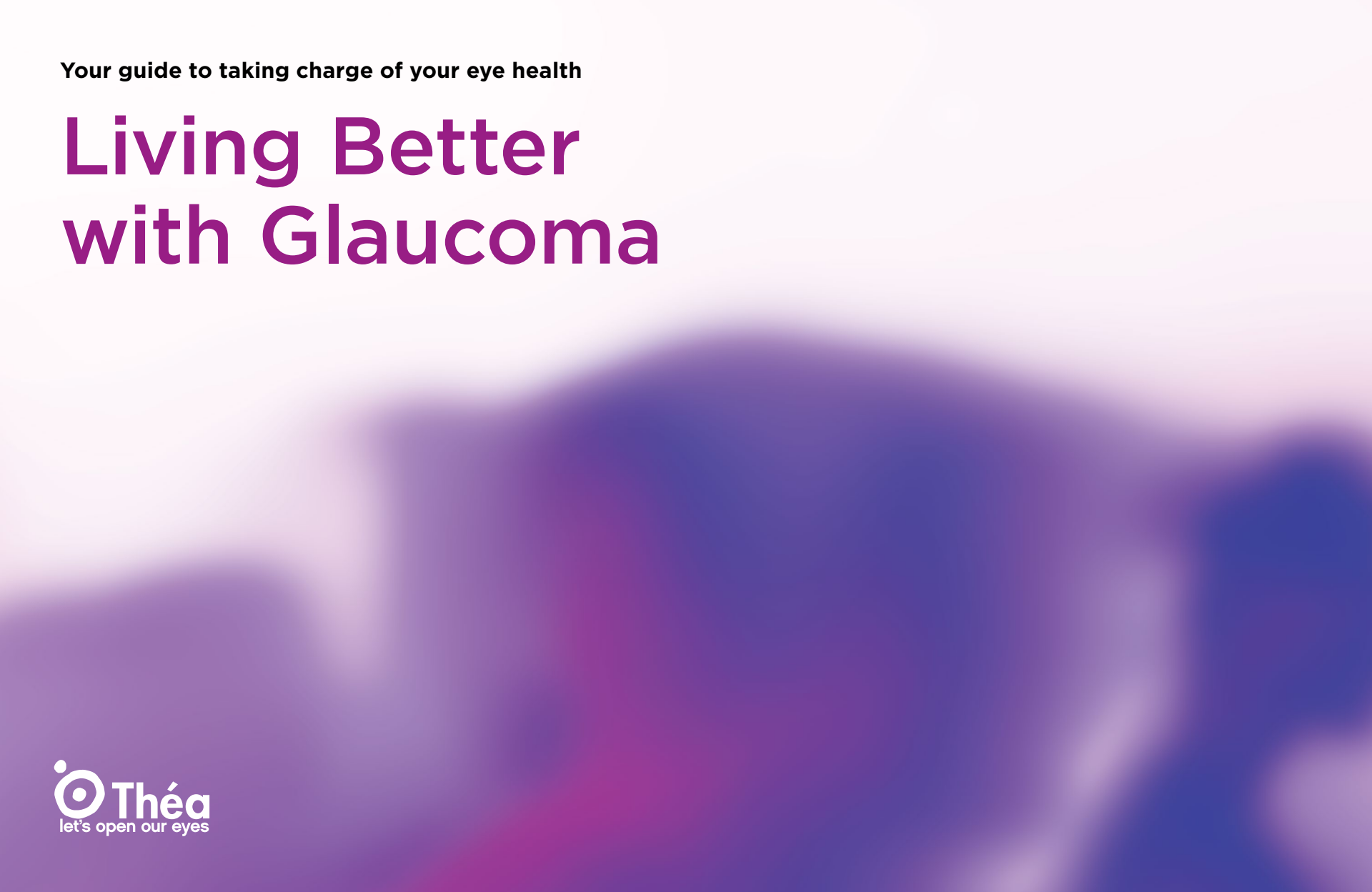
Your guide to taking charge of your eye health

Living Better with Glaucoma



Théa
let's open our eyes

Your Glaucoma Journey

You're not alone

725,000

Canadians are affected by glaucoma.[1]

It often has no symptoms, especially in its early stages. Left unchecked, glaucoma can lead to a reduced visual field and even blindness — hence the importance of early detection and treatment.

