. Most people get cataracts with age and have them in both eyes. One eye may be worse than the other. Some people with cataract get used to them and do not notice blur. The change in their eyesight may not bother them. Most people with cataract notice difficulty with normal activities (e.g. reading, night driving).

How do I Know if I Have a Cataract?

If you mention vision problems your doctor will examine your eyes. Sometimes additional eye tests are needed to provide your doctor with more details about your eye health.

Some common symptoms of cataract are:

- Blurry, filmy, foggy, cloudy, fuzzy, or hazy vision
- Problems with headlights being too bright at night
- Problems with glare in the sun
- Problems reading small print
- Trouble seeing in dim light
- Changes in the way you see colours
- Vision “doubled” by a shadow image

How is a Cataract Treated?

- Just because you have a cataract does not mean that you need it removed right away. A change in your glasses prescription or the use of extra light and a magnifier may help you see better and may be treatment enough. In fact, you may never reach the point of needing cataract surgery. Some people delay having surgery, but this may not be the best option.
- Cataract surgery involves two steps. The Surgeon removes the natural lens in small pieces through a very small incision. Then the Surgeon implants a clear plastic lens which remains there your whole life. Artificial lenses are now available in a variety of styles.

What Should I Know About Cataract Surgery?

- Cataract surgery is a daytime procedure with no overnight stay in hospital. You will not be put to sleep with a general anaesthetic. You will need someone to take you home after. You may need help afterwards with putting in your eye drops or driving to appointments. It takes a few weeks for an eye to heal after cataract surgery. Most people who have a cataract surgery recover with better vision and no issues. Serious problems are not common.

Can a Cataract Return?

- A cataract cannot return because all of the lens material has been removed. In some people, cloudiness may develop after surgery (sometimes weeks to years later). Your doctor can recommend a further treatment to correct it.

How Do I Decide Whether Surgery is Right for Me?

- The benefits of having cataract surgery are improved ability to carry out everyday activities at home and work, such as: driving, reading, travelling and socializing, and increased safety, self-confidence, and independence.
- Think about the ways your cataract has changed your ability to do the things you need to do at work and at home. Consider your desire to drive and the risk of losing your licence due to poor vision. Be sure to share with your doctor how your vision difficulties have affected your life.
- No surgery is zero-risk. Loss of vision is rare with modern cataract surgery. If you need cataract surgery in both eyes, there is usually a waiting period between the two surgeries. If your only ‘good eye’ needs surgery, you and your doctor should discuss carefully the benefits and risks of cataract surgery.
- One common complication includes dry eye.
- Sometimes weeks to years after surgery there can be clouding of the lens capsule that is fixable with a simple laser procedure that can often be done in the office (“posterior capsular opacification”).
- Less common complications (< 9%) are swelling or clouding of the cornea, central retinal swelling producing blur, and drooping eyelid.
- Rare complications (< 1%) include high pressure in the eye, bleeding inside the eye, infection or inflammation of the eye, retinal detachment and lens dislocation.
What are important symptoms to tell your doctor about compared with expected symptoms after cataract surgery?

<table>
<thead>
<tr>
<th>Call your doctor if:</th>
<th>Up to 24 hours</th>
<th>24 hours to 1 week</th>
<th>&gt;1 week - months</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Severe eye pain, nausea/vomiting, or severe headache</td>
<td>Severe pain</td>
<td>Rapid or significant decrease in vision</td>
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<tr>
<td>Expected symptoms</td>
<td>Blurry vision</td>
<td>Improving vision</td>
<td>Increased awareness of pre-existing floaters</td>
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<td></td>
<td>Mild redness</td>
<td>Mild redness</td>
<td>Stabilized vision by 6 weeks</td>
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<td>Foreign body sensation (feels like something is in your eye)</td>
<td>Improving foreign body sensation</td>
<td>Patients can have dry eye symptoms long term</td>
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<td></td>
<td></td>
<td>Decreased pain</td>
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