The big three problems of the aging New Zealand eye are cataract, glaucoma and macular degeneration. All can lead to blindness, but when you look into it they are very different to each other, and are distinct diseases. However in the case of “cataract” there is an important overlap with glaucoma.

**Cataract – Lensitis**

“Cataract” can be an unhelpful word. The terminology often fights against explanations. In the grammar of disease, cataract is an irregular. After all, it means waterfall.

Most diseases have the suffix –itis. You will notice that cataract has not got an –itis. What does –itis mean?

In the old days long before the oldest reader was alive, doctors were busy describing anatomy in great detail and writing their observations in Latin or Greek. Doctors were also describing diseases and given that the reasons for disease were poorly understood, diseases could at least be described by the body part the disease affected. It is a simple matter to take the name of the sick anatomical structure and add –itis to denote disease of that bit whatever it is.

What anatomical structure are we talking about? It is the lens. Each eye has a lens. It is located immediately behind the pupil and focuses light onto the retina. The human lens looks a bit like a man-made lens, such as you would find in a magnifying glass or a camera. The lens is a specialized cellular tissue and cells are added to it throughout life. This means that the lens gets bigger and heavier as you age. In childhood it is about 3mm thick and in a 70 year old it may be 5-6mm thick. The lens has some truly amazing properties.

Firstly it focuses light from the object you are looking at onto the macula. If the object you are observing is close
to you the lens relaxes and takes up a more globular shape, reducing its dioptric power and bending the light in further. If the object is distant the lens changes its shape to take up a flatter profile. Less bending power is required to see the distant object.

Secondly the lens is transparent. This means it must not have a blood supply, blood being opaque. The lens takes oxygen and nutrition directly from the specialized eye fluid that surrounds it. Obviously the lens is exposed to lots of light, amounts of light that would fade the best fabrics, so it must protect itself from light damage. “Light damage” happens when oxygen and light combine to form oxidizing “radicals” which injure normal tissue. Oxygen concentrations around the lens are kept deliberately low. The cornea through which the incoming radiation passes first filters out 100% of the high-energy ultraviolet light, so the light passing through the lens is low-energy light. Finally the cells in the lens are totally packed with antioxidant defense enzymes. These are Selenium Dismutase, Iron Catalase and Copper Peroxidases. Gradually with age the protective mechanisms are overwhelmed and the fabric of the lens is altered.

What happens when the lens gets older and sick? Let’s call it “lensitis”. The first consequence of lensitis is focusing malfunction. The lens loses its supple texture and stiffens. When this happens you find that you can no longer focus on things up close. Reading glasses are needed to add the necessary bending power and you feel like you are getting old even though you are only 40 something. It doesn’t stop; the stiffening and subtle enlargement of the lens continues and over the ensuing 20 years gradually the power of the specs are increased and glasses may become necessary to see distant objects too. Glasses are always an option for correcting the focusing problems of lensitis.

Another consequence of lensitis is the gradual loss of transparency. The lens takes on a yellow hue from about the age of 40 and this yellowness gets progressively darker. Sometimes sections of the lens can become opaque while other parts remain transparent. This has the effect of scattering the light and may cause glare in certain types of light. Glasses are an option for treatment because the focusing of the transparent bits of the lens can be improved to make the most of what is good and tints can be added to control the incoming light. A further treatment option for lensitis is to surgically remove the lens and replace it with a clear plastic lens. That is a lens operation and implant.

Lensisitis is also responsible for angle closure glaucoma. The average eye is not very large, only 24mm in diameter. It stays the same size throughout life. But remember that the lens slowly increases in size and weight. This is especially important for long-sighted people whose eyes are shorter than average (20-22mm). The reason is that in short eyes the increasing size of the lens puts pressure on the plumbing of the eye and can obstruct the free circulation of eye fluid, sometimes suddenly. A very good treatment (or prevention) for angle closure glaucoma is to remove the enlarged human lens surgically and replace it with a clear plastic lens. Artificial lenses are much thinner than natural human lenses. People who have had modern lens surgery will never get angle closure glaucoma because there is always plenty of room for the free flow of eye fluid in eyes that have an artificial lens.

