

Eyelights



The Newsletter of Glaucoma NZ
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Summer Activities and Glaucoma

The temperature's rising.....

Time to think about summer activities



Swimming, jogging and cycling are good for your health; regular exercise can even lower your intraocular pressure (fluid pressure within the eye). However there are a few notes of caution for glaucoma patients.

Swimming should generally cause no problems as long as you have not had recent eye surgery, in which case you should ask your doctor how long you should abstain from swimming to avoid the risk of infection. If you have ever had a trabeculectomy, you should be cautious about open water exposure which may possibly cause a bleb infection. There is not total agreement on how safe swimming is in different types of water (salt water, pools, fresh, lakes etc). For post-trabeculectomy patients, it is important that goggles are worn while swimming and also be watchful. If you suspect the water quality, don't take a chance. Let caution be the rule. Large goggles that don't press too hard on the orbit of the eye are recommended.

Upside down yoga positions and bungee jumping should be avoided, because they can raise intraocular pressure. If you are thinking of doing any scuba diving or snorkelling, you should discuss the type of dives you will be doing with your doctor.

Jogging is great aerobic exercise, but like other impact sports (e.g. basketball), in patients with pigment dispersion

Continued over page

syndrome and pigmentary glaucoma, it may accelerate the release of pigment from the iris and possibly cause a spike in pressure. These patients need to check with their ophthalmologist before beginning such sports.

If your child has glaucoma you should speak with the ophthalmologist to determine what level of activity would be acceptable and what could be damaging. It is possible for a child to have a normal and active life if the glaucoma is under control and sight is good. And remember – baseball, basketball and racquet sports are the major causes of eye injuries in sports. Protective eyewear is essential.



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2014
Christmas Cards
Now available**

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to purchase online

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order form

Limited edition – don't miss out!

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.

Glaucoma 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.

Glaucoma 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 Glaucoma NZ is free.



Eye Drops - Part 2

In the previous issue we covered the two most popular classes of glaucoma drops. Together the beta blockers and prostaglandin analogues account for the majority of glaucoma prescriptions in New Zealand. When these classes of medications are not enough to lower eye pressure to the target level, other classes of medication are used. Also, sometimes there is a contraindication to prostaglandin analogues and beta-blockers, in these situations one or more of the medications below is added.

Alpha adrenergic agonists

This group of eye drops was developed in the early twentieth century. Epinephrine was available for glaucoma in the 1950s. Clonidine followed soon after. These were both found to reduce the intraocular pressure and were popular for a time but they did have an excess of problematic side effects. The next cab off the rank was Apraclonidine which was initially trialled to see if it would reduce bleeding inside the eye after certain procedures. It was found to have no effect on the bleeding but did lower the eye pressure nicely. Unfortunately its effect on the eye pressure tends to wane after a while. Brimonidine (Alphagan), which was brought to the market in the 90's, does



not have this same problem and is now the most widely used eye drop in this group. Brimonidine has been shown to be one of the most effective drops at slowing down vision loss due to glaucoma.

These drops commonly cause irritated, red eyes.

The most common side-effect of this class of medication is allergic conjunctivitis. Approximately 15-20% of patients will develop this at some stage while using this group of medications. The interesting point to remember is that the allergic conjunctivitis rarely comes on immediately, but rather develops after the patient has been on the medication for some period of time. Often patients and health professionals overlook to consider this as a cause of the allergic conjunctivitis.

Another important side-effect is somnolence or drowsiness. Patients may not think to relate this to their eye drops and the failure to make this connection means that patients may continue on this medication and have the side-effect without realising it.

Other recognised side-effects include alterations in blood pressure, and reports of elevated blood pressure with this group of medications is also recognised.

Miotics

These were developed from the Calabar bean. Extract of the Calabar bean has been used throughout history. It is native to tropical Africa and is poisonous by virtue of the fact that it contains physostigmine. This compound disrupts the nervous system to such a degree that it can be used as a fairly effective poison. It is said to have been used to identify witches. The unfortunate accused would be forced to eat the Calabar beans. If they died their guilt was felt to have been proved while if they vomited the poison back up they were exonerated. The bean was formally studied in the middle of the nineteenth century. By 1864 Eserine was isolated and then Pilocarpine in 1875. These medications constrict the pupil and open up the drainage pathway for fluid to leave the eye. In so doing they lower the pressure in the eye and prevent attacks of acute angle closure glaucoma. Pilocarpine is the granddaddy of glaucoma medications and is still used to this day in the treatment

of glaucoma although its indications have narrowed somewhat and it is not so frequently used as it once was.

