Eyelights

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GLAUCOMA NZ TO SAVE SIGHT

Dry Eye and Glaucoma

Dry eye is a common eye condition that affects thousands of New Zealanders every day. Like open-angle glaucoma, dry eye syndrome increases with ageing. Studies suggest that 40-50% of glaucoma patients have dry eye syndrome, with women more likely to have it. People with glaucoma are at higher risk of dry eye because some glaucoma treatments can worsen the ocular surface and increase the tendency to dry the eye.

How to recognise dry eye?

In some cases, dry eye can affect your quality of vision and sensitivity to light. The most frequently reported symptom of dry eye is grittiness and burning, or a sensation of sand or grit in the eyes. However, you might be surprised to learn that dry eyes can also cause excessive watering of the eyes (epiphora).

Why does this happen?

The thin layer of tears that covers your eye keeping it lubricated, nourished and protected, has three main components. Mucins are at the base to help anchor the tear film in place, a watery layer with nutrients is in the middle (aqueous), and oil is on the surface to reduce evaporation. The various glands that produce these components must all be functioning to create a healthy tear film of adequate quantity and quality. Unfortunately, when this tear film becomes dysfunctional in dry eye, it causes the eye's surface to become inflamed and result in chronically red, irritated eyes.

This is either because of a lack of tear quantity (volume) or quality.

A tear film lacking in quantity is described as 'aqueous deficient'; a truly 'dry' dry eye.

One lacking in quality is described as 'evaporative' since it evaporates too rapidly, causing irritation and consequent eye-watering.

Evaporative dry eye is approximately 9 times more common than aqueous deficiency.

Why has my tear film become dysfunctional? Continued on page 2

Eyelights insights:

Dry eye and glaucoma continued

Usually, a combination of factors is responsible for the development of a dry eye.

Age and Gender: Dry eye becomes more common with increasing age and is particularly prevalent in post-menopausal women.

Environment: Air-conditioned, centrally heated, smoky, polluted, or windy settings, as well as computer use, can aggravate dry eye.

Contact lenses: Contact lenses disrupt the natural tear film, causing excessive tear film evaporation.

General health: Rheumatoid arthritis, diabetes, thyroid disease, and other immune disorders such as Sjögren's syndrome are more commonly associated with dry eye

Oral medications: Some medications for allergy, depression or acne, for example, can affect the tear film, as can eye surgery, especially laser surgery (e.g. LASIK).

Eye drops: Glaucoma is associated with a higher incidence of dry eye because of the medications used to treat the condition.

Many eye drops for glaucoma contain preservatives, which after repeated application over a long period, can damage the superficial cells of the ocular surface, making the eye's surface less wettable and resulting in the development of dry eye signs and symptoms.

What can you do about it?

Improve the environmental conditions: Minimise exposure to air-conditioning and central heating. Enhance the moisture level around the eyes by using humidifiers and/or by wearing wrap-around style spectacles to create a humidified local environment protecting the eyes from airflow. Breathable foam inserts that form a seal around the eye are another option with wrap-around style glasses or sunglasses.

Minimise use of cosmetics: Cosmetics and face creams worn on the face and around the eyes will migrate over the eyelid margins. This can disrupt the tear film, exacerbating dry eye, so try to minimise make-up use.

Optimise your workspace: Adopt a slight downward gaze at the computer screen where possible to minimise the exposed eye area. Lowering your screen prevents excessive drying of the eye surface. Improve your blinking by practising complete and regular blinking, at least once every 5 or 6 seconds. Blinking exercises can be done anywhere at any time, and there are even Phone Apps to help.

'Blink reminder' apps are designed for dry eye computer users and are free to download.(go to glaucoma.org.nz to find out more).

Adjust your diet: Increasing your dietary intake of essential fatty acids (EFA) to include Omega 3 can help reduce dry eye symptoms. Good natural sources of Omega 3 include oily fish (such as salmon) and linseed (or flaxseed) oil. In addition, Lacritec and Theratears have supplemental products specially formulated for dry eyes. AFT's eye drops NovaTears®+ Omega-3 also contains it.

