Eyelights

The Newsletter of GLAUCOMA NZ TO SAVE SIGHT

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From the Chair of Glaucoma NZ

It is my great pleasure to bring you *Eyelights*, the regular Newsletter of Glaucoma NZ. *Eyelights* aims to inform all who are interested about glaucoma: the number one preventable cause of blindness in our community. Topics such as how glaucoma is detected, monitored and treated, how visual loss can be prevented, and how you can best live with glaucoma and its treatment in your everyday life will be addressed.

Each newsletter will have regular features that commence in this issue as well as their own special features I am confident you will find *Eyelights* both informative and fascinating.

Dr Ken Tarr
Chairperson
Glaucoma NZ

About Glaucoma New Zealand

Why should we have a charitable trust just for glaucoma?

Firstly, because glaucoma is the number one preventable blinding eye disease in New Zealand. Once the diagnosis of glaucoma is made it is there for life. Every stage of glaucoma has its unique challenges and people with glaucoma face many different decisions over a lifetime. Glaucoma NZ is here to complement the professional care you receive from your optometrist or eye specialist and help in providing information and support to people with glaucoma.

Glaucoma NZ is an organization run by New Zealanders for people living in New Zealand

Secondly, damage from glaucoma is irreversible. So early detection is the best method of preventing blindness. This requires an enhanced awareness of glaucoma in our community. Half of the people with glaucoma in New Zealand are unaware they have the disease. We hope to change this disturbing fact.

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Inside this issue:

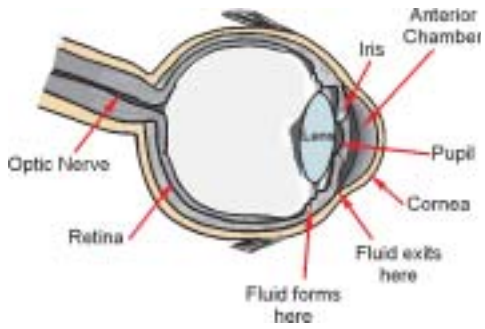
What is Glaucoma?

Glaucoma is an eye disease in which the normal fluid pressure inside the eye rises, leading to vision loss - or even blindness. However, some eyes are damaged by pressure that is within the normal range for the entire population.

At the front of the eye, there is a small space called the anterior chamber. Clear fluid flows in and out of the chamber to bathe and nourish nearby tissues. The balance between how much fluid is made and how much fluid leaves the eye determines the pressure in the eye. If all is working well, the fluid made inside the eye equals the amount of fluid leaving the eye, and the intraocular pressure is normal. In glaucoma, for still unknown reasons, the fluid drains too slowly out of the eye. As the fluid builds up, the pressure inside the eye rises.

What harm does high pressure do to an eye? The weakest and most delicate structure of the eye is the optic nerve. Unless high pressure in the eye is controlled, it may cause damage to the optic nerve which is at the back of the eye.

The optic nerve cells' job is to transform the light entering the eye into electrical impulses that can be understood by the brain. Every person has a different pressure to which his or her eye is sensitive. Some eyes are damaged at lower pressures than other eyes. The exact reasons for this remain unclear.The optic nerve cells become damaged when the pressure is too high for the nerve cells in that particular eye to tolerate. If enough of these cells die then some vision may be lost. At first, there are no symptoms. Vision stays normal, and there is no pain. Subsequently, as the cells die vision is slowly lost forever.



Who has Glaucoma?

Glaucoma is the leading cause of preventable blindness in New Zealand as it is in other developed countries. But because there are no symptoms associated with glaucoma, 50% of people with glaucoma are unaware they have the disease. Glaucoma may occur at any age but happens with increasing frequency during advancing years. Approximately 2% of the New Zealand population over the age of 40 are affected, while 10% over the age of 70 have glaucoma.

Some people have a higher chance of developing glaucoma and future newsletters will include more information about high risk categories.