There is ample scope for confusion when the surgeon says, “You have glaucoma, and need a cataract operation”. Now when the surgeon says, “You have lensitis causing obstruction of fluid flow in your eye and you need a lens operation”, the confusion will disperse swiftly like the ephemeral mist hiding the beauty of the cataracts beyond.

### For New Readers

**To those of you who have joined Glaucoma NZ since the last issue of Eyelights, we welcome you!**

**For your information here are some basic facts about glaucoma:**

**People of all ages can get glaucoma.**

There are different types of glaucoma, but they all involve damage to the optic nerve, the nerve of sight, which is at the back of the eye.

Glucoma is not curable.

If you have glaucoma it must be monitored for the rest of your life.

A family history of glaucoma means you are at much greater risk of developing glaucoma.

Current treatments for glaucoma aim to lower eye pressure.

Medication in eye drops can have side effects on other parts of your body. Tell your eye specialist if you notice any change in your general well-being since you started the eye drops.

If you have glaucoma tell your relatives, especially those close relatives like sisters, brothers and adult children. They have an increased risk of developing glaucoma so advise them to have an eye examination.

Glucoma NZ is a registered charitable trust which receives no government funding. We rely solely on donations, sponsorship, grants and fundraising. All the information available to you from Glucoma NZ is free.

### Glaucoma NZ Research Grant for Summer Student

University of Otago student, Josh Erceg, has been awarded a grant by Glaucoma NZ to undertake a research project in the Ophthalmology Department at Dunedin Hospital over the summer break.

The project will focus on the recruitment and management of glaucoma patients with the primary aim of gathering data from patients to assess their current disease state, monitoring and treatment, and how the detection of new patients may be improved.

A second aim is to assess whether glaucoma screening in New Zealand is a possibility and whether it might also be incorporated into existing diabetic retinal screening services.

The data collected will be analysed to provide a better understanding of how glaucoma patients are currently being managed in New Zealand, whether this varies by region and if there is room for improvement, both in terms of treatment and the detection of new patients.

Glucoma NZ members may be invited to participate and receive a postal survey as part of this research. Please take the opportunity to assist with this project as the information collected will be vital in providing the required data to improve the management of glaucoma in New Zealand.

Josh, originally from Levin, made the move to Christchurch from Dunedin for his fourth year of tertiary study towards a Bachelor of Medicine and Surgery at the University of Otago. He enjoys music and graphic design outside of class and keeps healthy by running, playing volleyball and tennis. Josh hasn’t yet decided which field he might want to specialise in, but has particularly enjoyed ophthalmology and emergency medicine so far.
On Saturday 22nd September, Glaucoma NZ celebrated 10 years of activities aimed at eliminating blindness from glaucoma with a James Bond themed ‘For Your Eyes Only’ Glam Gala.

Over 170 guests enjoyed an evening of glamour, fine dining and entertainment from MC and singer Frankie Stevens, dancers Shae Mountain and Samantha Gemmell, courtesy of Nerida Cortese, and the St Cuthbert’s College Band ‘Milestone’ who played during the cocktail hour.

Chair of Glaucoma NZ, Prof. Helen Danesh-Meyer spoke on the progress made by the organisation over the past 10 years. She paid tribute to all those who have contributed to GNZ’s success and have helped build awareness of glaucoma in the community. She concluded by saying: “There is no doubt that James Bond was focussed on vision: From titles like ‘For Your Eyes Only’ to ‘A View to a Kill’ but perhaps the goal of GNZ is most aligned with ‘Golden Eye’. After all we want New Zealanders to have great eyesight well into their Golden Years”.

Prof. Charles McGhee gave an entertaining and compelling talk about philanthropy, including his personal experiences, which set the scene for a very successful charity auction.

The Glam Gala was a huge success and thanks to the spirited bidding and generosity of guests, over $45,000 was raised from the auction on the night. These vital funds will go towards helping Glaucoma NZ continue with its sight saving nationwide education and awareness activities.
July 2012 Annual Awareness Appeal

Making a noise about the silent thief
Central Leader, July 27, 2012
By Danielle Street

Photo by Jason Oxenham

Mr Shearer says, “It’s shocking actually.”

Glaucoma is often referred to as the “silent thief” as it has no symptoms, until sight has already been irreversibly damaged.