Getting started

Although there is currently no cure for glaucoma, you can take action now to slow the progression of the disease and reduce the chance of further vision loss. Begin by having regular eye exams, which are essential to determining the best course of treatment and managing your long-term optical health.

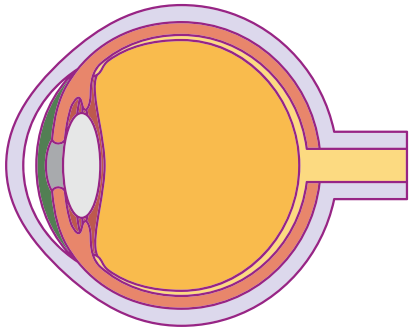
If you have been diagnosed with glaucoma or told you're at high risk, you may be wondering what the future holds, what to expect from your eye care professional and how to cope moving forward. This brochure is intended to provide you with some basic information you can use to ask the right questions and seek out the most effective solutions for you.

What Is Glaucoma?

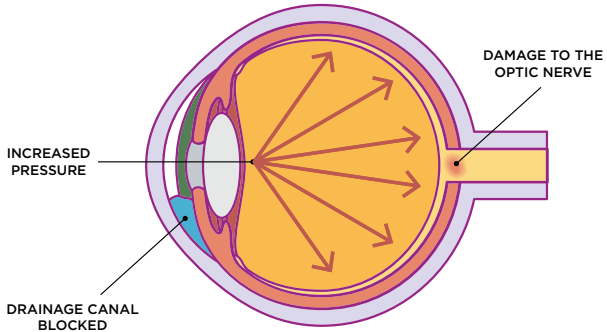
Glaucoma is a disease that results from chronic damage of the optic nerve and specific visual field loss.

Although the exact causes remain unknown, the most common forms of glaucoma are associated with an increase in fluid pressure inside the eye, known as intraocular pressure or IOP. This occurs when the clear liquid, or aqueous humour, that normally flows in and out of the eye is prevented from draining properly. This leads to an increase in IOP that causes damage of the optic nerve and subsequent irreversible and progressive vision loss.

Normal eye



Eye with glaucoma

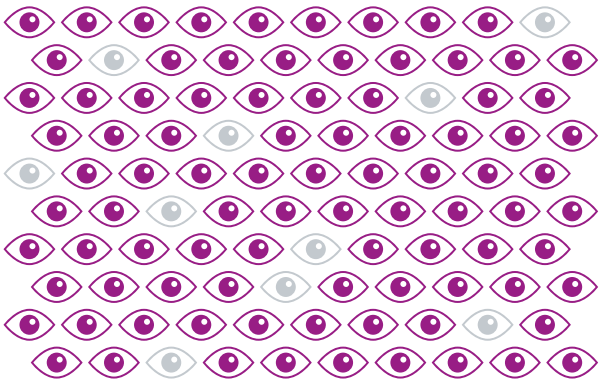


What are the different types of glaucoma?

Open-angle glaucoma

The most frequent form of glaucoma is open-angle glaucoma. This is when the aqueous humour in the eye is blocked from flowing through the drainage system at its normal rate. If you have open-angle glaucoma, you may not notice anything is wrong until the symptoms are more advanced. Regular preventive eye exams can help detect a higher-than-normal IOP, which may point to a risk of developing open-angle glaucoma.

OPEN-ANGLE GLAUCOMA ACCOUNTS FOR 90% OF ALL CASES IN CANADA[3]



What are the different types of glaucoma?

