

Eyelights

The Newsletter of **GLAUCOMA NZ**
TO SAVE SIGHT

About Glaucoma New Zealand

Glaucoma NZ has been very active since your last Eyelights. Glaucoma NZ was presented to the annual conference of eye specialists in May and to the annual conference of optometrists in October.



We started our public meeting schedule in September with many more planned for 2004. Watch out for one in your area.

Shortly the Glaucoma NZ web site will be active to share information with you and also to be used in educational workshops for professionals.

Public Meetings and Glaucoma New Zealand

Glaucoma NZ has held two public meetings recently. The first was in Tauranga on 20th September where nearly 100 people came to listen to Dr Jim Stewart, an ophthalmologist from Hamilton. The second meeting was held in Nelson on 4th October where Dr John Davison spoke to 70 people. There was a question time at the end of both meetings which allowed people to ask further questions about the symptoms, diagnosis and treatment of glaucoma.

Both Tauranga and Nelson Lions Clubs supported Glaucoma NZ by the prior distribution of

posters to Opticians, Pharmacies, and GP's in the area. Lions Club Members also helped served light refreshments after the meetings and discussion continued for some time over tea and coffee on the day to day aspects of living with glaucoma. Feedback from those attending the meetings has been very positive and many took the opportunity to become members of Glaucoma NZ.

Further meeting this year will be held in Palmerston North on 15th November, Hamilton on 22nd November, and in Napier on 6th December.

Volume 1, Issue 2
November 1st 2003

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What is Normal Tension Glaucoma (NTG)

Glaucoma is a group of eye diseases that usually share common traits, such as high intraocular pressure (IOP or eye pressure), damage to the optic nerve and gradual sight loss. Most kinds of glaucoma involve elevated eye pressure. However, glaucoma can sometimes strike without any increase in eye pressure. In general, a “normal” pressure range is between 10-21 mm Hg.

How does normal tension glaucoma differ from “regular” glaucoma?

Normal tension glaucoma is also known as low tension glaucoma or normal pressure glaucoma. In this type of glaucoma, the optic nerve is damaged even though intraocular pressure (IOP) is not very high. Doctors do not know why some people’s optic nerves are damaged even though they have what is considered to be “normal” (between 12-22 mm Hg) pressure levels.

Those at higher risk for this form of glaucoma include:

1. Family history of normal tension glaucoma
2. Japanese ancestry
3. People who suffer from migraines.
4. History of heart disease, such as irregular heart rhythm

5. People who have Raynaud’s phenomena (poor circulation in hands or feet).
6. History of significant blood loss.

A large international research study, the Collaborative NTG Study, studied this particular type of glaucoma. The results showed that eye drops that lower pressure were effective even in cases of normal tension glaucoma. Currently, most doctors treat normal tension glaucoma by keeping normal eye pressures as low as possible with medicines, laser surgery, or other surgery. Lowering pressure is not the complete answer. There may be some factors, other than eye pressure, that can damage the optic nerve or make the nerve more susceptible to eye pressure, and these factors remain to be determined.

The study also showed that normal pressure glaucoma tends to progress slowly. If someone with NTG is progressing very slowly or has no measurable progression, the benefits of lowering their eye pressure will have to be considered very carefully, since the patient may be exposed to the risks and side effects of the various treatment options.

BMW Auckland Marathon

Who has Glaucoma?

Family History

Despite many years of research, we do not know why glaucoma develops in some people and not in others. However, we do know that a family history of glaucoma is a risk factor for developing glaucoma. It is believed that someone with a close family history (sibling, parent or child) of glaucoma is 3-10 times more likely to develop glaucoma. Your risk is highest if you have a sibling with glaucoma. In a recent study from Germany it has been suggested that patients who knew of a family history of glaucoma were diagnosed earlier than those who didn’t. The results show that an awareness of the disease is connected with early detection. People who realise they have a family history of glaucoma are more likely to be proactive in their eye care and get regular check-ups.

What can you do?

1. Regular eye checks

There is no accepted international protocol for when a person should be checked for glaucoma. We recommend that everyone have an eye examination by their optometrist after they reach the age of 40. The frequency of subsequent checks depends on age, race, medical history, family history, and other factors.

2. Inform your siblings, children and other relatives that there is a family history of glaucoma and they should have their eyes checked.



Focus on Research: The Role of Blood Flow in Optic Nerve Damage

Over the past 20 years, a variety of investigators have performed extensive studies, some of which have indicated that spasm of the blood vessels that provide blood to the optic nerve may be responsible for glaucoma in some patients. Some individuals, such as those with migraine, are predisposed to this type of spasm. It has been known for quite a few years that patients with migraine are predisposed to “normal pressure” glaucoma. Studies have also shown that blood flow disturbance generally seems to be more pronounced in normal tension compared to high tension glaucoma. Furthermore, blood flow reduction is more pronounced in patients that show progressive

damage from glaucoma compared to patients who are stable.