It is also essential to stay hydrated, so drink plenty of water.

Perform eyelid hygiene: Tear film quality can be adversely affected by a lack of oils due to blocked glands (meibomian gland dysfunction). Thoroughly cleaning your eyelid margins, ideally with commercially prepared lid cleansers from your pharmacy, helps to remove any crusts (signs of blepharitis) from around the eyelashes. Warm compresses, using a wheat or flaxseed bag heated in the microwave, for example (Figure1), helps to unblock the glands by melting the oils.
After warming the eyelids for at least 5 minutes, it's helpful to roll your finger gently over your eyelids, towards the edges (i.e. rolling with a downwards motion for the top lid and upwards for the bottom lid) to help squeeze the oils out of the glands (Figure 2). It should be noted that these are chronic eyelid conditions and so need regular and long-term commitment if management is to be successful.

Eyelid position correction: The eye's surface can also become dry because tears are not evenly distributed across the ocular surface. This can occur because of lumps on the surface of the eye, such as pingueculums or pterygia. For tears to be spread evenly over the surface, the eyelids must be in good contact with the eye surface. Eyelids that are floppy, lax or turned out (ectropion) can also

Figure 1: Warm the eyelids for at least 5 mins with a wheat or flaxseed bag.

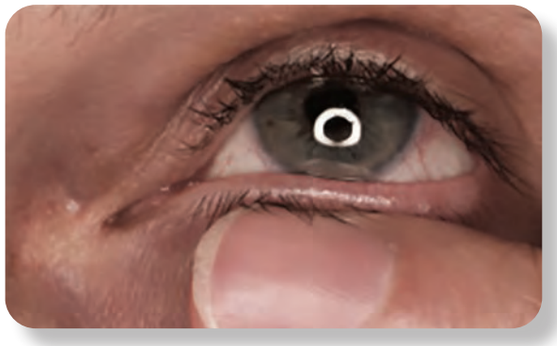

Figure 2: Gentle pressure outwards helps keep oils out of the gland.

worsen the tendency to dry eye. Whilst artificial tear drops can help, sometimes surgical correction of the eyelid position may be required.

Use artificial tears: Dry eye is most commonly managed with artificial tear supplements (drops). Most drops are best suited to aqueous deficient dry eye by boosting tear volume, but some newer products target the tear film oil layer to cater to those with evaporative dry eye. The products range in viscosity (runniness). Most gloopy eye drops provide the most prolonged relief from symptoms but cause transient blurring on application. This is well tolerated by patients with moderate to severe dry eye, but those with milder symptoms might prefer a less viscous (a runnier) eye drop. Whilst generally safe to use, the main precaution is to restrict excessive use of preparations with preservatives as preservatives can cause ocular surface toxicity and worsen dry eye symptoms.

Consider punctal plugs: Punctal plugs are another solution for a dry eye that doesn't produce enough tears (aqueous deficient). Punctal plugging is when tiny silicone plugs are inserted in the drainage channels (puncta) on the inner corners of your eyelid margins, stopping the tears (or tear supplements) from draining out, keeping the eye's surface wetter for longer.

Review medication side effects: If prescribed medications cause significant dry eye, your general practitioner (GP) or specialist might consider alternatives. However, often the benefits of your medication outweigh the side effect of dry eye, and other means of managing the dry eye must be sought.

What does the future hold for dry eye: In May, Prof Jennifer Craig's presentation at the GNZ Professional Education Symposium 2021 focused on the intersection of dry eye and glaucoma. Professor Craig outlined why preserving the ocular surface is key in glaucoma patients, particularly for those with existing dry eye disease and in younger patients who may have decades of therapy ahead of them. New Zealand's lack of subsidised preservative free glaucoma medications was highlighted as a future challenge for ophthalmologists treating glaucoma. It is GNZ's hope that we will see a wider variety of eye drops available for New Zealand glaucoma patients in the not-too-distant future.

