

## September is Save our Sight month

Every year in Save our Sight month the optometrists of New Zealand take the time to promote life long eye health and prevention of blindness to the public and fellow health professionals.

We do this because in our country there are still people going blind needlessly.

Nearly one-fifth of the members of the Royal New Zealand Foundation of the Blind have lost vision due to preventable causes.

In the 2006 disability survey, sensory disabilities (hearing and/or seeing disabilities) were the second most common disability type for adults, affecting 8 percent of adults (42 percent of adults with disability, or 239,000 adults). For children under 15 years there were 11,500 with seeing disabilities.

Statistics NZ used the following definition for a seeing disability in the 2006 disability survey:

Seeing disability – includes people who have difficulty seeing or cannot see ordinary newsprint and/or the face of someone from across a room, even when wearing corrective lenses.

While much blindness in poor countries is due to uncorrected refractive error, in places like New Zealand causes are more likely to be disease or degeneration. With an aging population conditions affecting vision are going to be presenting more commonly at GP practices and support for people who have low vision is going to be important as well.

This year for Save our Sight we are aiming to raise awareness of the big three: age-related macular degeneration; diabetic eye disease; and glaucoma.

These conditions have a strong medical component linked to systemic conditions and also have a heavy eye health footprint as well. They are conditions which are very much suited to management in the community and are conditions where the patient benefits from general practice and optometry working together at all stages of disease progression.

It is worth getting a full optometry report on each patient's eye health status and to make sure any loss of vision is considered as part of general health and well-being.

Vision impairment negatively impacts on:

- Independent living
- Quality of life
- Self-ranking of health
- Depression
- Falls and fractures
- Increased need for community and/or family support
- Earlier institutionalized care.

Often older people will make light of their vision loss. They may feel it is just a normal part of aging and not something to complain about. The reality is that loss of vision often means reduced participation in activities that stimulate the mind or exercise the body. Not being able to see the news on television or to read the paper can reduce social participation as much as not being able to get out and about.

Another thing to consider is that although risk of glaucoma is much lower in young people than for the over 60's it can still happen so it is good to encourage patients of all ages to have regular eye examinations.

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## **Glaucoma**

Several large studies have shown that eye pressure is a major risk factor for optic nerve damage and general practitioners are well aware of that.

However, not every person with increased eye pressure will develop glaucoma. Some people can tolerate higher levels of eye pressure better than others. Also, a certain level of eye pressure may be high for one person but normal for another.

Whether an individual develops glaucoma depends on the level of pressure their optic nerve can tolerate without being damaged. This level is different for each person. That's why a comprehensive dilated eye exam is very important. It can help determine what level of eye pressure is normal for each person.

Of course, glaucoma can develop without increased eye pressure. This form of glaucoma is called low-tension or normal-tension glaucoma. It is a type of open-angle glaucoma.

At the end of the day, anyone can develop glaucoma but some people are at higher risk than others.

### **Risk Factors for Glaucoma**

- ♦ Having a parent, brother or sister with glaucoma
- ♦ Being over 60 years old
- ♦ Being of a specific race: In primary open angle glaucoma being a black American, in angle closure being Eskimo or Chinese
- ♦ Having certain medical conditions: high blood pressure, diabetes, thyroid disease, or a history of migraine.
- ♦ Taking steroids over a prolonged period
- ♦ A history of eye injury
- ♦ Injuries that have involved sudden blood loss

***Not every person with increased eye pressure will develop glaucoma, and of course, glaucoma can develop without increased eye pressure***

***Acute angle closure is a relatively rare condition with rapid onset causing a painful red eye with nausea and possibly vomiting. The pupil will be semi-dilated and not moving. This constitutes a medical emergency***

- ♦ Being myopic (short sighted) in primary open angle glaucoma; and being hyperopic (long sighted) in angle closure glaucoma.

### **Types of Glaucoma**

Primary Open Angle Glaucoma. This form of glaucoma is also called chronic open angle glaucoma. The eye produces a fluid called aqueous, which needs to drain out of the eye at the same rate as it is being produced. If this doesn't happen, the pressure in the eye increases. The point at which the raised pressure will damage the optic nerve head varies between individuals. It is called primary glaucoma because the cause of the glaucoma is not truly known.

Acute Angle Closure and Angle Closure Glaucoma. This condition is relatively rare but your optometrist will be able to detect its risk factors. This is a rapid onset form of glaucoma and causes a painful, red eye with nausea and possibly vomiting. The pupil will be semi-dilated and not moving, and vision will appear "steamy". When there is a sudden closure of the drainage angle of the eye it causes a rapid increase in the eye pressure. This constitutes a medical emergency. Failure to treat angle closure within a day can result in angle closure glaucoma.

Chronic Angle Closure and Angle Closure Glaucoma. In acute angle closure the drainage angle of the eye closes suddenly with the entire angle closed. In chronic angle closure the angle gradually closes and mimics the same pressure rise as in primary open angle glaucoma.

Low Tension Glaucoma. This condition is not well understood. The optic nerve head disc shows signs of glaucoma damage but the eye pressure is within a normal range. A possible cause of this may be a compromised blood flow to the optic nerve head.

**Secondary Glaucomas.** In primary glaucoma the cause of the glaucoma is not truly known but for secondary glaucoma the cause of the elevated pressure can be found.

