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## Glaucoma

Glaucoma - often called the "sneak thief of sight" because it can strike without symptoms - is the second leading cause of blindness in the US.

Over 2.2 million have glaucoma but only half know they have it.

**Glaucoma** is where susceptible individuals suffer irreversible damage to the nerves inside their eyes. These nerves are responsible for relaying information from the retina to the brain. As the nerves suffer damage, the vision starts to deteriorate. The losses of vision from glaucoma begin in the areas around the center of vision, but with time even the very center as well as the far peripheral vision can be damaged.

Glaucomatous damage is usually (but not always) related to elevated pressure inside the eye. The eye is a closed chamber, but a clear circulatory fluid is constantly being produced and then drained away from the eye. In "open angle" glaucoma, there is a restriction in outflow of the fluid, with a painless mild to moderate chronic increase in pressure. In "closed angle" glaucoma, the iris at the front of the eye is actually blocking fluid outflow producing a rapid, significant, painful pressure increase. Open angle is by far the most prevalent form of glaucoma.

In glaucoma, increased fluid pressure bears against the fragile nerve fibers and microscopic capillaries inside the eye. Over time, this produces impairment and ultimately death of individual nerve fibers. Since you cannot feel the most prevalent form ("primary open angle") of glaucoma, you have no way of detecting this sight damaging condition on your own. The only method of detection is via an eye examination, where pressure can be measured and the nerves observed by an eye doctor.

In some cases, those with "normal" eye pressures can develop glaucomatous damage; and in some cases those with what we would consider high pressures have no damage. In these cases, other tests - stereo photography of the nerves, corneal (front of the eye) thickness measurements, visual field testing or laser

based scanning of the critical nerve structures may be recommended periodically. All observations are greatly aided by the use of dilation drops, since they make those critical structures much easier to assess.

Commonly, repeated testing is needed to establish a diagnosis of glaucoma. Oftentimes, patients wonder why they must have this ongoing testing. Can't the doctor just tell me whether or not I have glaucoma? This frustrating situation is caused by the fact that glaucoma involves nerve impairment, and that impairment may be masked by compensation by adjoining nerves, and/or erratic performance by nerves being tested. So, it might take repeated testing over time and comparisons with baseline tests to finally show that glaucoma is active.

**Exams:** It is recommended that older adults have an eye examination every two years minimum and every year for those at risk. For cases where a possible problem is detected and needs to be watched, visits should be as suggested by your eye doctor. Never skip these exams.

**The risk?** Anyone can develop glaucoma, but the more susceptible are:

- Anyone over the age of 60, especially Hispanics.
- African Americans over the age of 40.
- Those with a family history of glaucoma.
- A history of blunt trauma to the eye might pose additional risk.
- Diabetics
- Nearsighted individuals

**Treatment:** Of course, we rightfully think of general health strategies – nutrition, exercise, and smoking cessation – as possible remedies for glaucoma. I wish that I could tell you that such wise choices are proven to prevent or treat glaucoma, but I cannot. On the other hand, results of unhealthy habits-- diabetes, hypertension, or heart disease may make one more susceptible to glaucomatous damage for other reasons. But the actual mainstay of glaucoma treatment is via pressure-reducing prescription eye drops. These drops must be used for life.

Over the years, many questions have been asked about marijuana as a glaucoma treatment. My own opinion is that the dose of marijuana necessary to obtain a reliable pressure reduction, the significant side effects of that dose, and the relatively short duration of action of the drug make marijuana a poor choice for glaucoma treatment.

Other treatments include laser based “opening” of the outflow channels to hopefully reduce pressure, or surgery to insert a shunt or similar operative

methods to release pressure from the eye. The object of all treatment is to reduce eye pressure and hopefully forestall additional nerve damage. As with many disease conditions, the earlier in the process that the condition can be identified and treatment instituted, the better the eventual outcome.