There are many reasons to be hopeful as researchers, leading pharmaceutical companies, and clinicians are continuously developing new products or improving existing ones. Your eye specialist will be able to advise you, on an individual basis, about the suitability of new products for you, as they become available locally.

Eyedrop Aids

Using eye drops can be a challenge for many patients, young or old. AutoDrop ® and AutoSqueeze ™ have been developed to make self-administration as simple as possible – helping to improve patient compliance and reducing reliance on others to help with this task.

Many patients who use eye drops have other conditions that affect their dexterity and ability to squeeze small eye drop bottles.

AutoDrop ® and AutoSqueeze ™ are re-usable and provide a cost effective solution for simple eye drop application.

You can now purchase these from Glaucoma New Zealand through our website www.glaucoma.org.nz or phone 0800 452 826.

Autosqueeze Autodrop

The Gordon Sanderson Scholars 2020/2019

Recent recipients of the Gordon Sanderson Scholarship, Aqeeda Singh and Blair Lowry discuss their research projects and the important role data plays in the future of glaucoma research and treatment.

Aqeeda Singh

2020 Scholarship recipient Aqeeda Singh outlines her project working with the Dunedin Study. This world-renowned longitudinal study has been following the lives of 1037 babies born in the greater Dunedin metropolitan area between 1 April 1972 and 31 March 1973 to understand the factors leading to significant health and social outcomes in life. These participants have been interviewed, examined and investigated in numerous ways throughout their lives, with a very high follow-up rate of 94% at 45 years of age.

Now in middle age, the participants were recently subject to a broad range of tests relating to their eyes, including intraocular pressure (IOP), retinal photography, optical coherence tomography (OCT) and visual field testing; this study has examined their eye-related data to measure the prevalence of glaucoma in this cohort.

This is one of the first population-based studies of glaucoma prevalence using modern OCT scans to determine a diagnosis of early glaucoma (when visual fields are normal) and has implications for public health planning in New Zealand.

Two independent ophthalmologists examine the optic disc photographs, masked to other data, and then suspicious discs were re-examined with more information such as IOP, corneal thickness, OCT and visual fields.

The prevalence amongst 45-year-olds was 0.79%, in line with other populations. At this age, the prevalence was low, so it was impossible to ascertain risk factors or undertake subgroup analyses such as risk by ethnicity. Interestingly, those with raised IOP had a low rate of glaucoma; nearly all of the cases we found had normal IOP. None of the glaucoma cases had significant visual field loss, so these are mild early cases.

Aqeeda said, “We are interested in modelling how the use of OCT at a population level detects many low-risk glaucoma suspect cases, generating a new burden for monitoring to prevent rare cases of vision loss”. She is grateful to Prof Helen Danesh-Meyer for the support and direction with this project, as well as the Gordon Sanderson Scholarship committee and Glaucoma NZ.

Blair Lowry

Blair Lowry was a Gordon Sanderson Scholarship recipient in 2019, where he conducted research investigating the epidemiology of acute angle-closure glaucoma presentations over 2018 and 2019 at Greenlane Clinical Centre. Glaucoma is one of the leading causes of preventable blindness in New Zealand, which can be treated with effective treatment such as intraocular pressure lowering medications or surgical treatment to correct the rise in intraocular pressure. Acute angle closure glaucoma is an uncommon presentation, but it is a medical emergency that requires rapid identification and management to prevent blindness when it occurs.

My research focused on identifying important demographic parameters that might identify which groups are more susceptible to developing an acute angle closure crisis, and ideally, those at-risk populations. Through our sample recruitment, we included sixty-five cases of AACG from Greenlane Clinical Centre over the two years. We looked at the demographic parameters between these cases: age, sex, ethnicity, family history of glaucoma, and we will be looking at follow-up data of these individuals.