New Zealanders who have a higher risk of developing glaucoma include those with:

- A family history of glaucoma
- Myopia: short-sightedness
- Thyroid disease
- Diabetes
- High blood pressure

Glaucoma Treatments

Although glaucoma cannot be cured, it can be controlled if it is detected and treated early. Glaucoma can be treated with eye drops, pills, laser surgery, eye operations, or a combination of methods. The whole purpose of treatment is to prevent further loss of vision by lowering the pressure inside the eye. The pressure can be lowered by either helping the fluid to drain from the eye and/or decreasing the amount of fluid that is produced in the eye.

Medications must be taken on a daily, regular basis

Glaucoma medications come in different strengths and combinations. Doctors try to use the smallest amount of medication that offers you the best results with the fewest side effects.

Sometimes several medications that complement each other are necessary to reduce the pressure adequately. Medications must be taken on a daily, regular basis to control the pressure in your eye. You will need to use the drops and/or pills as long as they help to control your eye pressure.

This is very important.

Once initiated treatment of glaucoma with eye drops is life-long. There are different families of glaucoma medications. Within each family there may be more than one member. These will be discussed in detail in subsequent editions.

Understanding our Vision

"I can see the one tree on the distant hill. My sight is perfect! Why am I not allowed to drive?" cries the distraught patient.

Understanding our vision is important to everyone in our busy world. Our eyesight has a number of different elements. Seeing small details either far away or up close is often the only measure of "good sight" that we talk about. This element of our vision is called visual acuity and is tested by reading down the sight chart. However, other aspects of our vision may be equally or even more important. These include the visual field or surround vision, colour vision, the ability to adjust to a dark environment, detecting moving objects and achieving good depth perception.

Glaucoma most often initially affects the surround vision rather than the central visual acuity. This is one reason why glaucoma often goes unnoticed. It is also why the patient quoted above cannot drive. The patient has insufficient surround vision to drive safely or meet New Zealand's legal requirements for driving. In future *Eyelights* we will look at each one of these elements of our eyesight and how they are affected by glaucoma, how we can lose different elements of our vision, and how this affects our lives.

Focus on Research - Neuroprotection Theory

For more than a century, glaucoma treatment has been directed at lowering intraocular pressure. Recent research is working on a theory that if the optic nerve cells can be 'protected' they will be able to withstand the stress of pressure better. This theory is called Neuroprotection. Neuroprotection has emerged as a consequence of many new discoveries in the fields of genetics, neurobiology, and pharmacology. The theory of neuroprotection is to make the nerve cells more robust and to transform the hostile environment created by high pressure to a healthy one.

Neuroprotection may be an important part of treatment for glaucoma in the future

In order for optic nerve cells to function properly they need to be able to receive specific nutrients and oxygen and dispose of the wastes they produce. The cells need growth factors and essential chemicals in the correct proportion or they begin to malfunction. Once cells are damaged several vicious cycles come into play that may make the optic nerve cells more susceptible to further damage.

Neuroprotection is aimed at strengthening the optic nerve cells by addressing the imbalance in the way optic nerve cells function.

1. Too much of a good thing:

Some substances are essential for cell functioning. However, if these are present in excess they can overexcite the cell and literally excite the cells to death. One such substance is glutamate. Currently, it is not known what stimulates the increase in glutamate in glaucoma. It is possible that any type of damage, such as glaucoma itself, may result in glutamate release. However, if glutamate release can be controlled, then perhaps it may be possible to prevent the cells from dying.

2. Too little

The optic nerve cells that are affected by glaucoma have a decreased supply of crucial growth factors, such as brain-derived neurotrophic factor. Research is aimed at trying to provide additional supply of such growth factors to strengthen the cell.

3. Preventing cell suicide

One of the ways in which optic nerve cells die is by a process of 'cell suicide'- known as apoptosis. Once cells receive a message to 'commit suicide' they die often prematurely. Research is aimed at delaying or preventing such messages resulting in cell death.