“Obviously it’s a huge issue for the individual, and it has big knock on effects in terms of our health budget and looking after people who are going blind,” Mr Shearer says.

Early detection is the best way to halt the progression of glaucoma and preserve the patient’s sight.

Glaucoma NZ recommends an eye examination for glaucoma every five years for people over the age of 45, and every three years for people over the age of 60, Executive Manager Helen Mawn says.

“Even people who buy reading glasses from the chemist, if you need reading glasses from the chemist you should probably have a full eye examination,” she says. “People can wear readers for years unaware they’ve got something else going on.”

In most cases if glaucoma is detected the patient can be prescribed eye drops for use every day, which are 98 per cent effective in saving eyesight.

OPSM optometrist Alice Ku says Glaucoma NZ is doing a good job raising awareness about the disease. “We are getting more people in asking to be tested specifically for glaucoma,” she says.

“People are becoming aware that they may not notice symptoms so they are choosing to be tested, which is fantastic.”

Mrs Ku says if someone has a family history of glaucoma they are five to 10 times more likely to develop the disease themselves.

“The important message is getting through and we are getting good traction around picking up early cases.”

With his eye exam under way, the Leader of the Opposition is quick to recommend others to “just pop in and get it done”.

“In fact, I must get in touch with my mother and ask when was the last time she had a glaucoma test.”

KEY MESSAGE

July is Glaucoma Awareness month.

- The key message revolves around early detection of the disease to prevent blindness. Glaucoma New Zealand recommends an eye examination for glaucoma every five years from the age of 45 and every three years from the age of 60.
- However, if you notice changes in your eyesight at any age you should have your eyes examined.
- Glaucoma is the name given to a group of related diseases where the optic nerve is being damaged. The nerve fibres progressively die taking away the peripheral or side vision first. Therefore visual loss goes undetected until it is quite advanced.
- Glaucoma is the No 1 cause of preventable blindness in New Zealand and other developed countries.
- Go to www.glaucoma.org.nz for more information.

Co-Leader of the Green Party, Metiria Turei had her eyes examined at Specsavers, Lambton Quay.

Leader of United Future, Peter Dunne (Assoc. Minister of Health) had his eyes examined at Visique Capital Eyes City Optometrists, Wellington.

Co-Leader of the Maori Party, Tariana Turia (Assoc. Minister of Health) had her eyes examined at Visique Goldsbury in Wanganui.

Good eye-dea: Labour leader and Mt Albert MP David Shearer gets a glaucoma check-up from optometrist Anupma Pillay.

The “silent thief of sight” won’t be robbing Labour leader David Shearer any time soon.

The Mt Albert MP dropped into the St Lukes branch of OPSM to have his eyes tested as part of Glaucoma Awareness Month.

Around 68,000 New Zealanders over the age of 40 have glaucoma and about half of those are undiagnosed, according to figures from Glaucoma New Zealand.

By the year 2031 it is estimated this number will grow to 76,000.

“Until I got this message, I knew it was around, but I didn’t know just how widespread it was,”

Thank You!

Glaucoma NZ would like to extend a big thank you to everyone who supported the 2012 July Annual Awareness Appeal.

Optometrists, ophthalmologists, pharmacies and ASB branches around the country responded by taking donation boxes to have on display. Some optometrists and ophthalmologists also made a donation from eye examinations undertaken in July.

GNZ’s new awareness poster featured inside NZ Buses around Auckland, in ASB branches, and many participants took the opportunity to have special in-house displays.

This year a number of political party leaders lent their support to GNZ by having a glaucoma eye examination, reinforcing the importance of early detection in saving sight. A large amount of media exposure was generated from this with articles appearing in a variety of local newspapers around the country.

In response to the increased media, GNZ’s advisory line kept staff busy with members of the public wanting to know more about glaucoma. Many of these callers were subsequently advised to have their eyes examined.

The Appeal overall has been a great success, lifting the awareness of glaucoma to new heights and boosting funds.

Again, Glaucoma NZ appreciates all your efforts during the 2012 July Awareness Appeal, and your continued support throughout the year working towards eliminating blindness from glaucoma.