In our sample population, AACG mostly affected those greater than 40 years of age, with the mean age of AACG episodes being 63 years of

Glaucoma NZ Symposium 21: Dr Divya Perumal, Dr Hannah Kersten, Prof Jennifer Craig, Dr Sam Kain, Prof Helen Danesh-Meyer, Dr Keli Matheos.

Glaucoma NZ Professional Symposium Summary

Blair Lowry continued

age. Women had higher representation in this population than men (60% vs 40% respectively) – which is consistent with the literature. Caucasian individuals made up a significant proportion (47%) of cases, with Asian individuals being the 2nd most predominant ethnicity affected by AACG - due to anatomical predisposition to narrower angles – with 30% of the cases. Pasifika was represented quite significantly in this data, with 14% of Pacific people being affected by AACG, whilst Pasifika people represent 8.1% of the NZ population based on the 2018 census. 9% of the AACG cases were Māori individuals, which is lower than the reported 16.5% of Māori within the NZ population. A link between family history of glaucoma and AACG could not be established within this population as data is limited by the underreporting of family history of the cases. However, the literature identifies that there is a link between positive family history of glaucoma and AACG.

Blair would like to thank his supervisors Dr Hussain Patel and Prof Helen Danesh-Meyer for their support and direction with this project, as well as the Gordon Sanderson Scholarship committee and Glaucoma NZ for helping contribute to more ophthalmological research and a greater understanding of acute angle closure glaucoma in New Zealand. “It’s been an honour working with them all and getting a taste of what ophthalmology entails” .

It was a case of third time lucky for the 2021 Glaucoma New Zealand Symposium: After two postponements over the past year, the Symposium successfully went ahead at Alexandra Park, Auckland, on the 16th of May. Given that in-person educational events have been few and far between recently, it was a fantastic opportunity for colleagues, students and sponsors to network, and to enjoy some excellent glaucoma education from a diverse range of speakers. This year, GNZ also provided the opportunity for delegates to attend remotely (with 26 people live-streaming the event, in addition to the 100+ attendees in the room), which prompted positive feedback.

Professor Graham Lee, presenting via (almost completely glitch-free) Zoom from Brisbane, was this year’s keynote speaker. Professor Lee gave a whistle stop tour of the red eye in glaucoma. As he is fellowship trained in both cornea and glaucoma, he is uniquely qualified to cover this topic. The presentation covered a wide variety of causes and cases of red eye in glaucoma, ranging from sight-threatening emergencies (acute angle closure) to mild iatrogenic red eye (this part of the talk also highlighted the wider range of preservative-free medications available for glaucoma treatment in Australia compared with New Zealand). Prof Lee raised the importance of asking about a patient’s nutrition, and covered an interesting case of reduced conjunctival healing in a patient suffering from alcoholism.

The day concluded with the the Gordon Sanderson Scholarship presentation. The scholarship, named for Associate Professor Gordon Sanderson, one of the founding trustees of GNZ and a titan of eye care in New Zealand, has been awarded every year since Gordon passed away in 2017.

Overall, it was a fantastic day of glaucoma education. Special thanks goes to Pippa and Tersia at GNZ for organising the event, all of the excellent speakers, and to the sponsors, AFT Pharmaceuticals, Allergan, Designs for Vision, Device Technologies, Glaukos, Humanware, Medix21, OIC and Tristel for their generous support of the event.

If you want to know more please go to glaucoma.org.nz to read our in depth report and learn more from the eye health professionals who presented at the symposium.

Support Glaucoma NZ and soothe your eyes

For each AFT eyecare product purchased instore (sold in Unichem and Life Pharmacies) 21 June – 15 August 2021, AFT will make a charitable donation of $1 to Glaucoma NZ.

AFT eyecare products include: NovaTears®, NovaTears® + Omega-3, Hylo-Fresh®, Hylo-Forte®, Opti-Soothe® Moist Heat Mask and Opti-Soothe® Preservative-free Eyelid Wipes.