At the present time there is no proof that there is any way to protect the nerves of patients with glaucoma other than lowering the pressure within the eye. However, we are at the beginning of exciting times in the development of this area of neuroprotection. Neuroprotection may be an important part of treatment for glaucoma in the future.

Now That I Have Glaucoma

"Now that I have been told I have glaucoma, what can I expect?"
This question has to enter the mind of every person who has just learned they have glaucoma. It may be a sufficiently frightening question that the person never speaks it aloud. And it's the sort of question that most physicians dread, because it asks for projections that are extremely difficult to make. Nevertheless the question is the right one for patients to ask, and it is an essential one for optometrists and eye specialists to discuss with a patient.

Remain vigilant
Except for a few types of glaucoma, the tendency for glaucoma to cause continuing damage remains with the person for life. The most important thing to do is to keep your regular appointments and follow your doctor's instructions.

Be ready for regular eye examinations
Your optometrist or eye specialist will perform regular investigations that are necessary to determine if your glaucoma is getting worse. These include measuring the pressure in the eye, a test of your side vision, and an examination of the optic nerve. The determination of whether a test really does represent a deterioration or an improvement is frequently an extraordinarily difficult determination and should not be made lightly by either the physician or the patient.

Be prepared to make trade-offs
The person who has a serious glaucoma, in which the optic nerve already has become damaged, must realize that they are going to have to make trade-offs. Using drops is a nuisance; the vision is temporarily blurred, it's not comfortable to have to leave a meeting to go into the bathroom to use one's drops, etc. But if one has the type of glaucoma that is going to get worse, and the glaucoma is being controlled with medications, either one uses the drops or the glaucoma gets worse.

About Glaucoma New Zealand continued

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Finally, Glaucoma NZ is an organization run by New Zealanders for people living in New Zealand - focused purely on one group of eye diseases - glaucoma. We hope that this intense focus will allow us to successfully address the unique obstacles and opportunities we face in dealing with glaucoma in New Zealand.

We hope to achieve our goals through

- *Eyelights* - our regular Newsletter
- Public awareness campaign
- Local and regular educational public meetings
- Establishment of a National Office
- Information packet, videos, tapes and other material about glaucoma
- Website
- Updates on developments in glaucoma.
- Supporting glaucoma research in NZ

As we grow, through your support and the generous support of our sponsors, we will be able to further develop the ways we can contribute to preventing suffering and blindness from glaucoma.

Do's and Don'ts about your Drops

Do I have to get up at night to take my eye drops?
No. An undisturbed night is more important, but if prescribed for use three or more times daily, it is usually desirable to put them in last thing at night and as soon as you wake up in the morning.

If I have two lots of drops due at the same time, can I put them in together?
It is probably best to allow ten minutes between drops to avoid one drop washing out the previous one. Ask your eye specialist for specific advice about the drops you are taking.

Do I need to put the drops in before I come to the clinic?
Yes. Always continue as usual unless requested otherwise. It helps the doctor to judge the effect of the treatment.

Does it matter if I put more drops into my eye than I should?
No, not usually. But your doctor will have prescribed you the optimal dosage for the medication you are using. If you are unsure whether the drops actually get in your eye, it may be useful to keep the drops in the refrigerator. You should feel the 'cold' of the drops and can be sure they have gone in.

How important is it to put the drops in at exactly the time stated?
It is obviously better to keep to the correct times, but in most cases it is better not to worry if circumstances occasionally make this difficult. In most circumstances, as long as you get the drops in within a few hours on either side of what you normally do, no harm will come. You may find a treatment chart or a box with compartments for the drop bottles useful in helping you to remember. Some drop bottle tops have a useful device that indicates whether it is the first or second drop to be used.

What happens if I forget to put my drops in?
Put them in as soon as you remember and do not worry about it unduly. Nevertheless make a determined effort to use them regularly and without fail.