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Thank You!
Gingko Biloba - may have some role in the treatment of glaucoma

Gingko biloba has existed for over 250 million years. It is indigenous to Korea, Japan, and China, but can be found worldwide. The gingko tree may grow to 40 meters and live for over 1,000 years. The extracts of the gingko biloba leaves have been used for hundreds of years to treat various disorders such as asthma, vertigo, fatigue, and tinnitus or circulatory problems. Recently there is increasing research to suggest that it may be helpful in possibly some types of glaucoma. The gingko leaf extracts compose mainly of flavonoids and terpenoids. These have been studied both in the laboratory and in animals. These extracts have been found to have the following effects:

- Stabilise mitochondria: Mitochondria are tiny structures inside cells that help the cell to breathe and produce energy. Mitochondria dysfunction has been shown to occur in glaucoma as well as other neurological diseases. Gingko extracts seem to stabilise the mitochondrial membrane and increase energy production.
- Anti-inflammatory: Gingko extract has been shown to decrease the production of toxic substances such as nitric oxide.
- Improve blood flow dynamics.
- Decrease vasospasm in blood vessels.

All these functions have potential benefit in the glaucoma patient. Evidence in humans however is sparse because it is difficult to do studies in humans that can conclusively show that gingko is helpful. Gingko may be particularly useful in patients who have low intraocular pressure but continue to show evidence of deteriorating glaucoma. Gingko should not replace methods of lowering eye pressure, some as well-proven eye drops, but can be used as a supplement. Some types of glaucoma may be more appropriate to gingko supplementation and each person is different. Hence, it is important to discuss with your eye doctor the potential role of gingko before using it for your specific condition.

Cocaine and other illegal drug use linked to open-angle glaucoma

A recent study in the Journal of Glaucoma demonstrated that people who used cocaine were more likely to develop glaucoma and had a 45% increased risk of the disease. The study reviewed the charts of 5.3 million American Veterans. The men with open angle glaucoma showed significant exposure to amphetamines and marijuana as well. The glaucoma patients with a history of illegal drug use averaged 54 years of age, vs. 73 years for those patients without drug exposure. The researchers did not discover a reason for the increased risk of glaucoma among the drug users and stated the issue requires more investigation.

Sleeping position may keep Intraocular Pressure (IOP) from spiking at night

If you have high eye pressure, you may want to consider sleeping with an extra pillow under your head. In a study from the University of Toronto, researchers compared the IOP of participants at regular intervals while asleep and lying flat, and while asleep and lying in a 30-degree head-up position. The researchers found that 35% of people in the study had eye pressures that reduced by 20% with the head-up position. Also, the majority of patients had pressures lower when their head was up compared to lying flat.
The eye drops will be better in situations the cornea moist for longer than the drops. The next step is to travel on a passenger aircraft that has a natural climate. For this we have to wait for the arrival of the Boeing 787 Dreamliner. When it is delivered it will have a higher pressure cabin made possible by the increased strength of its hull and it will have a much more comfortable climate.

How is Pseudo-exfoliation syndrome diagnosed?

Pseudo-exfoliation syndrome is a common condition in which flaky white material is deposited in many tissues of the eye, including the lens, the cornea, and the drainage system in the front of the eye (called the trabecular meshwork). Patients with Pseudo-exfoliation syndrome have a high risk of developing glaucoma (about 50%) because the flaky white material blocks the drainage of fluid out of the eye, causing the eye pressure to rise (Pseudo-exfoliation Glaucoma). The exact cause of Pseudo-exfoliation remains unknown but it is more common with increasing age and if you have a family history.

There are no symptoms associated with Pseudo-exfoliation syndrome. The condition is diagnosed by an Ophthalmologist or Optometrist using a slit-lamp microscope to look into the front of the eye. The flaky white material is seen on the front surface of the lens and at the margin of the pupil. Another sign of Pseudo-exfoliation syndrome is pigment build-up in the drainage system of the eye, which arises from the back surface of the iris as it rubs against the flaky white material on the lens.

Suggested ways you could help Glaucoma NZ help you:

- Continuing your most welcome and appreciated donations.
- Arrange a community fundraising event in your area.
- Contact us to arrange for a glaucoma educator to speak at your club/organisation or workplace.
- Purchase an Entertainment Book.
- Suggest to your work colleagues that they hold a special day or event to support our charity.
- Think of us when preparing or updating your Will.
- Tell everyone about Glaucoma NZ and its services.

