GLAUCOMA:
The Symptoms, Risks, and Surgical Treatment
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Understanding Glaucoma

Part 1: Understanding Glaucoma

Imagine an eye disease with very few early symptoms. Vision loss may begin at the periphery of the field of vision and progress rapidly to total blindness. Millions of Americans live with the risk of this eye disease. More than one million people may have it and don’t know it, while another 1.1 million are already being treated for it.

It’s called glaucoma and can result in complete blindness if left untreated. It’s the second leading cause of blindness in the world after cataracts; yet, many people have never heard of it. Others have heard of it but don’t know what it is, or don’t realize how severe it can be.

The vision damage from glaucoma is irreversible. Treatments focus on preventing vision loss by reducing pressure in the eye and stopping further optic nerve damage.

What is glaucoma? What are the symptoms? Who is most at risk? And what are the treatment options for patients diagnosed with glaucoma? This e-book will explore the answers to these questions and describe five of the most common surgical treatments for glaucoma.

What Is Glaucoma?

Glaucoma is most frequently caused by increased pressure in the eye. Eyes contain a clear fluid, called aqueous humor, which is produced in the rear chamber. This fluid is supposed to flow through the pupil into the front chamber and then drain out of the eye. During this process, the aqueous humor provides structural support, oxygen, and nutrition to the eye’s tissues.

In a person with glaucoma, the eye does not drain the aqueous humor effectively. This leads to increased pressure in the eye, known as intraocular pressure (IOP). This increased pressure may damage the optic nerve, and that is when vision loss from glaucoma occurs. There are two main types of glaucoma.
Understanding Glaucoma

Closed-Angle Glaucoma

In closed-angle glaucoma, the eye’s drainage angle between the iris and the cornea become narrow or closed. A person with narrow anterior chamber angles in the eye could be at risk for closed-angle glaucoma.

Open-Angle Glaucoma

This is the most common type of glaucoma. In open-angle glaucoma, the drainage area in the eye isn’t blocked, but it isn’t working properly to drain fluid. This situation leads to IOP building up and contributes to gradual vision loss. If left untreated, blindness can become permanent in the last stages of the disease.

Other Causes of Glaucoma

There are other causes of glaucoma, such as eye injuries, severe eye infection, severe inflammation in the eye, and a blockage of blood vessels in the eye. Glaucoma that is inherited will typically occur in both eyes. Each eye can be affected to a different extent and symptoms can appear on different timelines. Glaucoma caused by eye injuries, or other outside factors, may affect only the damaged eye.

“The Silent Thief of Sight”

What causes this “silent thief of sight?” Let’s look at the symptoms, risks, complications, and surgical treatment options available. Many of these treatment options offer very good odds of stopping further vision loss.
Symptoms of Glaucoma

Part 2: Symptoms of Glaucoma

The most obvious late-stage symptoms in all types of glaucoma are vision loss, tunnel vision, and complete blindness.

Closed-Angle Glaucoma Symptoms

Closed-angle glaucoma comes on rapidly and may cause the following symptoms:

- Intense Headaches
- Extreme Eye Pain
- Blurred Vision
- Halos Around Lights
- Nausea or Vomiting from the Intensity of Other Symptoms

Open-Angle Glaucoma

Open-angle glaucoma frequently has no symptoms until vision loss has occurred. A decrease in visual acuity typically begins along the edges of the field of vision, called peripheral vision. Although glaucoma usually appears in both eyes, the lesser affected eye may compensate for the vision loss.

It is only in the late stages that patients notice loss of vision. That’s why it’s so important to get tested for glaucoma every two to four years before age 40, and every year (or possibly more frequently) for those in higher risk categories.

High IOP is known as a warning sign of glaucoma, so screening that detects IOP levels may reveal a risk for glaucoma. In fact, 30% of patients with glaucoma always have high IOP.
Part 3: Risks and Complications of Glaucoma

Glaucoma is characterized by a loss of peripheral vision, followed by a narrowing field of vision resulting in tunnel vision, and, finally, central vision loss.

According to the Glaucoma Research Foundation, approximately 5% of Americans with glaucoma go blind, and another 10% experience some degree of vision impairment.

Risk Factors for Glaucoma

Although glaucoma can happen to anyone, certain risk factors can increase the odds of getting glaucoma. African Americans and Latin Americans are the most likely ethnicities to get glaucoma. The prevalence of blindness is 14 to 17 times more likely in African Americans aged 45 to 65 than Caucasians in the same age group.

Other risk factors for glaucoma include a family history, eye trauma, hypertension, thin corneas (which can be detected in an eye exam), diabetes, and steroid use.