Common side effects include blurred vision particularly in dim light, headaches and stinging, red eyes. People who are very sensitive to this medication may notice flushing, diarrhoea, nausea, sweating and increased saliva.

Carbonic Anhydrase Inhibitors

Carbonic anhydrase is an enzyme which is active in many parts of the body. It is important for maintaining the right level of acidity in various tissues. In the eye it is crucial for the production of the intraocular fluid and therefore important in maintaining the pressure in the eye. Inhibiting this enzyme results in decreased fluid production and a drop in the eye pressure.

Acetazolamide was developed in the 1940s and 1950s. It is a sulphur based medicine that is taken in tablet or injection form. It is very potent and can have significant unpleasant side effects. In standard doses it has a diuretic effect and also causes tingling of the lips and fingers. Indigestion is also common as is fatigue.

These can be mitigated to a degree by replacing the potassium which is lost as a result of the acetazolamide. In the long term these medications are known to cause kidney stones and aplastic anaemia. The high prevalence of side effects prompted a lot of research into an eye drop form of the drug. For many years the outcomes were very disappointing but eventually in the 1980s Dorzolamide (Trusopt) was developed followed by Brinzolamide (Azopt) in the 1990s.

Both of these drops lowered the eye pressure without such a high incidence of side effects as acetazolamide. Trusopt is recognised to have a sting associated with it when it is first given while Azopt tends to be more commonly tolerated.



The topical drops do not cause the tingling in the hands or the kidney stones and blood problems.

There are also several medications that are combination treatments, that is, they combine two classes of medications.

The ones available in NZ include:

Combigan: a combination of Brimonidine (Alphagan) and Timolol (beta blocker).

Cosopt: a combination of Trusopt (carbonic anhydrase inhibitor) and Timolol (beta blocker).

Duotrav: a combination of Travatan and Timolol (beta blocker).

And so we have covered the 5 major classes of glaucoma medications. Most people with glaucoma will take at least one of these and in so doing will reduce the chance of losing vision from glaucoma.

In each case the development of these drugs represents a small miracle of serendipity, brilliance and, most importantly, perseverance.

The people and companies behind these medications have saved millions of people from going blind.

Nevertheless the existing treatment options do have limitations and the development of new and better medications continues apace to ensure that we have ever more effective treatments with fewer side effects in the future.

Ambassadors for Glaucoma NZ



Sir Richard Hadlee is an ambassador for Glaucoma NZ, and believes we need to do better to look after ourselves – that includes getting our eyes tested regularly.

For the last two years Sir Richard has lent his support to Glaucoma NZ's July Awareness Campaign, and is committed to raising awareness of glaucoma on an ongoing basis. "I want to get the message out to keep an eye on your health, especially your eyes", he says.

As a former international cricketer Sir Richard spent two decades of his life keeping an eye on the ball.

Now in his 60s he is more focused on keeping an eye on himself; and is encouraging New Zealanders to do the same. "When you're young your body reacts quickly, but as you get older there is more potential for problems to occur... no-one is excused".

"And good eyesight is so important whether you're facing a cricket ball or driving a car," Sir Richard says.

In the 70s and 80s, Sir Richard represented New Zealand in 86 test matches and 115 one-day internationals, facing cricket balls at 150kph and delivering them at up to 140kph.

Among his many awards and recognitions, Sir Richard was awarded the M.B.E. for services to New Zealand sport in 1981, and a Knighthood for services to cricket in 1990. He was also inducted into the international Cricket Hall of Fame (as one of the legends of the game) at the Bradman Museum in Bowral, Australia.

Nowadays Sir Richards is kept very busy in his many roles including being a member of the New Zealand Cricket Board of Directors, Patron of the Sir Richard Hadlee Sports Trust, an international After Dinner Speaker, as well as supporting numerous charities and good causes.

Nerida Cortese

has been involved in the world of dance (competing, teaching and choreographing) for most of her life. Originally from Australia, Nerida has for the last 14 years lived in New Zealand competing, representing our country in world championships, coaching and choreographing.



In 2005 Nerida danced her way into the hearts of New Zealanders with TVNZ's "Dancing with the Stars" where she met her husband Shane Cortese. In 2008 she returned to "Dancing with the Stars" with Monty Betham. On both occasions Nerida and her partners were runners up in the competition.

Today Nerida teaches New Zealand's current and future champions, whilst continuing to compete herself internationally.

Nerida is also no stranger to the world of ophthalmology, working as an ophthalmic technician since 2003; she enjoys the interaction with patients and being part of a dedicated team of eye health professionals.

"I feel honoured to be an ambassador for Glaucoma NZ, and having the opportunity of working to bring more awareness of glaucoma, and the importance of treatment", says Nerida.