P.S. If you are looking at holding a fundraiser, please don’t hesitate to contact us to discuss ideas and promotional material we have to enhance your event.

Entertainment™ Books

A great gift for family and friends – something for everyone!

The Entertainment™ Book is a restaurant and activity guide that provides hundreds of 25-50% off, and 2-for-1 offers from popular restaurants, cafes, cinemas, hotel accommodation and attractions throughout Auckland / Waikato and Bay of Plenty / Wellington / Christchurch, Canterbury and Nelson / Dunedin, Invercargill, Queenstown and Surrounds, as well as Australia.

Glaucoma NZ receives a donation from every book sold.

To order your Entertainment Book, please visit www.glaucoma.org.nz, or phone 0800 452 826.

Public Meetings 2012

Glaucoma NZ’s free nationwide public meetings continue to be extremely popular and well attended. These meetings are an invaluable way of raising awareness of this potentially blinding disease amongst the wider community, whilst conveying vital information to those with glaucoma and those with an interest in glaucoma.

The meetings are hosted by a Glaucoma NZ representative together with an ophthalmologist who gives an in-depth hour long presentation. An opportunity for the audience to ask questions is given, followed by refreshments.

To date meetings have been held in Tauranga, Dunedin, Rotorua, Hamilton, Christchurch, Invercargill, Auckland Central, Silverdale, West Auckland, Whangarei, and Napier.

Upcoming Meetings:

10 November, 10am – Lower Hutt
Angus Inn Hotel, Cnr Cornwall St & Waterloo Rd, Lower Hutt

17 November, 10am – Wanganui
Kingsgate Wanganui The Avenue
Dickens Room, 379 Victoria Ave, Wanganui

24 November, 10am – Palmerston North
Kingsgate Hotel, Steele Room
110 Fitzherbert St, Palmerston North

Please visit www.glaucoma.org.nz to keep up to date with our Public Meeting Programme. Glaucoma NZ members will receive personal invitations for meetings in their area.

The meetings are open to any member of the public wanting to know more about glaucoma – invite your family and friends to attend.

A big thank you to the following ophthalmologists who have given up their time to present at this year’s Public Meetings:

Dr Michael O’Rouke, Dr Casey Ung, Dr Derryl Meyer, Dr Michael Merriman, Dr Allan Simpson, Dr Casey Ung, Prof. Helen Danesh-Meyer, Dr Mark Donaldson, Dr Andrew Riley, Dr David Dalziel, Dr Alex Buller, Dr Neil Aburn, Dr John Ah-Chan.
**Christmas Research Appeal**  
**Finding a Cure**

**PLEASE** support us in our efforts to fund research into new and improved treatments for the 68,000 New Zealanders living with glaucoma.

Ongoing research and development play a vital role in the treatment of glaucoma and ultimately finding a cure. Our goal is to raise $50,000 each year to specifically dedicate to worthwhile New Zealand based research projects.

Please help us invest in a future without blindness from glaucoma.

**THANK YOU** - every donation counts!

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**YES!** I would like to make a donation to support research.

- $200
- $100
- $50
- $20
- $______ (other)

Name ________________________________  
Address ______________________________________________________________________
_________________________ Postcode______

Phone No __________ Email _______________

☐ I enclose my cheque made payable to Glaucoma NZ  
☐ Please debit my credit card  ☐ Visa  ☐ Mastercard

Name on Card ______________________________________

Card No _______/__________/__________/________

Expiry Date ___ /_____  Signature ___________________

Donations of $5.00 or more are tax deductible and will be receipted.

**YES!** I would like to receive more information about:

- Donating on a regular basis by Automatic Payment
- Leaving a bequest in my Will to Glaucoma NZ
- I have already included Glaucoma NZ in my Will

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**The Trustees of Glaucoma NZ**

Professor Helen Danesh-Meyer  
(Chairperson)

Dr Mark Donaldson  
Dr Mike O’Rourke  
Associate Professor Gordon Sanderson  
(Deputy Chairperson)

Glaucoma New Zealand - CC21421  
is a registered charitable entity in terms of the Charities Act 2005.

Auditors  WHK Gosling Chapman

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**Moving House?**

Don’t forget to advise Glaucoma NZ of your new address.