Many patients with glaucoma turn to treatments that lower IOP using a steady regime of eye drops. But for many patients, surgery to treat high IOP is the more desirable option.
Part 4: Surgical Treatment Options for Glaucoma

Although there is currently no cure for glaucoma, patients can choose from a number of highly effective surgical treatment options performed in order to halt the progression of the disease and prevent blindness.

There are five types of surgery your eye doctor may recommend. All of these surgeries are FDA approved, and are typically covered by Medicare, Medicaid, and most health insurance policies. As with any surgery, they carry some risks and side effects. An open and honest conversation with an eye doctor can help you make informed choices about the best treatment for glaucoma.

Surgical Treatment Options Include:

- Selective Laser Trabeculoplasty
- Laser Peripheral Iridotomy
- Laser Cyclophotocoagulation
- Trabeculectomy
- Shunt Procedures

Selective Laser Trabeculoplasty (SLT)

Selective Laser Trabeculoplasty is a common, outpatient surgical treatment for open-angle glaucoma that takes about a minute to perform in the eye doctor’s office. The treatment uses a laser to create small burns in the area where the fluid drains, improving the outflow rate of the aqueous humor.

This surgery may be prescribed if glaucoma doesn’t respond to medication or as an initial treatment immediately following diagnosis.

It’s been used successfully in the U.S. for more than a decade. Side effects are typically mild and may include eye inflammation. In about 5% of these surgeries, IOP increases immediately following surgery, and this is treated with glaucoma medication.

SLT may have to be repeated in one to five years if the effects wear off.
Surgical Treatment Options for Glaucoma

Laser Periphery Iridotomy (LPI)

Laser Peripheral Iridotomy is used to treat closed-angle glaucoma by using a laser to burn a hole through the iris near its base, allowing it to fall back from the fluid channel. The result is that it helps the fluid drain and lower IOP.

Endoscopic Cyclophotocoagulation (ECP)

Endoscopic Cyclophotocoagulation is one of the latest developments in the field of surgical laser procedures to treat glaucoma. The outpatient procedure uses a laser to treat the ciliary body. The surgeon views the area through an endoscopic camera placed in a small incision, permitting extremely precise laser placement. ECP shrinks the part of the eye that makes fluid, thus lowering IOP.

ECP is often performed at the same time as cataract surgery, since the same incision can be used to remove the cataract.

ECP has proven effective in patients when SLT and LPI surgeries have failed or when glaucoma has not responded to medications.

Trabeculectomy

Doctors may recommend a trabeculectomy, sometimes called filtration surgery, when other surgical treatments have failed.

During surgery, the doctor makes a new drain for the eye. The opening is partially covered with a flap of tissue from the white of the eye and the conjunctiva, the clear thin covering over it. This permits fluid to bypass the trabecular meshwork.

As fluid flows out of the new opening, it creates a bleb, a small blister or bubble where the white of the eye meets the iris. Blebs may be slightly visible or invisible to the naked eye. During a follow-up visit the next day, the doctor will examine the bleb to ensure fluid is still draining.

Following surgery, antibiotics will be supplied to prevent infection, the eyelid will be taped shut, and a hard eye shield will be placed over the eye. This dressing will be worn overnight and the shield is worn at bedtime for about a month. Corticosteroids will also be applied daily for as long as eight weeks to decrease inflammation.
Bending, lifting, straining, and any activity that could jar the eye should be avoided for several weeks after surgery. Patients can expect mild discomfort.

Because of the side effects, which can include blurry vision for a few weeks after surgery and, on rare occasions, central vision loss, a trabeculectomy is typically a last resort and used only after glaucoma has not responded to medication or other laser treatments.

**Shunt Procedures**

Shunt procedures are done under local anesthesia and the doctor may provide sedatives for greater comfort during surgery. There are a variety of types of shunts that may be used. Your eye doctor will discuss your options and help you to make the best choice for your glaucoma. A shunt is placed in the eye to improve drainage of the aqueous humor.

After the surgery you’ll need to wear a patch and eye shield. During the six to eight weeks of recovery, you’ll use a variety of eye drops. As with filtration surgery, strenuous activity should be avoided.

Shunt procedures are typically prescribed for specific forms of glaucoma or when other surgeries and laser treatments have failed.

**Concerned About a Glaucoma Diagnosis?**

A glaucoma diagnosis can be scary, but you’re not alone. Today’s surgery options include highly effective, nearly painless, outpatient procedures using sophisticated laser technology. A glaucoma diagnosis is not a guarantee of blindness, but testing to catch it early is very important. Patients can live for decades with minimal vision loss if it’s caught early.

*If you have questions about glaucoma or treatment options, or would like to schedule a consultation, please click here or call 888-845-4911.*