Treatment Options for Dry Eye

The treatment we prescribe or recommend for you will be influenced by the results of your specific dry eye assessment and targeted towards the form of dry eye disease you are diagnosed with.

It is important to understand that in many cases the treatment options for dry eye will enable you to manage but not necessarily cure the disease, so ongoing attention is frequently required. In some cases treatment may not result in significant improvement in symptoms, but is important to prevent progression of meibomian gland disease and of your dry eye condition worsening further.

Initial Non-Specific Treatment Options

For all dry eye sufferers there are a number of relatively simple and inexpensive strategies for the reduction and management of symptoms. These include:

Environmental modifications – minimising exposure to environmental hazards such as air-conditioning and heating; keeping interior environments well humidified; avoiding smoky environments; and wearing protective eyewear in challenging environments.

Occupational modifications – particularly relating to screen-based activities, by regular blinking; taking regular breaks from screen work; and by lowering screens below eye level.

Modification of medications – in conjunction with the appropriate health care practitioner (usually the GP) considering the ocular side-effects of systemic medications such as anti-histamines, anti-depressants, and HRT, and modifying where practicable.

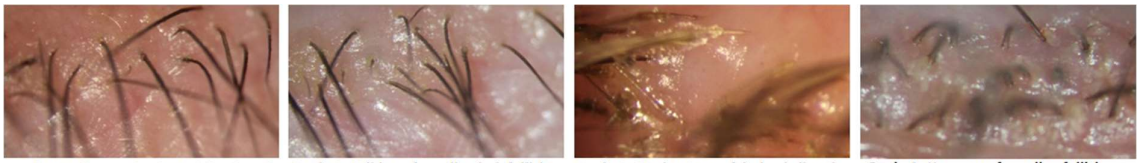
Dietary and other nutritional supplementation – especially increasing dietary intake of omega-3 essential fatty acids found in fish such as salmon, trout, sardines, tuna and mackerel; this may be supplemented by products such as fish oil tablets.

Use of ocular lubricants – including tear substitutes of varying viscosity, gels and ointments, possibly non-preserved.

Reduction or cessation of contact lens wear – contact lenses disrupt the tear film and will generally tend to exacerbate existing dry eye.

Instituting basic eyelid therapy and hygiene – warm compresses, lid massage, and lid scrubs where appropriate.

Anterior Blepharitis



Grade 1 - Inflammation but minimal scurf | Grade 2 - Mild scurf, swollen lash follicle | Grade 3 - Moderate scurf, lash misdirection | Grade 4 - Heavy scurf, swollen follicles, lash misdirection & ingrown lashes

If anterior blepharitis is detected this should generally be addressed prior to the commencement of other dry eye therapy. The mainstays of treatment for anterior blepharitis include:

Lid scrubs and lid hygiene measures – lid scrubs involve cleaning the lid margins with cotton buds moistened with products such as baby shampoo or with self-foaming pads or eyelid wipes. The purpose of lid scrubs is to remove all debris and matter from the lid margins, including any that might be blocking the meibomian glands.

Blephex™ – Blephex™ is a procedure performed in-office by the optometrist which provides a more thorough cleaning of the lids than lid scrubs by the use of a rotating brush. The fee for performing this procedure is $53.70 in addition to the short consultation fee. Go to http://rysurg.com/index.php/blephex-page.html for more information about Blephex™.

Blephadex – Blephadex foam cleanser and eyelid wipes are for home use. The cleanser contains tea tree oil and is particularly effective against the Demodex mite that frequently contributes to the development of blepharitis and associated rosacea. For information about Blephadex, go to http://www.test.collinsoptometrists.com.au/wp-content/uploads/2015/08/BlephadexPatientBrochure.pdf.

Aqueous Insufficiency

Dry eye from aqueous insufficiency arises from reduced secretion of the lacrimal gland and causes tear hyperosmolarity, where the concentrations of tear salts and proteins become abnormally high. In turn this causes inflammation of the ocular surface, damage to the epithelial cells at the front of the eye, and an unstable tear film. Aqueous insufficiency is treated with some of the following:

Topical steroid drops – steroid drops such as Flarex and FML are frequently used in the first instance to reduce the inflammatory consequences of tear hyperosmolarity. Steroids are also helpful where there is co-existing meibomian gland disease because of their anti-inflammatory effect on the eyelids. They often bring rapid initial relief of symptoms but are not suitable for long-term use due to risks such as increased intra-ocular pressures, cataract, and reducing the eye's resistance to infection.

Restasis (cyclosporin A) – this drop protects and restores the functioning of the lacrimal gland, as well as reducing inflammation in the eye as steroids do. Cyclosporin has been more difficult to obtain, as up until recently it has had to be prepared by a compounding pharmacist, but the emergence of preparations such as Cequa and Ikervis will make future access easier.

Acetyl-cysteine - acetyl-cysteine can be used to dissolve the mucous that sometimes accumulates when tears have a low aqueous content. In eyedrop form, acetyl-cysteine must also be prepared by a compounding pharmacist.