July 2014 Glaucoma Awareness Appeal

As part of Glaucoma NZ's July Awareness Month, a B.I.G (Beat Invisible Glaucoma) Breakfast took place in Queen Elizabeth Square in downtown Auckland on July 7 which was beamed live to the nation on TVNZ's Breakfast show.

MasterChef winners Brett McGregor and Nadia Lim participated in a B.I.G Breakfast Cook-Off with early morning commuters looking on. Judges, popular television and radio cooking personality Annabelle White and Michael Van de Elzen from Food Truck fame, were assisted by A/Prof. Gordon Sanderson GNZ Trustee, Zoe Smith and Tracy Kendall-Jones from OPSM, and Maryanne Dransfield of NZ Optics.

Both breakfasts were absolutely superb and it was decided both chefs were winners on the day. Brett cooked a ham steak with a double cooked (poached and fried) egg served with tomato whilst Nadia's was a colourful Mexican breakfast with tortillas, corn, bean and fried chorizo mix, served with avocado, lime and chipotle pepper sauce with natural yogurt.

A family history of glaucoma was behind Annabelle lending a hand to help promote awareness of glaucoma.

"My mother and grandmother had glaucoma so I regularly have my eyes checked and I'm very pleased to be part of this B.I.G Campaign" she said.

TV1's Breakfast's half hourly weather forecasts fronted by the bright and cheerful Sam Wallace were televised from the cook-off with various people being interviewed about glaucoma including Helen Mawn from GNZ and Zoe Smith from OPSM.

"It's all about raising the awareness of glaucoma and funds for GNZ to continue our work.

The MasterChefs demonstrated the value of good eye sight in the kitchen to create taste and sight sensations," said Helen Mawn, Executive Manager of GNZ.

It was an early morning start for everyone involved arriving at 5.30am. The event attracted a lot of early morning commuters who asked questions about glaucoma of the GNZ staff who were handing out information.

This interaction with the public also led to a story in the NZ Herald the following day about an 11 month old baby who had been born with glaucoma. The B.I.G. Breakfast was sponsored by Alcon and OPSM.

To view live footage of the B.I.G Breakfast visit www.glaucoma.org.nz, click Annual Appeal 2014 Appeal highlights. A record number of people visited our website and our new Facebook page also proved very popular.



During the month of July people supported Glaucoma NZ in a variety of ways. Optometrists, ophthalmologists, pharmacies and ASB branches around the country responded by taking GNZ donation boxes to have on display.

A number of optometrists and ophthalmologists also chose to make a donation to GNZ from every eye examination undertaken during July. Some organisations and community groups raised funds by holding their own special events - Casual Friday's, B.I.G Breakfasts and Bake-offs. It all added to the overall success of the Appeal.

Glaucoma NZ extends a big thank you to everyone who supported our July Awareness Month. Your contribution is very much appreciated.



From left: Brett McGregor, Zoe Smith, Tracy Kendall-Jones, Nadia Lim, Gordon Sanderson, Michael Van de Elzen, Annabelle White and Helen Mawn



Brett McGregor, weatherman Sam Wallace, Nadia Lim and judges Michael Van de Elzen and Annabelle White



Brett and Nadia discussing what they are going to serve.

Hope in sight after 16 ops

The New Zealand Herald – Tuesday, July 8, 2014
by Martin Johnston



Logan and Catherine Christian have been told their son Hadley, 11 months, has an incurable eye condition. Photo / Chris Gorman)

His parents describe him as a "special little boy" whose incurable eye condition has given his Auckland family many sleepless nights.

Hadley Christian has had to endure 16 operations on his eyes in the 11 months since he was born.

And at one point he had to have eye drops put in 18 times a day.

The Auckland baby, conceived on a fifth cycle of IVF fertility treatment, was born with glaucoma, a condition that damages the nerves running from the back of the eyes to the brain.

His parents, Logan and Catherine, of Mairangi Bay on the North Shore, noticed his eyes were very watery when he was about 9 weeks old.

Their GP tried topical antibiotics, but after four days with no change referred him to a specialist, who sent him to the Auckland District Health Board eye clinic in Greenlane. The eye specialist thought the baby's eyes were unusually large, which can be a sign

of the disease in children, and tests showed very high pressure in his eyes.

Mr Christian, a manager at Auckland Transport, said hearing Hadley's diagnosis was heartbreaking. "It's taken all this effort to get him into this world through IVF and then to be told that he's got a condition that's incurable and he could go blind, it tears you to pieces."

"He's a very special little boy. There were lots of tears and lots of sleepless nights."

