

Assess Your Risk Factors For Glaucoma

“Am I going to go blind, Doctor?” “I won’t get glaucoma, will I, Doc?” “Should my children have an eye examination?”

To answer these questions honestly a practitioner needs to evaluate your risk factor profile for developing glaucoma as well as examining your eyes for other diseases that may not have symptoms. Let’s discuss the risk factors or markers for glaucoma that we can identify:

Family history

The family history is a very important risk factor that is easily identified. Having a first degree relative with primary open angle glaucoma increases your risk by 2-3 times the normal. If you have a sibling with primary open angle glaucoma then the risk is even higher. Genetic studies are beginning to identify particular sub groups of individuals with glaucoma. It is potentially possible in the decades ahead that there will be a genetic profile that identifies your intrinsic risk of developing glaucoma. For the present if you have glaucoma then your siblings should most certainly have an eye examination and your first degree relatives should also be encouraged to, particularly if they are over 40 years of age.



Steroid use

The eye can respond to steroid use with a change in the drainage channels for the eye fluids so that the eye pressure rises dramatically. This is a genetically predisposed response that occurs in some individuals but not in others. It particularly happens with steroid eye drops but it also occurs with steroid skin creams, nasal sprays and in taking steroid tablets. The rise in pressure can occur over the first few weeks or months of treatment and can cause profound damage to the optic nerve within six months. If you are on steroids of any sort for any length of time you should have your eye pressure monitored.

Refractive error

If you have hypermetropia (long sightedness) then your glasses will have lenses that are thicker in the centre and thinner at the edge. When you look through the glasses things are larger than what they really are and someone looking at your eyes sees you to have bigger eyes also. Long sightedness relates to a short eye which will often have a shallow anterior chamber and with age predispose to angle closure glaucoma. It is important to identify this risk factor, as angle closure glaucoma may present acutely with very, very severe pain or it may develop slowly with extensive damage before detection.

Myopia (short sightedness) is where the unaided eye can see clearest up close but has blurred distance vision. The myopic eye is longer and the back part of the eye is stretched out often affecting the tissues around the optic nerve head. Primary open angle glaucoma can be more difficult to detect in its early stages in eyes with myopia and there is debate as to the risk associated with myopia. But the important and practical message is that patients with myopia should have careful optic disc assessment for glaucoma, particularly with increasing years.





Eye injuries

Eye injuries are either “penetrating” where the eye is cut for example with windscreen injuries, or “blunt” as occurs when the eye is hit by a golf ball, tennis ball or a fist. The blunt injuries are particularly harmful to the drainage channels. A high pressure may result either acutely soon after the time of the injury or many years later with the development of scarring of the drainage channels. If you have had a significant eye injury in the past you should have your eye pressure monitored. Traumatic glaucoma can be more difficult to treat than other forms of glaucoma and often requires glaucoma surgery.

Eye pressure

Most readers of *Eyelights* will be well aware that eye pressure is a very important risk factor for developing glaucoma. In addition it is one of the most treatable risk factors. However, only two out of three patients with primary open angle glaucoma will have an “abnormal” eye pressure: i.e. one that is above 21mmHg. One in three patients will have what is considered a normal eye pressure. This is partly because eye pressure varies during the day and during the year and may be measured at a time that it is lower than usual. But also it demonstrates that there is risk to the optic nerve that is not related to eye pressure.

Some eyes with glaucoma never have an abnormal eye pressure. We call that “normal tension glaucoma”. Eyes that have an abnormal eye pressure but do not have glaucoma are said to have ocular hypertension (OHT).

Central corneal thickness

A large glaucoma study looking at ocular hypertension found that the corneal thickness is a risk factor. It is a risk because a cornea that is thin means the eye pressure is incorrectly read as being lower than what it really is. However, even adjusting for this measurement error there is a strong opinion that thin corneas indicate weak tissues at the back of the eye and greater susceptibility for glaucoma damage. The thickness of your cornea is entirely genetically determined.

Eye disease

There are a number of eye diseases and disorders of eye structure that lead to glaucoma. Structural abnormalities often lead to glaucoma in infancy. Disorders with pigment released from the iris can lead to glaucoma often in young adult males with mild degrees of myopia. Abnormal peeling of the membranes inside your eyes leads to a condition called pseudoexfoliation and glaucoma and cataracts. Then there are vascular and inflammatory diseases in the eye some of which will relate to general health problems. Neovascular glaucoma is a term used when there are numerous new vessels developed within the eye in response to vascular injury.

Optic disc structure

An important component of an eye examination is assessing the appearance of the optic disc. (See p8) Optic discs come in a variety of sizes from small to large but they all have a similar number of nerve fibres (1.2 million). Large optic discs therefore have a space in the middle called the optic cup that small optic discs will not have. In glaucoma the optic cup enlarges as the nerve fibres die off. A diagnosis of glaucoma requires an abnormality of the optic disc that has developed over time. A once only examination of the optic disc cannot always be certain that the optic disc is normal or abnormal. Glaucoma NZ promotes careful examination of the optic disc in all its educational programmes.