Punctal plugs – when artificial tears and lubricants are insufficient to relieve the symptoms of aqueous deficient dry eye, punctal plugs are used to block the entry to the channels where the tears normally drain, allowing the tears to remain longer in contact with the eye. It is important to resolve all inflammation first before inserting these plugs. The fee for punctal plug insertion is $84.00 per plug for short-term collagen plugs or $251.40 per plug for permanent silicone plugs (in addition to the short consultation fee). To view a short video on how punctal plugs work, go to https://www.youtube.com/watch?v=FkOzu_Xz5RM.

Meibomian Gland Dysfunction

As around 80% of cases of dry eye are evaporative due to mybomian gland dysfunction, this condition frequently requires treatment. Treatment strategies are aimed at either increasing the quantity of oils (meibum) produced by the glands or, more usually, unblocking glands and ensuring the free flow of oils from them. This typically requires the application of heat to "melt" and reduce the viscosity of old thickened oils remaining in the glands before mechanically expressing them. This may need to be repeated a number of times before satisfactory gland function is restored. Some of the treatments outlined above for aqueous insufficiency are also of use in treating evaporative dry eye.

Once the meibomian glands have been heated, there are a number of techniques and instruments that can be used to express the glands. Two examples are expression with forceps (go to https://www.youtube.com/watch?v=Lapguls0Yhk) and expression with Matrota Paddle (go to https://www.youtube.com/watch?v=RinkMHGIKO4). Although occasionally we employ forced expression of the glands like this to assess the quality of the meibum, generally we now use this relatively infrequently for treatment; even then, very gently rather than with significant force. Other methods for treating meibomian gland dysfunction include:

Restasis (cyclosporin A) - this drop protects and restores the functioning of the lacrimal gland, as well as reducing inflammation in the eye as steroids do, but is more difficult to obtain as it must be prepared by a compounding pharmacist. Being an antibiotic it also has anti-bacterial properties.

Topical **azithromycin** - like Restasis, azithromycin is an antibiotic that has been shown to have significant anti-inflammatory (as well as a less important anti-bacterial) effect on the eyelids. It must also be prepared by a compounding pharmacist.

In-office **Blephasteam®** & manual meibomian gland expression - Blephasteam® is a goggle-based eyelid warming device that provides moisture and heat in the form of steam, to be used prior to manual expression of the meibomian glands. These heating goggles are worn for about ten minutes prior to gland expression. As noted above, manual expression for treatment purposes tends to be employed infrequently and only at very gentle levels. Go to http://www.blephasteam.com/home.htm for more information on Blephasteam®

In-office **LipiFlow®** automated thermal pulsation treatment - Lipiflow® works on the same principles as Blephasteam® and manual meibomian gland expression, but more precisely controls the heat and pressure applied to the inner eyelids over a single treatment session that typically lasts around 15 minutes. Especially for more difficult and entrenched cases of meibomian gland dysfunction, LipiFlow® is often the treatment of choice due to its consistency and repeatability, and relatively gentle mode of action. Importantly, treatment by Lipiflow® is evidence based as its effectiveness has been verified by independent clinical research. Go to http://www.lipiflow.com/ to read more about LipiFlow®.

In-office **eye-light®** low-level light therapy (LLLT) and optimal power energy intense pulsed light (IPL). Intense Pulsed Light (IPL) was originally used by dermatologists for the treatment of rosacea. In the treatment of dry eye, IPL may be used to warm the meibomian glands prior to them sometimes being (gently) manually expressed, much in the way of Blephasteam®. IPL may also calm the small blood vessels that sometimes surround the meibomian glands. Typically IPL is conducted over three or four sessions. For more information about how eye-light® LLLT and OPE IPL works, go to https://woocommerce-993452-3491158.cloudwaysapps.com/wp-content/uploads/2023/11/Handout-eye-light-LLLT-OPE-IPL-patient-information.pdf.

Reviews and Repeat Treatments

Whereas LipiFlow® typically involves only a single treatment followed by a review a few weeks later, the eye-light® LLLT and OPE IPL require at least two and up to four treatment sessions conducted five to ten days apart. Reviews are typically scheduled a few weeks after treatment has been completed, or at any time you feel a need to return.

Because your tear function will have been quantified objectively prior to treatment, improvements can be clearly demonstrated at subsequent reviews using the same tests that were conducted at your initial dry eye assessment.

Summary of Fees

Generally fees for the in-office procedures described above do not attract a Medicare rebate. If a consultation is also conducted in addition to the procedures, however, it may attract a rebate. A summary of the fees for each in-office procedure is as follows:

Dry eye analysis and treatment procedural fees:

- Tear osmolarity analysis $42.30
- Blephex lid cleaning $53.70 *
- Blephasteam and meibomian gland expression $53.70 *
- Lid margin debridement $53.70*
- Collagen punctal plugs $84.00 per plug
- Permanent silicone punctal plugs $251.40 per plug
- eye-light® LLLT $840 for treatment course of up to 4 sessions
- eye-light® OPE IPL $840 for treatment course of up to 4 treatment sessions
- eye-light® LLLT and OPE IPL combined treatments $1,180 for up to 4 sessions
- LipiFlow automated thermal pulsation treatment $1,055 for a single session (consumables included)

Consultation Fees:

* for these visits a short consultation fee of **$67.50** also applies, for which Medicare will provide a rebate of $31.30