

iStent for Adults With Glaucoma: Recommendation

Final Recommendation

- Ontario Health, based on guidance from the Ontario Health Technology Advisory Committee, recommends publicly funding iStent in combination with cataract surgery for adults with mild to moderate glaucoma that cannot be well controlled with pressure-lowering medications

Rationale for the Recommendation

The Ontario Health Technology Advisory Committee has reviewed the findings of the health technology assessment¹ and public comments examining the use of the iStent device as a treatment for glaucoma.

Ontario Health Technology Advisory Committee members noted that, based on the evidence, when iStent is used in combination with cataract surgery it may be beneficial in lowering intraocular pressure (eye pressure) and reducing the number of eye-drop medications needed. However, there is uncertainty about the effectiveness of iStent when used alone (not in combination with cataract surgery) compared with treatments such as eye drops or filtration surgery. Committee members also noted there is uncertainty about the cost-effectiveness of iStent as a treatment for glaucoma.

In making their recommendation, the Ontario Health Technology Advisory Committee considered the lived experience of patients with glaucoma. Patients described the challenges of living with glaucoma and their experiences with treatment options such as eye drops, filtration surgery, and minimally invasive glaucoma surgery. The committee also reflected on the relevance of iStent to achieve equitable clinical outcomes for people who may experience financial or physical challenges of using eye drops. However, because there is uncertainty about the effectiveness of iStent when used alone (not in combination with cataract surgery) compared with eye drop medication or filtration surgery, the committee chose to not make an explicit recommendation in this case, recognizing iStent may be a reasonable treatment to achieve equitable clinical outcomes for some people. Health care providers and patients should familiarize themselves with the *Glaucoma: Care for Adults* Quality Standard.²

The committee supports that the Ontario Provincial Vision Task Force establish specific eligibility criteria and audit compliance with the criteria to ensure appropriate use of the iStent technology in Ontario.

Decision Determinants for iStent for Adults With Glaucoma

Decision Criteria	Subcriteria	Decision Determinants Considerations
Overall clinical benefit How likely is the health technology/intervention to result in high, moderate, or low overall benefit?	Effectiveness How effective is the health technology/intervention likely to be (taking into account any variability)?	Based on the health technology assessment, ¹ which included assessments of the clinical effectiveness from two health technology assessments, ^{3,4} there may be no difference in comparative clinical effectiveness of iStent compared with pharmacotherapy on IOP (GRADE: Very low), visual field (GRADE: Very low [CADTH] to low [INESSS]), visual acuity (GRADE: Very low [CADTH] to low [INESSS]), and safety (GRADE: Very low). We are uncertain about the comparative clinical effectiveness of iStent combined with cataract surgery versus other MIGS procedures combined with cataract surgery on IOP, number of medications, visual acuity, and safety (GRADE: Very low for all outcomes). We are also uncertain about the clinical effectiveness of iStent compared with filtration surgery on QOL, IOP, number of medications and visual acuity (GRADE: Very low for all outcomes). However, iStent combined with cataract surgery may improve IOP (GRADE: Low) and decrease the number of medications used, but not eliminate the need for medications (GRADE: Low), compared with cataract surgery alone.
	Safety How safe is the health technology/intervention likely to be?	Most adverse events were minor and there were similar rates across treatment groups.
	Burden of illness What is the likely size of the burden of illness pertaining to this health technology/intervention?	In Canada, approximately 400,000 people have glaucoma (2003) and 2.5 million people are living with cataracts (2015). ⁵ In Ontario, the volume of cataract surgeries in 2014 was 145,239. ⁵ Based on a previous budget impact analysis, ⁶ the number of adults with glaucoma in Ontario is estimated to be between 290,000 in 2019 and 323,000 in 2023.