Normal-tension glaucoma

In some cases, damage occurs to the optic nerve even when the IOP is within the average or "normal" range of the general population, as the IOP is too high for the eye to tolerate. This is referred to as normal-tension glaucoma. Although exact causes of normal tension glaucoma are unknown, lowering IOP has also been shown to slow progression of this form of glaucoma.[2]

Angle-closure glaucoma

Acute angle-closure glaucoma is an uncommon condition, but one that requires immediate medical attention. It occurs when a bulging iris (the coloured part of the eye) abruptly blocks the flow of aqueous humour, leading to a glaucoma attack, from a sudden IOP spike. Optic nerve damage and vision loss can occur within hours. Due to the fact that the IOP rises significantly and suddenly, this type of glaucoma often presents with symptoms that may include severe eye pain and redness, severe headache, nausea, vomiting, blurred vision and seeing halos around lights.

Childhood glaucoma

Glaucoma in babies and children is rare. It may be hereditary or associated with other medical disorders. Congenital glaucoma, unlike glaucoma of adults, tends to present with an enlarged eye due to ocular malleability at this young age.

How does open-angle glaucoma affect your vision?

Most people develop glaucoma in both eyes, although increased eye pressure tends to start in one eye. The resulting damage may cause gradual changes in vision and loss of sight. Peripheral or side vision is usually affected first, leaving overall visual acuity intact, which is why it may go unnoticed for several years. Gradually, however, it will extend to your central vision, producing a tunnel effect. Unfortunately, sight loss from glaucoma is irreversible. Early detection and treatment are key to preventing vision impairment and maintaining optimal eye health. While there is no cure for glaucoma, there are many treatment options to control the disease and prevent further vision loss.

NORMAL

EARLY

MID-TERM

LATE

Who Gets Glaucoma?

Glaucoma can affect anyone, but some people are at higher risk of developing the disease than others.

Be sure to provide a complete medical history to your eye care professional to help them guide you in making the best decisions for your optical health. If you identify with any of these conditions, you may be more susceptible.

 OVER 40 YEARS OF AGE	 OF AFRICAN, ASIAN, HISPANIC OR INUIT DESCENT	 HAVE DIABETES	 HAVE A FAMILY HISTORY OF GLAUCOMA	 VERY NEARSIGHTED (MYOPIC) OR VERY FARSIGHTED (HYPEROPIC)
 LONG-TERM USE OF STEROID MEDICATIONS	 ABNORMALLY HIGH EYE PRESSURE	 HAVE MIGRAINES	 HAVE THIN CORNEAS	 HAVE HAD AN EYE INJURY

How Can I Tell If I Have Glaucoma?

The short answer: you probably can't. In most forms of glaucoma, the buildup of IOP happens very slowly, with few if any symptoms.

Peripheral vision may begin to decrease, but central visual acuity — which is used for driving, reading and most routine tasks — tends to remain intact in open-angle glaucoma. In normal-tension glaucoma, it is not uncommon for central vision to be affected early on. Regular follow-up, especially if you have any of the risk factors for glaucoma, is key to detecting any changes in your eyesight that may be a sign of a problem.

Note that the sudden onset of hazy vision, severe eye or head pain, nausea or vomiting may indicate a rare, acute form of glaucoma that requires urgent care. If you experience any of these symptoms, be sure to contact your eye care professional or emergency medical services immediately.

Your eye care professional can detect early signs of glaucoma and initiate treatment before extensive damage is done to your sight.

What Tests Are Used to Detect and Monitor Glaucoma?

Regular eye exams and ongoing monitoring are vital in screening for glaucoma and managing the disease once it is diagnosed. This may include the following tests:

Tonometry
This test uses an instrument that comes close to the eye to measure the IOP. Freezing drops may be administered beforehand to numb the surface of the eye for your comfort.

Gonioscopy
During this test, your eye care professional will use an instrument (gonioscope) to examine the drainage or canal of your eye and assess whether it is open or closed. Here, too, numbing eye drops may be used.

Ophthalmoscopy
This involves the use of a high-powered lens to assess the health of the inside of your eye, especially the optic nerve and retina. Your pupils will likely be dilated in preparation for this test.

Visual field test
This peripheral vision test assesses your visual function and measures how wide of an area you can see when focusing on a central point within a bowl-shaped instrument known as a perimeter. You will be asked to press a button whenever you see a faint light at different places throughout the bowl. The results can help detect early changes in vision caused by nerve damage from glaucoma.