More recently, work at the University of Indiana and Wills Eye Hospital in Philadelphia, has used new technology that permits visualization of blood vessels of the eye. Based on this technology, they have described different patterns of blood-flow abnormality in different types of glaucoma. It has also been shown that lowering the pressure inside the eye improved the blood flow in patients with glaucoma. In another study, they related the amount of damage to the optic nerve in patients with glaucoma to the amount of abnormality of blood flow.

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Glaucoma Treatments

Eye drops: Beta-blockers

There are several different specific drugs in this family of eye drops including:

1. Timolol
2. Betagan
3. Betaxolol

- These drugs decrease the pressure in the eye primarily by decreasing the production of fluid in the eye. Beta-blockers are used either once or twice a day. They may cause temporary burning or stinging of eyes just after being instilled. However, local allergic reactions are uncommon.
- Other side-effects include:
 - Shortness of breath- especially in people with asthma or predisposed to asthma.
 - Difficulty tolerating exercise- this can occur because beta-blockers decrease heart rate and prevent it increasing during exercise.
 - Dizziness and fainting upon changing posture-especially in people with low blood pressure.
 - Localised skin rash
 - Depression/Anxiety

- Impotence
- Nightmares/Insomnia (rarely)
- Fatigue and weakness

One should not become neurotic when reading about possible side effects of a drug, such as those listed on the package insert. You may not get any side effects at all. If you do, it may only be a minor bother. Serious side effects are rare. If they weren't, we wouldn't be using the drugs in the first place. Sometimes the only way to prove that a side effect, particularly a subjective one such as anxiety, depression, or vivid dreams, is due to the medication is to stop using it, wait for the reaction to go away, and try it again. This is known as retesting. If you think you have an unusual reaction to a drug, mention it to your physician

Focus on Research: continued

The Future

While we now know a fair amount about the relationship between blood flow in the eye and glaucoma, investigators have a long way to go. A comprehensive understanding of the various mechanisms by which the optic nerve becomes damaged in glaucoma still remains

to be established. Once these are known, physicians will be in a far better position to help each individual patient. As this new knowledge unfolds, we will see very exciting changes resulting in significant improvements in patient care.

Understanding Visual Field Testing

The retina, the light-sensitive tissue at the back of the eye, is composed of receptors, "photoreceptors", that change light energy into electrical energy.

The central area of the retina is the most sensitive to light, and we see best what is directly in front of us. The more peripheral areas of the retina are less sensitive to light, but they allow us to see, though less clearly, objects off to the side or above or below our straight-ahead vision. Just how much we can see of the world around us is known as our *visual field*. Glaucoma first damages our visual field.

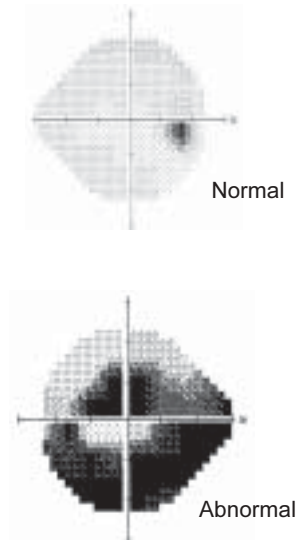
Glaucoma is a process by which the optic nerve cells can become damaged and die. It is these cells that transmit the electrical signals of the eye to the brain. There are millions of these cells, and one can lose perhaps as many as 40% of them before being aware of any visual loss. In fact a small number of cells die every year "naturally."

Visual field tests are designed to map a person's visual field; to document the extent of peripheral vision. As most glaucoma patients know, the test consists basically of responding every time a flash of light is perceived, all the while looking straight ahead.

The ideal visual field test would be easy to take, easy to administer, and 100% reliable. We have no such test, but fortunately for everyone involved, recent years have seen substantial improvements in all of these areas. Especially welcome to the glaucoma patient are tests that are faster and less tedious.

A nice picture of a patient's visual field is obtained by assigning a lighter shade of gray to spots on the visual field in which a patient

could see relatively weak flashes and a darker shade of gray to spots in which a patient could see only relatively strong flashes. Here it is appropriate to point out that all eyes have a blind spot (scotoma) where the optic nerve connects with the retina. It is "blind" because there are no light receptors at this point.



However if doctors relied only on a reduced visual field to detect glaucoma, they would miss most people with early glaucoma. That is why field-testing is only one part of a glaucoma evaluation. The visual field is important to diagnose and categorize glaucoma, to help create treatment plans, and to establish a baseline for future comparison. If doctors suspect a person may have glaucoma a visual field test may help confirm or rule out glaucoma. The visual field provides essential information about whether the glaucoma is stable or is getting worse.

Some Questions Answered

If Glaucoma has no symptoms- why does it need to be treated?

The whole purpose of treatment of glaucoma is to prevent further loss of vision before symptoms develop. Because vision lost from glaucoma is IRREVERSIBLE. Glaucoma treatment is aimed at lowering the pressure in the eye. But this will not restore lost vision, only prevent further vision from being lost.

