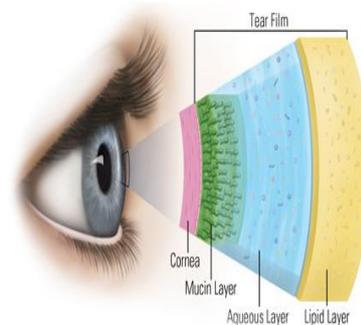


## **Dry Eye Management at the Wellington Eye Clinic**



Tears are composed of three different layers.

1. A lipid layer. This is an oily layer on the outer most surface of the tears. This layer stops your tears from evaporating. The lipid layer is secreted by Meibomian glands which are located along both the upper and lower eyelid margin.
2. An aqueous layer. This is the largest component of the tear film and makes up the bulk of the tears. Aqueous is produced by the lacrimal gland.
3. The mucin layer is the inner most layer of the tear film. It is contact with the surface cells of the cornea. It is responsible for binding the tears to the surface of the eye.

Dry eye has a wide variety of symptoms. People often don't realise that their eyes are dry. Symptoms include;

- Painful, sore, gritty or burning eyes.
- Blurred vision.
- Eyes feel tired or fatigued.
- Watering eyes.

Dry eye can be caused by:

1. Shortage of aqueous / water due to reduced production of water
2. Increased evaporation of water off the eye's surface due to lack of protective oil on the surface of the eye
3. Combination of 1 & 2 above

### **Treatment Options**

Treatment options will vary depending on the type of dry eye that you have. If there is a shortage of water production, it is necessary to increase the supply of water in the tear layer. If there is sufficient water but there is excessive evaporation of the tear layer, then the tears will also be lacking due to them being exposed to the outside world and it is necessary to improve the oil/ lipid layer to reduce evaporation.

Genre		Name	Dosage	Duration	Apply
Lubricant Drops		HyloForte	___Times/day	For ___months	
Lubricant Drops		Thealoz Duo	___Times/day	For ___months	
Lubricant Drops		VitA-Pos	At night	For ___months	
Lubricant Gels		Vidisic	At night	For ___months	
Lubricant Gels		Thealoz Duo Gel	At night	For ___months	
Omega 3s		Omega Eye	4 caps / day	For 3 months minimum	
Warm Compresses		EyeBag/ Optase	10 minutes/day	For ___ weeks	
Q-tip expression		Lower lid	1 minute per eyelid	For ___ weeks	
MiboFlo		Make appointment	10 -12 minutes	For ___sessions	

### **Lubricant drops**

There are many lubricant eyedrops on the market such as Artelac single dose units (SDU), Systane, Tears Naturale, Hyabak, Blink Intensive Tears and more. You can use any drop that you prefer and our only strong recommendation is that you use a drop that is preservative-free. We advise to use drops 4 times per day as a general guideline but drops can be used as often as required, there is no limit to the amount of drops that can be used.

### **Lubricant gels**

VitA-Pos gel is the preferred night time gel due to the fact that it contains oil that is required to protect the watery tear layer from evaporating. Using this gel every night helps to build up the lipid layer on top of the water layer thereby stabilising the tear film and the vision. This gel needs to be warmed, either in your hands or by keeping it in your trouser pockets for a few minutes before use. If the gel is placed in the eye or along the lower lid at room temperature it remains too rigid and often pops out onto the cheek.

Thealoz Duo Gel is a new gel on the market and is also very well tolerated, provides excellent relief from dry eye symptoms and is preservative-free. It is very convenient to use but may not build up the lipid layer quite as much as VitA-Pos does.

There are many other lubricant gels like Artelac Night-time gel, Vidisic, Liposic and more and just as with the lubricant drops, you can try out many of these and simply continue with the gel that you prefer.

### **Oral Omega 3**

The Omega 3 supplement that we recommend is the only one to our knowledge that has shown in published results to have a beneficial effect on the tear film. Omega 3 supplements need to contain EPA and DHA in the following amounts (560 and 1580mg respectively) to have value. Taking 4 Omega Eye capsules daily is equal to eating 37 cans of tuna per week. There are alternatives to Omega Eye like flaxseed oil and krill oil but they need to contain the same amount of EPA and DHA as Omega Eye to be as effective.

