Winter 2017

The View

News from the Ocular Repair Group at the Save Sight Institute

Welcome to *The View*, a newsletter for patients wishing to stay up-to-date on the latest research developments in ocular repair and regeneration.

The Ocular Repair Group has three major research areas: Serious Ocular Infection, Fight Corneal Blindness! and Dry eye and blepharitis. This issue will focus on dry eye and blepharitis.

Our research relies exclusively on external grants and fundraising.

If you are in a position to support our research, please know that we are extremely grateful and that your donation will be well used.

You may also like to consider remembering ocular repair research in your will.

Leader, Ocular Repair
Save Sight Institute

Dry eye disease in Australia

Dry eye is the most common eye disorder affecting one in three people. People affected suffer from pain, blurred vision and even permanent vision loss with work productivity and quality of life reduced.

Dry eye occurs when the tears evaporate away too quickly, are lacking as not enough are produced, or a combination of these effects. This disrupts the eye's tear film and produces inflammation (red eyes).

The Ocular Repair Group has found that women on specific anti-cancer therapy (Aromatase Inhibitors (AIs)) have increased symptoms of dry eye. We have also developed a novel therapy for dry eye and blepharitis (inflammation of the eyelid margins) based on oral statins (cholesterol lowering medication).

Our work continues to understand dry eye and find new solutions to alleviate suffering. We are now investigating how AIs cause dry eye and working on bringing our novel therapy to the clinic.

Meet the team researching Dry Eye Disease

Pauline Khoo
Research Officer

Dr Kenneth Ooi
Ophthalmologist

Dry eyes and Aromatase Inhibitors: If you don't ask you won't find out

Recently, we found a link between Aromatase Inhibitors (AIs) and dry eye. AIs are the standard of care in post-menopausal women with breast cancer. We investigated whether women on AIs for the treatment of breast cancer had a higher prevalence of dry eye symptoms. We identified 93 women with breast cancer treated with AIs and compared them to 100 healthy women. We found the prevalence of dry eye was 35% in breast cancer patients compared to 18% control (healthy patients).

The study indicated that dry eye is significantly more common in women on AIs compared to women in the control group (Table 1).

However, we do not know what type of dry eye these women have, making it difficult to tailor interventions and develop treatments. We are now planning to investigate whether dry eye symptoms in AI therapy are associated with clinical features of dry eye. The study will also investigate whether serum and tear levels of sex hormones are altered in AI therapy. Establishing the link between hormones and target tissue will assist in new therapeutic interventions.

1 Table 1: Prevalence of dry eye in control and exposure groups, as determined by Ocular Surface Disease Index (OSDI) Score

OSDI score	Classification	Control Group n=100	Exposure Group n=93	P Value
≤12	No dry eye syndrome	82 (82%)	60 (64%)	**<0.01**
>12	Dry eye syndrome (DES)	18 (18%)	33 (36%)	**<0.01**

Table 2: OSDI Score of dry eye in control and exposure group 2

OSDI score	Classification	Control Group n=18	Exposure Group n=33	P Value
12.1 - 22	Mild dry eye	10 (10%)	13 (14%)	0.39
22.1 - 32.0	Moderate dry eye	3 (3%)	11 (12%)	**<0.02**
>32.1	Severe dry eye	5 (5%)	9 (10%)	0.21

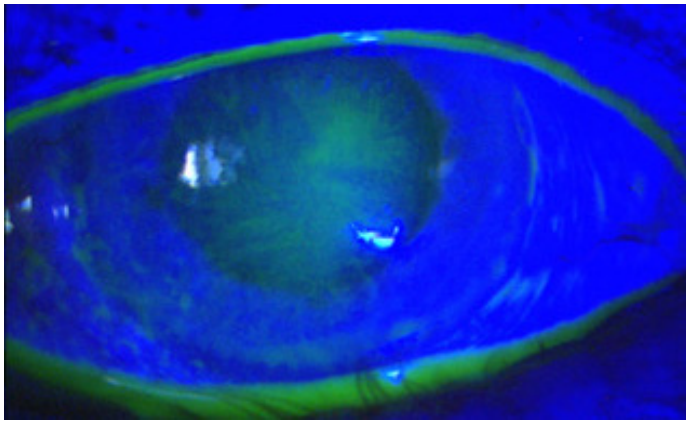
I am motivated by the ability to make positive change in people's lives. I am driven to improve outcomes for patients but also to educate and mentor the next generation of eye care workers and researchers.
As vision loss increases in Australia, ways to improve outcomes for patients and tackle the growing burden are urgently needed.
Supporting skilled people and innovative ideas are also a motivator for me.