Optical coherence tomography (OCT)
This imaging test uses a special camera to assess the structures of the anatomy of your eye, and map and measure the thickness of your retina and optic nerve. The results are helpful in diagnosing and monitoring glaucoma.

Heidelberg retinal tomography (HRT)
This test uses a special laser to produce a 3D image of the optic nerve. This image can be used to diagnose glaucoma damage early on or to identify progression of the disease.

How Is Glaucoma Treated?

The goal of glaucoma treatment is to lower your IOP to within a suitable target range that is less likely to cause further optic nerve damage, as determined by your eye care professional based on the type of glaucoma you have and other risk factors.

Your own target IOP range may vary over time. Various treatment options are available to help you reach and stay within this range, depending on your individual situation. Below are a few treatment examples.

Medication (eye drops)
Your eye care professional may recommend prescription eye drops to help control your IOP. This is achieved either by increasing fluid outflow or decreasing fluid production.[4] Using your eye drops as directed should become a part of your everyday routine to keep your glaucoma in check.

Laser therapy
Laser therapy may be used to create channels in the eye or remove blockages to help increase fluid outflow.[5] There are several types of laser surgery: selective laser trabeculoplasty (SLT), argon laser trabeculoplasty (ALT), iridoplasty and laser cyclophotocoagulation. Which laser is used will depend on the type of glaucoma you have as well as the target pressure that is needed to prevent further damage.

Conventional surgery
Surgery may be necessary for those who do not respond as hoped to medication or laser therapy.[6,7] The goal is to create a new canal in your eye to help divert the fluid outside the eye more freely. This is usually done by creating a new canal that drains outside the eye (trabeculectomy) or by implanting a tube that drains the fluid out.[7]

Minimally invasive glaucoma surgeries (MIGS)
MIGS are procedures that are less invasive than traditional surgery and, as a result, have a better safety profile. They, too, aim to lower IOP by either improving the flow of liquid in the eye or reducing fluid production. Many of these procedures show a great deal of promise in treating certain types of glaucoma, including some where conventional surgery would be less advisable.

What Options Are Available for Eye Drops?

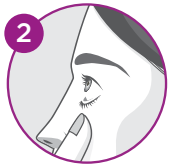
When choosing the right type of eye drops to manage your glaucoma comfortably, it is important that you understand the difference between the two different types of drops.

Preserved options
For many years, all eye drop formulations contained preservatives to help prevent bacterial contamination and extend product shelf life. However, some preservatives have been found to cause eye irritation, redness or red eyes, dry eye, inflammation and other adverse effects, including poorer long-term outcomes of glaucoma surgery.[8]

Preservative-free options
Preservative-free eye drops are a newer therapy in Canada to help manage your glaucoma. They reduce the incidence of adverse effects experienced with eye drops that contain preservatives,[8,9] making them a better tolerated and more comfortable option without compromising on effectiveness. The single-use vials or special bottles used for these drops maintain sterility without the need for preservatives.

What's the right way to use eye drops?

Make sure your hands are clean before handling and applying your eye drops.



Look up and gently pinch and pull your lower lid to create a pocket.

Squeeze one drop into your eye, ensuring the dispenser does not touch your eye or any other surface. If the drop misses your eye, try again. Any excess liquid may be dabbed (not wiped) from your eye with a soft tissue.

Release your lower eyelid and close your eye for 30 to 60 seconds. Remember to put the cap back on the eye drop dispenser, or discard the single-use vial.

Tips

- Always check the tamper-proof seal on a new eye dropper. Do NOT use if broken.
- Be sure to use your drops as prescribed by your eye care professional to best prevent ocular damage and preserve your sight. Remember to take all your eye drops with you to every check-up for discussion and review as needed.
- Incorporate your drops into your everyday routine to avoid missing a dose.
  Brush your teeth, wash your face, take your drops!

My Drop Tracker

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Frequently Asked Questions

Is there a cure for glaucoma?
Glaucoma is not curable. With laser treatment, medication or surgery, it is possible however to slow the progression of the disease. Since there is no cure, glaucoma needs to be monitored for life.