Eyecare specialists recommend a regime including lubricants, lid hygiene and heat applied to the eyes in the management of Dry Eye Disease and related eye conditions[1].

Eyecare specialists also recommend the use of preservative free lubricants which have shown greater effectiveness than preserved drops in decreasing inflammation in the eye[1].

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Ref 1 Jones, Lyndon, et al. "TFOS DEWS II management and therapy report." The ocular surface 15.3 (2017):575-628.

Easy ways to give

Glaucoma NZ wants to thank you for taking the time to make this transition from using cheques, and we greatly appreciate the effort you have put in to find an alternative to support us to continue our work in the community to fight blindness from glaucoma.

Internet banking

To make a payment you will need to enter the following account details ASB Bank account: GLAUCOMA NEW ZEALAND 12-3013-0180964-00

You can save the Glaucoma NZ details for next time in your account so you do not have to enter them every time (if you are unsure of how to do this, ring your bank and get them to help you).

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Contact your bank and request they set up an automatic payment from your credit card. Set the frequency of the payment when you set it up.

*Setting up a regular gift can make it easier to do your end of year tax accounts as we can send one annual receipt totaling your year's gifts. All donations over $5 are tax deductible.

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www.glaucoma.org.nz donate directly to the website to receive an automatic receipt. You know your donation has been received. Reference your full name or Membership ID (newsletter location).

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Ring us 0800 452 826 and we can process your credit card donation over the phone.

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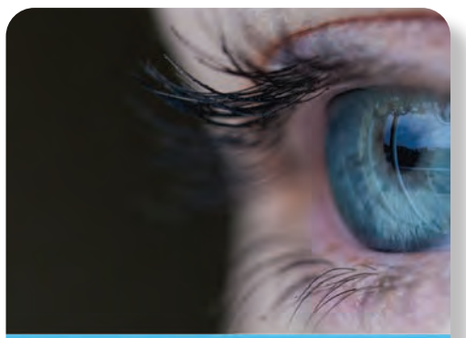
You can also set up a direct debit from your account to make a regular payment either weekly, fortnightly, or monthly. If you prefer, talk to your bank, and they will set it up for you or another option is to enlist the help of a trusted family member.

One of the best ways to help guarantee that our research, education and support services can continue now and into the future, is to become part of a group of very special people who donate monthly.

By donating regularly, you enable us to continue to provide services for recently diagnosed people with the education they need to manage their glaucoma and prevent vision loss

You can contribute any amount you wish. No amount is too big or too small. You can increase, decrease, or cancel your regular giving donation at any time should you change your mind.



GLAUCOMA PATIENT
SYMPOSIUM

Practical information to help you understand and live with glaucoma.

Auckland – Ellerslie Event Centre Sunday 15th August

Wellington – Harbour View Event Centre - Sunday 26th September

Christchurch - Addington Racecourse - Sunday 31st October

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How your donation helps

$20 Will ensure three people receive initial support and information packs to assist them to answer their glaucoma concerns.

$50 Helps staff the Glaucoma New Zealand telephone support service (0800 452 826) for a month, to answer calls for information, and emotional support.

$75 Funds two support groups for a month.

$100 Assists to increase community glaucoma awareness and the need for regular optic nerve checks.

Glaucoma NZ is a registered charitable trust and receives no government funding. We rely solely on donations, sponsorship, grants and fundraising. All the information available and provided to over 8000 members of Glaucoma New Zealand and the general public is free.

Contact us to find out more on info@glaucoma.org.nz or call 0800 452 826

To donate on-line visit www.glaucoma.org.nz

Content in 'Eyelights' is intended to help readers understand glaucoma. Every effort is made to ensure the accuracy of this information. This information is not a substitute for the advice and recommendations of health professionals. Always consult a health professional prior to any decision regarding your eyes or other health concerns.