Hadley had the first of his 16 surgeries when he was 10 weeks. The first two didn't work so a different procedure, a trabeculectomy, was done.

That worked for a week, but then the eye pressure went back up, said Mr Christian. Hadley was in and out of hospital for two months for surgeries to make tiny adjustments.

The operation involves making a small opening in the eye, partially covered with a flap of tissue from the white part of the eye that acts like a valve to allow fluid to drain better, relieving the pressure.

Mr Christian said Hadley's eye pressure had been in the correct range since the last operation about six weeks ago.

"Hopefully the trabeculectomy will work. It's not a fix, you only manage it, it's not going to cure the problem. There's no cure for glaucoma, it has to be managed for life."

Hadley now had minor visual impairment and would probably need glasses. The cornea in both eyes had suffered damage too, which meant he was very sensitive to light.

Auckland DHB children's eye specialist Dr Justin Mora said glaucoma was rare in children. It could be congenital or a result of eye trauma or inflammation.

Surgery was more common in children with glaucoma than among adults and operations had been developed that were specifically for children.

Life Style Adjustments may reduce the risk of glaucoma

Currently, lowering the intraocular pressure is the only management that is shown to slow the progression of glaucoma.

What lifestyle changes can we make to improve the health of our eyes?

Possible modifiable risk factors: Aerobic exercise lowers Intraocular Pressure (IOP)

Aerobic exercise (walking, jogging or cycling) lowers IOP, even after 5 minutes. This reduction is greater with longer duration and higher intensity. It may have more effect in individuals with glaucoma.

Once regular exercise is established (for at least 3 months), this IOP lowering effect continues for up to 3 weeks after cessation of exercise. Physically fit individuals have a lower baseline IOP, and get much less additional lowering of IOP with exercise.



Interestingly, this reduction with exercise is additive to the effect of any glaucoma drops.

Exercise also lowers blood pressure.

It must be remembered that in pigment dispersion, aerobic exercise may increase IOP when pigment is dispersed.

NB: aerobic exercise differs from weight lifting and yoga, which may increase IOP.

Antioxidants

One study showed that foods with antioxidant properties may reduce the risk of glaucoma.

These foods include:

- green collards and kales once/month
- two servings of carrots/week
- canned or dried peaches each week

We would recommend a balanced diet with five fruits and vegetables a day, trying to include the above.



Sleep apnoea

Sleep apnoea syndrome (SAS) is associated with glaucoma. SAS is the repetitive collapse of the airway during sleep. Due to the poor quality of sleep, patients have chronic fatigue, daytime sleepiness and reduced cognitive function. People are more at risk for SAS if they are male, obese, snore, drink excessive alcohol, and smoke.

Smoking

No study has found an association between glaucoma and smoking.

Excessive water drinking

A significant rise in IOP may occur after drinking a high volume of water (500mL to 1L) over a short time period (15minutes). Glaucoma patients should avoid ingesting large volumes of fluid rapidly.

Coffee

Caffeinated coffee is known to elevate IOP in some people. The significance of this is unclear.

Alcohol

Alcohol may lower IOP initially, but daily alcohol causes a slight elevation in IOP.

Gingko biloba

Gingko biloba is a herb taken by mouth. Some studies have shown that gingko biloba has a neuroprotective effect. Most of the studies have been in vitro or in animal models, but there are a few studies in humans which suggest a beneficial effect. It is known to increase the risk of bleeding in some, so do not take this without first consulting with your doctor.

Glucosamine

This over-the-counter medication has been shown to increase intraocular pressure in one study, although the findings need to be validated in further research.

High blood pressure

Untreated systemic hypertension is associated with glaucoma. This is not a direct association, rather indirect, possibly due to high blood pressure damaging the blood vessels to the optic nerve over time. It is recommended that high blood pressure is treated.

NB: High blood pressure is **not** correlated with high eye pressure.

Low blood pressure

Some glaucoma patients have progressive visual field loss despite adequately controlled IOP. One possible cause is excessive lowering of blood pressure, in patients on blood pressure medications who may be over-medicated. 24-hour blood pressure monitoring can detect this.

However, the important variable seems to be perfusion pressure, how much blood is reaching the optic nerve. If the blood pressure is low, and the eye pressure is high, there is a low perfusion pressure and this has been shown to cause damage to the optic nerve.

Increasing intraorbital pressure – playing wind instruments

IOP can almost double within 20 seconds when playing a wind instrument, but returns to baseline almost immediately.

Yoga

The inverted position in yoga has been associated with significant increases in intraocular pressure in some people and could lead to worsening of glaucoma.