Is glaucoma hereditary?
Some forms of glaucoma are indeed inherited, but many of the factors leading to the disease do not seem to have a genetic link. Research is ongoing to gain a better understanding of the genetics of glaucoma.

Can vision that is lost due to glaucoma be restored?
Cells in the retina and optic nerve are not regenerated once they are lost. Scientists are currently working on regenerative therapy solutions to replace retinal neurons, but this is not yet a reality.

Will I go blind?
While glaucoma is the leading cause of irreversible blindness worldwide, most glaucoma patients will not go blind if the disease is caught early and well controlled. Compliance to treatment and follow-up is vitally important to maintain your eyesight. By working with your eye care professional to manage your glaucoma, a more favourable outcome is likely.

Is there anything I can do to prevent glaucoma?
Besides regular follow-up with your eye care professional to assess your eyes for glaucoma, there is nothing that you yourself can do to prevent glaucoma.

I feel that my sight is fine. Can I skip my drops?
You should always take your prescription eye drops as directed by your eye care professional. You may not feel like there is a problem, but only your eye care professional can accurately assess your vision and eye pressure. Remember, glaucoma is often symptomless, which is why it is referred to as the silent thief of sight. It is important to take your drops regularly to prevent irreversible vision loss.

What if I forget to take my drops?
If you forget your drops, refer to the documentation received with your drops to see how to proceed. For many drops, you can take one dose once you remember and then resume your normal routine. Do not double up the dose.

How will my glaucoma management change if I have other eye conditions?
If you have other eye conditions, speak with your eye care professional about how that will affect your glaucoma management options.

Is there a connection between high arterial blood pressure and glaucoma?
There is no direct link between elevated blood pressure and elevated eye pressure. On the contrary, low blood pressure may be associated with some progression of glaucoma, especially in cases of normal-tension glaucoma.

Should I stop my eye drops if I experience eye discomfort?
Always take your prescription eye drops as directed by your eye care professional. If you experience discomfort with your eye drops, speak with your eye care professional on how to best address the situation.

What if I accidently put two drops in my eye?
Do your best not to double up your dose. If you apply two drops by accident, continue taking your medication as directed. Do not skip a dose.

Why are preservatives used in some eye drops?
Every time you open an eye drop container, the drops are at risk of becoming contaminated. Preservatives are added to some glaucoma eye drops to help prevent this contamination.

Are there side effects to preservatives?
While they can prevent bacterial contamination from developing, preservatives can have some drawbacks for your eye health and comfort. Repeated exposure to preservatives found in eye drops can cause redness, dry eye, eye irritation, eye inflammation and other adverse effects, including poorer long-term outcomes of glaucoma surgery.[8]

What are the benefits to preservative-free eye drops?
Preservative-free eye drops don't contain preservatives that cause eye irritation and discomfort. Using preservative-free eye drops may reduce the eye irritation and dry eye that glaucoma patients may experience, while providing them with effective IOP management.[10]

How can I prepare for my glaucoma surgery?
Discuss with your surgeon on how to best prepare for glaucoma surgery. This may include making changes to your glaucoma medication, fasting and possibly stopping other medications not related to your glaucoma.

How long will my recovery time be after glaucoma surgery?
Glaucoma surgery recovery varies from patient to patient as well as the type of surgery performed. It may be at least two weeks before you can return to your normal daily routine. It is important to discuss this with your surgeon before and after your operation, and prior to returning to normal activities.

Can I play sports after glaucoma surgery?
After your recovery period, you should be able to engage in the same level of physical activity as you did pre-surgery. You may need to take more precautions with contact sports and make sure to wear goggles while swimming. Always speak with your eye care professional on how to safely partake in physical activity while protecting your eyes.