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	<p>Need</p> <p>How large is the need for this health technology/intervention?</p>	<p>MIGS, including iStent, is a less invasive surgical approach that may fill a gap on the spectrum of treatments for glaucoma.</p>
<p>Patient preferences and values</p> <p>How likely is adoption of the health technology/intervention to be congruent with patient preferences and values and with ethical and legal standards</p>	<p>Patient preferences and values</p> <p>Do patients have specific preferences, values, or needs related to the health condition, health technology/intervention, or life impact that are relevant to this assessment? (Note: The preferences and values of family members and informal caregivers are to be considered as appropriate.)</p> <p>Autonomy, privacy, confidentiality, and/or other relevant ethical principles as applicable</p> <p>Are there concerns regarding accepted ethical or legal standards related to patient autonomy, privacy, confidentiality, or other ethical principles that are relevant to this assessment? (Note: The preferences and values of the public are to be considered as appropriate.)</p>	<p>Participants reported wanting effective treatments for glaucoma to prevent potential adverse health conditions, such as blindness. Patients valued the independence and quality of life good eye health provides. Trust between patient and health care provider was seen as valuable for decision-making when choosing glaucoma treatment, such as iStent or other MIGS procedures.</p> <p>Participants reported experiencing anxiety and fear around receiving a diagnosis of glaucoma and expressed a desire for safe and effective treatment. Participants who received a MIGS procedure (iStent or another type of MIGS) said they felt it improved their quality of life.</p>
<p>Equity and patient care</p> <p>How could the health technology/intervention affect equity of access and coordination of patient care?</p>	<p>Equity of access or outcomes</p> <p>Are there disadvantaged populations or populations in need whose access to care or health outcomes might be improved or worsened that are relevant to this assessment?</p>	<p>Based on uncertainty about the clinical effectiveness of iStent as a treatment for glaucoma, many people with glaucoma who receive standard treatments such as pharmacotherapy or filtration surgery are anticipated to obtain similar outcomes as people who may receive iStent. People who experience financial or physical challenges to using eye drops may not be afforded the chance of achieving the same clinical outcomes as those not faced with these issues. The use of iStent for these people represents differential treatment</p>

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	<p>Patient care</p> <p>Are there challenges in the coordination of care for patients or other system-level aspects of patient care (e.g., timeliness of care, care setting) that might be improved or worsened that are relevant to this assessment?</p>	<p>and resource distribution that may more equitably improve glaucoma outcomes.</p> <p>Both providers and patients cited challenges in ongoing adherence to pharmacotherapy treatment of glaucoma.</p>
<p>Cost-effectiveness</p> <p>How efficient is the health technology/ intervention likely to be?</p>	<p>Economic evaluation</p> <p>How efficient is the health technology/intervention likely to be?</p>	<p>Based on the health technology assessment,¹ which included cost-effectiveness analyses from two health technology assessments,^{3,4} there is uncertainty around the cost-effectiveness of iStent. iStent may be cost-effective compared with pharmacotherapy (ICER: \$14,120–\$25,596/QALY). iStent was cost-effective compared with pharmacotherapy in 60% to 76% and 65% to 100% of iterations at willingness-to-pay values of \$50,000/QALY and \$100,000/QALY, respectively. iStent + cataract surgery may not be cost-effective compared with cataract surgery alone (ICER: \$108,934–\$112,380/QALY). iStent + cataract surgery was cost-effective compared with cataract surgery alone in 17% to 46% and 46% to 68% of iterations at willingness-to-pay values of \$50,000/QALY and \$100,000/QALY, respectively. iStent may not be cost-effective compared with filtration surgery. These estimates are influenced by the long-term effectiveness of iStent.</p>

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<p>Feasibility of adoption into health system</p> <p>How feasible is it to adopt the health technology/intervention into the Ontario health care system?</p>	<p>Economic feasibility</p> <p>How economically feasible is the health technology/intervention?</p> <p>Organizational feasibility</p> <p>How organizationally feasible is it to implement the health technology/intervention?</p>	<p>Based on the health technology assessment,¹ which included budget impact analyses from two health technology assessments,^{3,6} iStent will likely increase costs in Ontario. The iStent device costs approximately \$1,250 (for 2 iStents or iStent inject devices). Publicly funding iStent may reduce some spending on glaucoma medication but, overall, iStent is likely to lead to additional costs for the public health care system. In Ontario, publicly funding minimally invasive glaucoma surgery (with iStent being one type of device used) over 5 y is estimated to cost a total of \$40 million if uptake is slow (25,000 people) and \$199 million if uptake is fast (100,000 people). The budget impact is highly dependent on uptake and the specific population in which iStent is used.</p> <p>There is likely sufficient infrastructure in place to facilitate implementation.</p>

Abbreviations: CADTH, Canadian Agency for Drugs and Technologies in Health; GRADE, Grading of Recommendations, Assessment, Development, and Evaluation; ICER, incremental cost-effectiveness ratio; IOP, intraocular pressure; INESSS, Institut national d'excellence en santé et services sociaux; MIGS, minimally invasive glaucoma surgery; QALY, quality-adjusted life-year; y, years.

References

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Ontario Health
 130 Bloor Street West, 10th Floor
 Toronto, Ontario
 M5S 1N5
 Tel: 416-323-6868
 Toll Free: 1-866-623-6868
 Fax: 416-323-9261
 Email: oh-hqo_hqa@ontariohealth.ca
www.hqontario.ca

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