Secondary glaucoma can be caused by:

Pigmentary dispersion syndrome, where pigmentary material, usually from the iris, clogs up the drainage angle and causes increased eye pressure

Pseudoexfoliation, where exfoliative material accumulates on the anterior lens surface, the pupillary margin, and the trabecular meshwork. This material restricts drainage of aqueous fluid and causes increased eye pressure

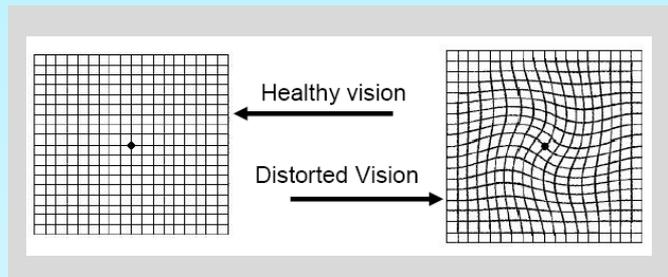
Trauma to the eye resulting in damage to the drainage angle.

Underlying ocular conditions: uveitis, retinal blood vessel occlusions

Medications, particularly with steroid use.

Using an Amsler grid you can test the amount of central vision affected and whether any distortions are present.

While the main risk factor for AMD is age, it can appear earlier and progress faster in smokers, those with high cholesterol and vascular disease. Those with immediate family members who have AMD are at a higher risk of developing the condition, and women appear to be at greater risk than men.



### Age-related Macular Degeneration

AMD is a disease associated with aging that gradually destroys sharp, central vision. In some cases, AMD advances so slowly that people notice little change in their vision. In others, the disease progresses faster and may lead to a loss of vision in both eyes. AMD occurs in two forms: wet and dry. It is the leading cause of severe vision loss among the elderly and approximately 25-30% of those aged over 75 show some signs of AMD.

Around 90% of people with AMD have the 'dry' type. This is a very slow degeneration of the macula and central vision slowly becomes worse over a long period of time. 'Wet' AMD is much less common; however vision can rapidly deteriorate. As the retina is starved of oxygen, chemicals are released to stimulate the growth of new blood vessels to resupply the retina with oxygen. These new blood vessels tend to be fragile and can leak. These leakages can cause severe and sudden vision loss.

The most common symptom is the gradual blurring of central vision; it can be more severe in one eye. Clarity of vision can also fluctuate greatly with the level of lighting. The development of dry or wet AMD occurs without causing any pain. Wet AMD can also cause disturbances to vision as the new blood vessels form a blister underneath the retina. This can mean straight lines appear wavy, broken, or distorted.

### Diabetic Eye Disease

Diabetic eye disease is a leading cause of preventable blindness in the adult population.

The early signs of diabetic retinopathy are quite common amongst those with diabetes. Often, these changes are minor (non sight threatening) but require regular monitoring and their presence means special attention should be given to blood glucose control and treatment of other medical conditions such as blood pressure and abnormal cholesterol levels.

In the retina itself, diabetes causes the walls of the smallest blood vessels to weaken resulting in balloon like bulges called MICROANEURYSMS. Bleeding from these tiny blood vessels, (RETINAL HAEMORRHAGES) or leakage of fats (HARD EXUDATES) and fluid (RETINAL OEDEMA) into the surrounding tissues may occur. If this leakage of fluid into the retinal tissue occurs at the macula (MACULA OEDEMA), vision will be reduced

In some cases, the early signs of diabetic retinopathy progress to a more severe form of eye disease called PROLIFERATIVE RETINOPATHY. If untreated, 50% of those affected will suffer serious visual loss. This stage is marked by the growth of very fine delicate new blood vessels (NEOVASCULARISATION) which bleed very easily. This bleeding causes varying amounts of visual loss and it may take considerable time for the vision to return.



For people with poor vision, whatever the cause, the effects combined with poor health and conditions such as impaired hearing or arthritis increased the risk of suicide by 18%, according to a report in the July 2008 *Archives of Ophthalmology*.

The psychosocial and health consequences of impaired vision included difficulty with activities of daily living, social isolation, cognitive impairment, poor functional status, increased dependency on others, increased risk of motor vehicle crashes, falls and fractures, poor self-reported health, and depression, the researchers wrote.

An increased overall mortality risk has also been noted in adults with visual impairment and disabling eye disease, they added.

The researchers reviewed data from National Health Interview Surveys (1986-1996) including data on 137,479 non-institutionalized adults.

Verified deaths of participants up to 2002 were reported through the National Death Index. Structural equation modeling was used to determine the relationship between reported visual impairment and suicide.

During a mean 11 years of follow-up, there were 200 suicides.

After controlling for survey design, age, sex, race, marital status, number of non-ocular health conditions, and self-rated health, the direct effect of visual impairment on death from suicide was elevated but not significant (hazard ratio 1.50, 95% confidence interval 0.90 to 2.49).

However, the approximate indirect effect of visual impairment on suicide via poorer self-rated health was a significant 5% (HR 1.05, 95% CI 1.02 to 1.08).

The combined indirect effects of visual impairment resulting from poorer self-reported health and a higher number of non-ocular conditions increased the risk of suicide by a significant 18% (HR 1.18, 95% CI 1.07 to 1.29).

Overall, men, those with poorer self-rated health, and those with two or more non-ocular health conditions had a higher suicide risk.

Compared with whites, African-Americans had a lower risk, as did married participants compared with those who were single, divorced, or widowed.

Up to two-thirds of those who commit suicide have some type of physician contact in their last month of life, the researchers said, and physician education can be effective in reducing suicide rates.

General Practitioners should be aware of the potential increased risk of suicide for visually impaired patients, especially those in poor health, and should provide appropriate referrals for .

These results, they added, suggest that improved treatment for visual impairment and factors causing poor health could potentially reduce the suicide risk.