

## Latest Advances in Glaucoma Treatment

Glaucoma is a group of eye diseases that damage the optic nerve, often due to increased pressure within the eye (intraocular pressure or IOP). If left untreated, this damage can lead to vision loss or even blindness. Known as the "silent thief of sight," glaucoma often progresses without noticeable symptoms in its early stages, making regular screenings crucial for early detection and treatment.

### Types of Glaucoma

- **Primary Open-Angle Glaucoma:** The most common type, characterized by slow drainage of the eye's aqueous humor, leading to increased IOP.
- **Angle-Closure Glaucoma:** Occurs when the drainage angle becomes blocked suddenly, leading to a rapid rise in IOP. This type is a medical emergency.
- **Normal-Tension Glaucoma:** Even without elevated IOP, damage to the optic nerve occurs, potentially linked to poor blood flow or fragile optic nerve fibers.
- **Congenital Glaucoma:** A rare type that occurs in infants due to improper development of the eye's drainage system.
- **Secondary Glaucoma:** Caused by an underlying condition such as diabetes, eye injury, or medication side effects.

### Who Is at Risk?

While glaucoma can affect anyone, certain factors increase the risk:

- **Age:** Individuals over 60 are at higher risk.
- **Family History:** A genetic predisposition significantly raises the likelihood.
- **Ethnicity:** African Americans, Hispanics, and Asians are more prone to specific types of glaucoma.
- **Medical Conditions:** Diabetes, high blood pressure, and extreme nearsightedness increase susceptibility.
- **Prolonged Steroid Use:** Long-term use of corticosteroid medications can raise IOP.

## **Glaucoma Screenings**

Early detection of glaucoma is vital to preserving vision. Regular eye exams, particularly for individuals at higher risk, can identify the condition in its initial stages, allowing for prompt intervention. We recommend comprehensive screenings annually for those over 40 or with a family history of glaucoma.

A comprehensive glaucoma screening includes:

- **Tonometry:** Measures IOP using advanced tools like non-contact or Goldmann applanation tonometers.
- **Visual Field Test:** Assesses peripheral vision to detect early vision loss.
- **Optic Nerve Imaging:** Cutting-edge technologies like Optical Coherence Tomography (OCT) and fundus photography provide detailed images of the optic nerve.
- **Gonioscopy:** Examines the drainage angle of the eye to determine the type of glaucoma.
- **Pachymetry:** Measures corneal thickness, which can influence IOP readings.

## **Traditional Glaucoma Treatments**

Glaucoma management has primarily focused on controlling intraocular pressure (IOP) to prevent further damage to the optic nerve. One of the most common approaches involves medications, such as prescription eye drops, which work by either improving the eye's drainage of fluid or decreasing its production to reduce IOP effectively.

Another widely used method is laser therapy. Procedures like Selective Laser Trabeculoplasty (SLT) target the eye's drainage angle, enhancing the outflow of aqueous humor and thereby lowering IOP. This non-invasive option is particularly beneficial for patients who may not respond well to medications.

For more advanced or unresponsive cases, surgical interventions may be necessary. Techniques such as trabeculectomy or the implantation of shunts are designed to create new drainage pathways, allowing excess fluid to exit the eye and reduce pressure. These traditional treatments have been instrumental in managing glaucoma and preserving vision for millions of patients.

## **Latest Advances in Glaucoma Treatment and Technology**

- **Minimally Invasive Glaucoma Surgery (MIGS):** These procedures, including iStent and Hydrus Microstent, are less invasive than traditional surgeries, offering faster recovery times and fewer complications.
- **Sustained-Release Drug Delivery:** Innovations like Durysta™ deliver medication directly into the eye, reducing the need for daily drops.
- **Excimer Laser Trabeculostomy (ELT):** A non-invasive laser treatment that targets the trabecular meshwork to improve fluid drainage.
- **Gene Therapy:** Research is exploring ways to modify genetic risk factors or protect optic nerve cells through targeted therapies.
- **Neuroprotective Agents:** Emerging treatments focus on preserving optic nerve function, even if IOP is under control.

At San Marcos Vision Center, we're dedicated to providing cutting-edge glaucoma care tailored to your needs. Schedule your comprehensive eye exam today and explore the latest innovations in glaucoma treatment.