Why do I have to use the drops continually?
The effect of each dose of drops lasts for only a limited time. If the drops are not continuously used the pressure will creep back up again.

If I go on holiday, particularly to a warm climate, and there is no 'fridge', where should I keep the drops?
In a cool place out of the light. An insulated pouch helps to keep the drops cool.

Can I take other medicines at the same time as my glaucoma treatment?
Patients with certain types of glaucoma should have advice before taking some types of medications. Always mention to both your general practitioner and your eye specialist all the medications that you are taking and your doctor will advise you. As the effect of other medication depends on the type of glaucoma, it is not possible to supply a list of medications with possible adverse effects that is generally applicable.

Myths and Legends that Blind Us

We often sense that a belief is something fundamental and personal but there are many "minor" ideas that we hold to fervently. Yet, we have never considered why we have them or whether they have substance or whether they don't. Such ideas ingrained in our lives influence our daily decisions. We just act on these "minor beliefs". Often we act without any thought as to why we do it. In the world of eyecare, there are many of these "minor beliefs" and they have become entrenched in our community. Often they prevent us having the quality of life and the best of care that we could otherwise have. The following are some glaucoma myths. Many more eyecare myths will be explained in future issues of *Eyelights* so that you can make the best decisions for yourself in an informed way

Myth #1

Glaucoma is a disease that only happens to older people.

The Truth

Everyone is at risk for glaucoma from babies to senior citizens. Yes, older people are at a higher risk for glaucoma but babies get glaucoma (approximately 1 out of every 10,000 babies born have glaucoma) as well as young adults.

Myth #2

Glaucoma is curable.

The Truth

Glaucoma is not curable, however, it is manageable. But first it must be diagnosed. Often glaucoma can be managed with medication and/or surgery. This means that further loss of vision may be halted. However, glaucoma is a chronic disease that must be treated for life.

Myth #3

There are symptoms that will warn you of glaucoma.

The Truth

With the most common form of glaucoma, open angle glaucoma, there are virtually no symptoms. There is usually no pain involved with the rise in eye pressure. Loss of vision begins with peripheral or side vision. The best way to protect your sight from glaucoma is to be tested so that if you have glaucoma, treatment can begin immediately.

Myth #4

Glaucoma does not cause blindness.

The Truth

Glaucoma can in fact cause blindness if it is left untreated. And unfortunately approximately 10% of people with glaucoma who receive proper treatment still experience loss of vision.

Contact Us with Your Questions & Comments

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YES, I would like to help GLAUCOMA NZ TO SAVE SIGHT

☐ I would like to donate $____

☐ I would like to become a member of Glaucoma NZ for the current financial year

$40 individual membership

I enclose my cheque for $____ made payable to Glaucoma NZ or please debit my

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Donations of $5.00 or more are tax deductible

☐ I am interested in becoming a volunteer for Glaucoma NZ

☐ I would like information on leaving a bequest for Glaucoma NZ

Public Meetings and Glaucoma New Zealand

One of the main functions of Glaucoma NZ is to inform the general public about glaucoma, what it is, what it does and how to prevent blindness as a consequence of it. We are hoping that public meetings will be held in all centres in New Zealand on a regular basis.

The meetings will be conducted by ophthalmologists who are experts in glaucoma. They will give people who have glaucoma, their family, friends and any interested members of the public, an opportunity to learn more about glaucoma and have a chance to ask questions.

There will be an opportunity to meet others who have glaucoma to provide support and share experiences. For many people it is quite a relief to realize that they are not the only one having to deal with this condition and it can be very reassuring to see how many other people, in all walks of life, are managing with glaucoma.

Glaucoma NZ hope that the meetings will encourage people to have their eyes screened for glaucoma, as well as to educate family and friends, so that everyone at risk of getting glaucoma arranges an eye check.

The Trustees and Sponsors of GLAUCOMA NZ TO SAVE SIGHT

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