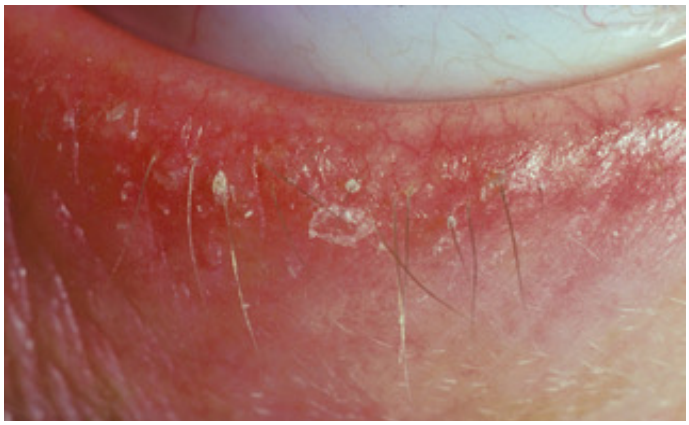
Professor Stephanie Watson

Researchers Pauline Khoo and Maria Cabrera-Aguas work with Professor Stephanie Watson

Novel treatment for Dry Eye

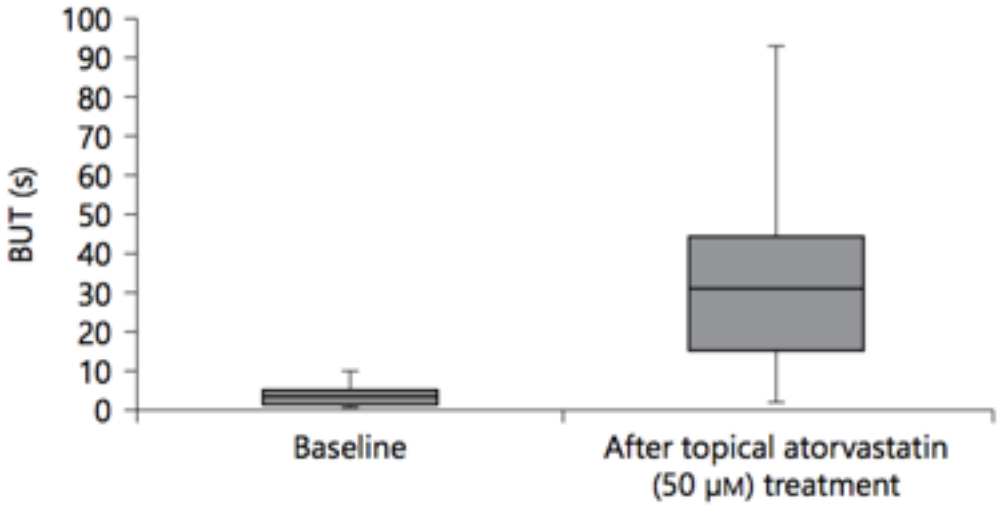
Dry eye is frequently accompanied by blepharitis. However, treatments for blepharitis are lacking. We have developed a novel therapy for dry eye; topical atorvastatin, and completed a pilot study examining the efficacy and safety of topical atorvastatin in 10 patients with dry eye and blepharitis. Patients were assessed objectively (ophthalmic examination) and subjectively (questionnaires). Our results showed that topical atorvastatin was effective in treating dry eye and blepharitis, as both objective and subjective measures of blepharitis improved. The treatment showed good safety and acceptability after 4 weeks of treatment, with fewer side-effects. We plan to conduct a larger comparative clinical trial to assess the efficacy, optimal dosage and safety of the drug.





Images above: Clinical presentation of blepharitis

1 **Diagram 1: Graph of tear film break up time (BUT) in seconds before and after 4 weeks of treatment** (Tear film break up time – a test to measure the interval between the individual's last complete blink and the break up of the tear film)



"Having grown up around eye-health practitioners, I understand the importance of sight and the detrimental impact that vision loss can have on individuals, families, and even communities. It's a privilege to be part of a team that makes a real difference to people who suffer from dry eye."

- Pauline Khoo, Research Officer, Ocular Repair -

Keratoconus patient, Michelle Urquhart speaks at Kera Club 2016

Upcoming Events

AUGUST:

Keeping up to date on Keratoconus:
An Information Session for Practitioners
Wednesday 9th August, 6:00pm - 8:30pm
Claffy Lecture Theatre, Sydney Eye Hospital
8 Macquarie Street, Sydney

SEPTEMBER:

Kera Club
Thursday 7th September, 6:00pm - 8:00pm
Claffy Lecture Theatre, Sydney Eye Hospital
8 Macquarie Street, Sydney

Keep up-to-date at
https://www.facebook.com/savesightinstitute/

Support Eye Research

We can't do what we do without the support of our patients and community. Our research is funded 100% by grants, donations and bequests. To help us find new and improved ways to save sight please consider making a donation to the Ocular Repair Group via our donation form or online at savesightinstitute.org.au (selecting 'Ocular Repair Group' from the gift form). You can also call (02) 9382 7306 to make a credit card donation. **Donations over $2.00 are tax deductible.** Save Sight Institute is a centre of The University of Sydney.

Our Team:
Professor Stephanie Watson (leader), Dr Maria Cabrera-Aguas, Professor Nick Di Girolamo, Amanda Dinh, Associate Professor John Foster, Pauline Khoo, Dr Jenny Lauschke, Dr Kenneth Ooi, Dr Dana Robaei and Dr Jack Tan.

Our Supporters:
Sydney Eye Hospital Foundation, Keratoconus Australia, Ophthalmic Research Institute of Australia, NHMRC, Cornea & Contact Lens Society of Australia, NSW Health.

THE UNIVERSITY OF SYDNEY

SAVE SIGHT INSTITUTE

SSI is a research centre of the University of Sydney