Swimming goggles

The wearing of small well-fitting swimming goggles increases your IOP.

Summary

Several lifestyle factors affect IOP, but there are no studies confirming whether these changes influence glaucoma progression. However, there is significant evidence that these lifestyle changes are good for general health, and they seem unlikely to cause more glaucomatous damage. Hence, with the current information available, we recommend them.

Modifiable Risk Factors

1. Exercise regularly - MOST IMPORTANT
2. Eat FIVE fruits / vegetables per day (especially carrots, greens and peaches)
3. Keep weight in healthy range
4. If you snore, exclude sleep apnoea
5. Stop smoking
6. Do not drink over 500ml in 15 minutes
7. Drink coffee in moderation
8. Discuss Gingko biloba with your doctor
9. Be aware of possible risk with glucosamine
10. Drink alcohol in moderation
11. Maintain a healthy blood pressure
12. Avoid:
 - Lifting heavy weights
 - Playing wind instruments
 - Head-down yoga positions
 - Wearing small swimming goggles

Make a lasting gift

Including a gift to Glaucoma New Zealand in your Will is a powerful way to make a positive difference to the outcomes of those with glaucoma and their families, far beyond your lifetime.

Some initial steps to consider:

- Talk to your family. Help them understand why you want to support Glaucoma NZ into the future, as well as look after your own family and loved ones.
- Seek advice from your solicitor. People leave bequests of all sizes and no gift is too small to make a difference. Ask about adding a codicil rather than writing a new Will.
- Decide how you wish to share your estate. Whatever the size of your bequest, please be assured it will make a real difference to those with glaucoma, and the services Glaucoma NZ provide.

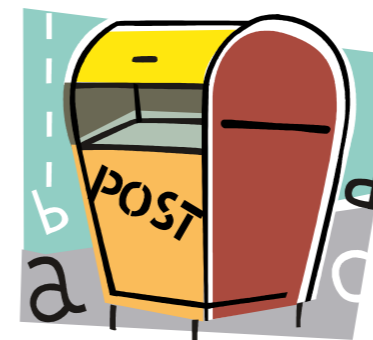
For more information and to download a Bequest Form that you can discuss with your solicitor, please visit www.glaucoma.org.nz.

Alternatively phone our office 0800 452 826, or email info@glaucoma.org.nz.

Contributions to Eyelights

We would like to thank the following people for contributing articles which featured in the 2014 editions of Eyelights.

- Dr Jo Koppens
- Dr Sam Kain
- Dr Siddharth Ogra
- Dr Hussain Patel
- Dr Jim Stewart



Public Mail Box

If I have glaucoma in one eye will it spread to the other eye?

Primary open angle glaucoma generally affects both eyes, but does not always develop at the same time.

One eye may have moderate or advanced glaucomatous damage, while the other eye has very little or none.

This variation in the extent of the damage can cause confusion and the mistaken perception that only one eye is involved.

In time, most patients will develop glaucoma in both eyes.

Acute angle-closure glaucoma may also initially occur in only one eye, but there is a 40 to 80% chance that the other eye will develop angle closure over a 5 to 10 year period.

For this reason, your doctor may decide to treat the unaffected eye to prevent an angle closure attack.

Some types of glaucoma such as secondary glaucoma caused by injury to the eye, usually affect one eye.

Secondary glaucomas such as Fuch's syndrome, pseudoexfoliation syndrome and iridocorneal endothelial (ICE) syndrome occur in only one eye a majority of the time, but can be bilateral.

Public Meetings 2014

Once again Glaucoma NZ's nationwide Public Meeting Programme has been well attended at many venues throughout the year.

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.

In 2014 meetings have been held in Invercargill, Nelson, Christchurch, Hamilton, Greymouth, West Auckland, Orewa, Auckland Central, Havelock North, Taupo, Palmerston North, Whangarei, and Auckland's North Shore. The last meeting for the year will be held in Gisborne on 22 November at the Quality Hotel Emerald, 13 Gladstone Road, commencing 10am.

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

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

Doctors Casey Ung, Antony Suter, Allan Simpson, Jim Stewart, Andrew Riley, Dean Corbett, Mark Donaldson, Alex Buller, Keith Gross, Richard Holmes, Brian Kent-Smith, and Jo Koppens.

Community Meetings

Glaucoma NZ also provides speakers for presentations to community groups. For further information about this resource, please phone 0800 452 826, or email info@glaucoma.org.nz.

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!

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

\$200 \$100 \$50 \$20 \$_____ (other)

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I enclose my cheque made payable to Glaucoma NZ

Please debit my credit card Visa Mastercard

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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:

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I have already included Glaucoma NZ in my Will

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