## **Warm Compresses**

There are a number of videos on the Wellington Eye Clinic website that demonstrate the use of an eye bag and doing warm compresses with a hot cloth. Doing them with a hot cloth is hard work and most times people tend to give up on this method of hot compresses within a couple of weeks. With an eye bag that heats in a microwave oven, better outcomes are achieved thanks to improved compliance. We recommend two brands of microwavable eye bags; The Eye Bag and Optase.

How to do warm compresses:

- Place an eye bag or microwavable heat pad into the microwave as per instructions on bag
- Be sure to check the temperature of the compress, making sure it's not too hot.
- Find a comfortable place to sit down where you can recline your head. Place the compress over the eyes for at least 10 minutes. The heat tends to make the meibum secretions softer and dilate the glands slightly thereby facilitating the expression of the oily meibum. This should ideally be followed by Meibomian gland expression which is explained below.

To see the videos, go to [www.wellingtoneyeclinic.com](http://www.wellingtoneyeclinic.com) and use the search function (top right of the screen, a small magnifying glass icon) to search for "Warm compresses" – there is a video demonstrating the manual technique with a warm cloth as well as the EyeBag or Optase mask that is warmed up in the microwave oven.

## **Meibomian Gland Q-tip Expression**

Once the warm compress has been done, it is best to express the glands by massaging them with a Q-tip/cotton bud. This takes about one minute per eye lid and is generally only performed on the lower lid. When this material is expressed into the tear film it may be uncomfortable initially as the material is old and possibly inflamed. Within a few days to weeks however, once the older oils have been expressed, the new healthy oils will start moving through the glands and the comfort levels will increase significantly.

To see the videos on Meibomian gland expression, go to [www.wellingtoneyeclinic.com](http://www.wellingtoneyeclinic.com) and use the search function (top right of the screen, a small magnifying glass icon) to search for "Meibomian Gland Expression"

### **MiboFlow**

This is a device that helps open the Meibomian glands and helps to express oils. We are all supposed to floss between our teeth on a regular basis and those that have been to a dental hygienist would realise that they do a more thorough job of cleaning our teeth than what we can do at home. This analogy works well for Meibomian gland expression too. MiboFlow would be the equivalent of the dental hygienist performing the teeth cleaning rather than you yourself. MiboFlow is more effective than doing your own warm compresses and Q-tip expression. Treatments last for 8 to 12 minutes and are very comfortable. They are applied by one of the nurses or ophthalmic technicians. Most people find maximum benefit after 3 treatments and the effect of the treatment is increased by continuing warm compresses and Q-tip expression at home between the MiboFlow treatments.

### **Additional drops**

Prednisolone drops are cortisone drops that are very potent anti-inflammatory agents. The preservative-free drop is called Pred Minims and they are normally used 4 times per day. If they are used for a period longer than 7 days, they should not be stopped abruptly once they are no longer needed. Instead they should be tapered according to a schedule that will be given to you. This schedule would often be along the lines of going from 4 times per day to 3 times per day for a week, then twice a day for a week and finally once per day for a week. If they are stopped abruptly, a condition called “rebound” can occur whereby the eye becomes red and irritated again.

FML or Pred-Mild drops are sometimes prescribed once the Pred taper has been completed. These drops are 10 times less potent than Pred and once the once per day schedule has been completed for Pred, a 4 x / day schedule can be initiated for FML or Pred-Mild. Because these drops are so much less potent they are less likely to cause an increase in intra-ocular pressure and they can be continued for longer.

Restasis or iKervis are both anti-inflammatory drops (cyclosporine) and they help the tear gland produce more water for the tear layer. They are used either once or twice per day and both may first irritate the eye and cause redness before starting to demonstrate their beneficial effect. They can be used for 6 months and longer and sometimes patients remain on 1 drop per day life-long.