Can blood pressure, weight, diet, smoking and other health and lifestyle issues affect my glaucoma?
There is more of an association of glaucoma worsening with low blood pressure than with high blood pressure. Certain blood pressure medications, such as diuretics (water pills) or calcium channel blockers have been associated with glaucoma worsening, but the data to support this is still limited. A healthy weight and good lifestyle choices are recommended for optimal ocular and overall health in all patients. Quitting smoking, in particular, is highly recommended, as cigarettes can negatively affect the outcomes of glaucoma surgery.[11]

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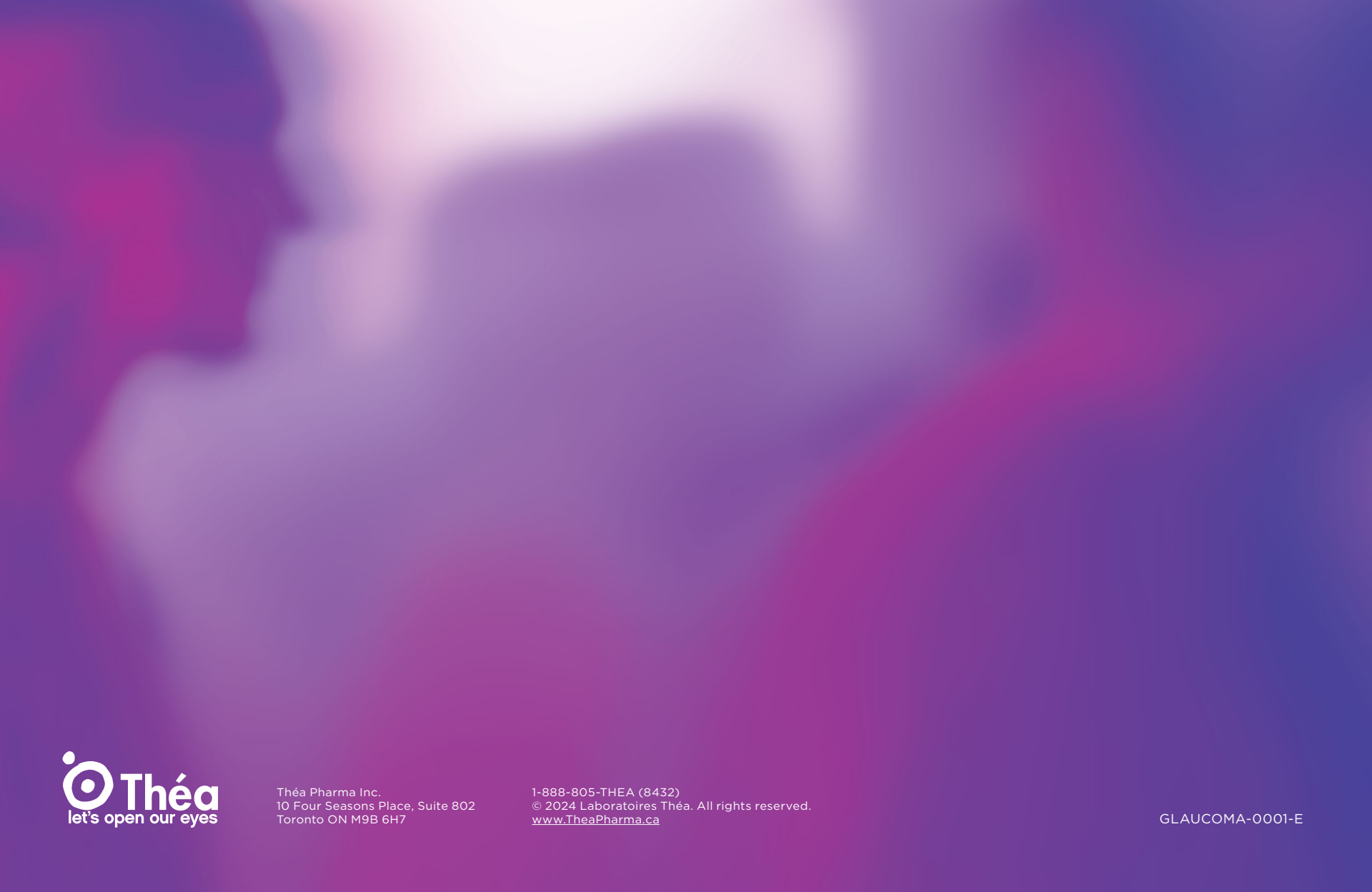

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