Why do I have to use my eye drops permanently ?

In order to prevent visual loss from glaucoma, the pressure must be constantly controlled. This requires taking medications chronically. If a drop is given four times a day, it is because the effect of the drop only lasts about 6 hours. Drops given twice a day have a "duration of action" of about 12 hours. If the drops are not used continuously their effect wears off and the pressure rises again.

Why have I been advised to 'push on the corner' of my eye after putting in an eye drop?

The corner of the eye is the site where the tears drain into the nose. When an eye drop is put on the eye some of it enters the puncta or the little hole in the eyelid at the corner of the eye that drains the tears to the nose. Occlusion of the punta will result in more of the drop getting into the eye and less into the blood stream, resulting in more effective treatment. Punctal occlusion and proper drop instillation are very important.



What is a 'side effect' of medications?

A side effect is any action produced by a drug beyond the intended one of lowering the eye pressure. Some patients have no side effects whatsoever, while others find the side effects so severe they are not able to tolerate the eye drops. Why a drug causes side effects in some persons and not others or why the same side effect of the same drug is severe in one person and mild in another are poorly understood.

One of the most difficult problems faced by glaucoma patients is that of having to take medications to control a disease that is usually painless and has no symptoms. It is important to tell your doctor of any new health problems or concerns that develop since starting a new medication. Your doctor will inform you if it is a known side effect of the drug you are taking. What you should not do is skip taking the medications and lose vision because of side effects.

Are my eye drops suppose to sting when I put them in?

All drops may cause some burning or stinging when instilled. Often, this effect is due not to the drug but to the antibacterial preservatives in the solution. It is rarely intolerable and can be used to advantage, since it lets the patient know that the drop got into the eye.



Glaucoma and Lifestyle : What's true. What's not.

No conclusive studies prove a connection between specific foods and glaucoma, but it is reasonable to assume that what you eat and drink and your general health have an effect on the disease.

Good Nutrition

The ideal way to ensure a proper supply of essential vitamins and minerals is by eating a balanced diet. If you are concerned about your own diet, you may want to consult with your doctor about taking a multivitamin or multimineral nutritional supplement.

Some of the vitamins and minerals important to the eye include zinc and copper, antioxidant vitamins C, E, and A (as beta carotene), and selenium, an antioxidant mineral. While no disease in humans has been proven to arise as a result of vitamin E deficiency, vitamin E added to regular glaucoma medication improved visual fields in a majority of patients studied.



Caffeine

Some studies have shown that significant caffeine intake over a short time can slightly elevate pressure for one to three hours. However, other studies indicate that caffeine has no meaningful impact on pressure. To be safe, people with glaucoma are advised to limit their caffeine intake to moderate levels.

Ginkgo Biloba

Ginkgo biloba is a leaf from a Jurassic plant. It does not lower the pressure in the eye. However, there is preliminary research that ginkgo biloba enhances blood flow and reduces vasospasm. It may also improve pre-existing visual field damage in some patients with normal tension glaucoma (NTG). The effect of Ginkgo biloba extract as a potential antiglaucoma therapy deserves further investigation.

Dangers of Generalization

One of the serious errors with regard to glaucoma has been oversimplifying the condition. It is a serious mistake to consider one mechanism of glaucoma damage applicable to everybody. So also is it a serious error to generalize regarding specific aspects of lifestyle or therapy.

Patients frequently ask whether they should stop drinking coffee or stop drinking large amounts of water. The proper answer is almost certainly that there is no single answer, with the exception of avoiding obvious excesses. Those things that predispose to the health of the body probably predispose to the health of the eye as well.

Contact Us with Your Questions & Comments

Glaucoma New Zealand
Department of Ophthalmology
The University of Auckland
Private Bag 92019
Auckland 1, New Zealand

Telephone: 64 9 373 8779
Facsimile: 64 9 373 7947
www.glaucoma.org.nz
Email: info@glaucoma.org.nz

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I am interested in becoming a volunteer for Glaucoma NZ

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Hint for Using Eye Drops

1. Spread your drops out through the day:

If a drop is prescribed to be used twice a day, try to space them by 12 hours. Any 12 hour period that is convenient for you is perfectly acceptable. If the drop is prescribed three times a day, it should be every eight hours. If you sleep more than eight hours, use the drop upon awakening, approximately 2:30 in the afternoon, and again just prior to sleep.

2. Wait between inserting more than one drop:

When multiple drops are used in the same eye, it is important to wait at least 5 minutes between drops. Waiting longer is O.K but if you put the drops in too close together, the second drop may wash out the first.

3. Put pressure on the corner of your eye.

4. Close your eye after putting drop in:

the drops work best if you keep your eye closed for around two minutes without blinking. This helps the solution to be absorbed directly into the eye and will also prevent getting some side effects.

5. Make sure you don't run out of drops:

When glaucoma medicines are prescribed, it is expected that you will use them until your doctor tells you they may be discontinued. If you are running low on drops and need a refill, please call your doctor.

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