

## Understanding Dry Eye

At Options Eyecare, we have developed a dedicated Dry Eye Clinic to help our patients understand, treat and manage the symptoms of dry eye syndrome. Dry eye syndrome is an irritating and variable condition, ranging from general eye discomfort to severe impacts upon daily activities and quality of life. Dry eye syndrome is very common and can be caused by a variety of factors, so it's only by discussing your symptoms and examining your eyes that we can determine the best treatment plan for your condition.

### What is Dry Eye?

Dry eye, also called dry eye disease (DED) or dry eye syndrome, occurs when the eyes do not produce enough tears or when tears evaporate too quickly. This leads to insufficient lubrication and moisture on the surface of the eyes, causing discomfort and potentially affecting vision.

### Symptoms of Dry Eye

- Stinging, burning, itching, dry or gritty sensation
- Redness or eye irritation
- Blurry/filmy vision that varies with blinking
- Sensitivity to light
- A feeling that something is in the eye
- Excessive tearing and watery eyes (in response to dryness)
- Eyes feeling heavy or tired, wanting to close or rest your eyes

### Understanding your Tear Film

Tears are made up of three layers: an oily layer on the outside, a watery (aqueous) layer in the middle, and an inner mucus layer which helps to bind the tears to your eye. The aqueous layer is produced primarily by the **lacrimal gland**, which sits near your outer eyebrow. The oily layer is made by **meibomian glands** in your upper and lower eyelids. The mucus layer is made by **goblet cells** in your conjunctiva, the clear membrane that sits over the white part of your eye.

### Diagnosis

Your optometrist may use various tests to diagnose dry eye, including:

- Examination of eyelids and eyelashes under the microscope
- **Tear break-up time (TBUT):** Measures how long tears remain stable on the eye surface.
- **Schirmer test:** Measures the amount of tear production over time.
- **Ocular surface staining:** Uses dyes to highlight dry patches on the eye.
- **Meibography:** special imaging equipment to view the condition of the meibomian glands in the eyelids

## Types of Dry Eye

### 1. Aqueous Deficient Dry Eye:

- Caused by insufficient tear production from the tear glands (lacrimal glands).
- May be associated with autoimmune conditions like Sjögren's syndrome.
- Non-Sjogren's Syndrome Aqueous Deficiency can result from scarring on the eye, decreased nerve sensitivity, or from certain systemic medications such as antihistamines, beta-blockers, and diuretics.

### 2. Evaporative Dry Eye:

- Occurs when the tears evaporate too quickly due to poor tear quality.
- Often linked to issues with the meibomian glands

### 3. Mixed Dry Eye:

- A combination of both aqueous deficiency and evaporative dry eye.

## Common Causes of Dry Eye

- **Blepharitis or Meibomian Gland Dysfunction**
- **Ageing:** Tear production naturally declines with age.
- **Hormonal changes** particularly associated with menopause
- **Screen Time:** Prolonged use of screens reduces blinking, leading to faster tear evaporation.
- **Environmental Factors:** Exposure to wind, dry air, or air conditioning can dry out the eyes. Dust, smoke, or perfumes/fragrances can also irritate the eyes.
- **Medications:** Antihistamines, antidepressants, and certain blood pressure medications can reduce tear production. Roaccutane (isotretinoin) and face creams containing retinol can affect meibomian gland function.
- **Medical Conditions:** Autoimmune diseases like Sjögren's syndrome, rheumatoid arthritis, or thyroid disorders.
- **Eye Surgeries:** Procedures like LASIK or cataract surgery can sometimes lead to temporary or chronic dry eye.
- **Eyelid positioning problems** such as with ectropion (eyelid rolling out), Bell's palsy, incomplete closure of eyelids at night (lagophthalmos)
- **Ocular allergies** can disrupt the ocular surface and normal tear balance
- **Contact Lens Wear:** Can interfere with natural tear production.
- **Lifestyle:** diet, smoking, alcohol, tea/coffee, dehydration

## Dry Eye Treatment Options

Dry eye is a chronic condition – it can't be “cured”, but there are lots of treatment options available today to improve your symptoms and quality of life.

### 1. Lifestyle Changes and Self-Care

- Take breaks from screens to reduce eye strain and encourage blinking.
- Use a humidifier to increase moisture in the air.
- Wear sunglasses to protect eyes from wind and dry air.
- Maintain good hydration throughout the day

### 2. Artificial Tears and Eye Drops

- Over-the-counter lubricating drops provide temporary relief from symptoms by helping to rehydrate and lubricate the eyes.
- **Preservative-free** eye drops are recommended to avoid further irritation from preservatives.
- Various products are available depending on the severity of your symptoms, including drops with a watery-consistency, gels, ointments, oil-containing drops to augment the top layer of your tears, and Manuka Honey dry eye drops.

### 3. Managing Meibomian Gland Dysfunction (MGD)

- Warm compresses and eyelid massages at home to improve oil flow.
- Heat treatment and meibomian gland expression in-clinic to unblock the meibomian glands.
- **IPL** (Intense Pulsed Light) in-clinic treatment to improve meibomian gland function and reduce inflammation in the eyes

### 4. Lid hygiene products

- Lid foams or pre-moistened wipes to help clear away blepharitis and bacterial biofilm that can build up on the eyelids and eyelashes.
- The old-fashioned method was to use diluted baby shampoo, but there are much more effective and convenient products available today.
- Some products contain tea-tree oil, which is very effective but can be irritating to sensitive skin.

### 5. Omega-3 Supplements

- Omega-3 fatty acids from fish oil or flaxseed may improve tear quality.
- The current recommendations are for 1000-3000mg of re-esterified EPA/DHA daily.
- Omega-3 supplements take a few months of regular use to have an appreciable effect, but work well as a long-term measure to reduce inflammation.
- It is good to check with your GP/pharmacist before commencing omega-3 supplements.

## 6. Prescription Medications

- **Anti-inflammatory eye drops (e.g. steroids, cyclosporine)** reduce inflammation and improve tear production. Steroid drops can only be used for short courses due to potential side effects. Cyclosporine eye drops can be used longer term and do not interact with any systemic medications.
- **Antibiotics.** Eyedrops or oral antibiotics like doxycycline or azithromycin are sometimes used to help control inflammation in the eyes.

## 7. Punctal plugs

- These are tiny silicone or collagen devices inserted into the tear ducts to retain tears on the eye's surface longer. These work best for cases of aqueous-deficiency dry eye.

## 8. Moisture Goggles and Eye Shields

- These protect the eyes from evaporation, especially during sleep.
- Scleral contact lenses may be used in some cases to provide a protective barrier for the eye during the day.

## Conclusion

Dry eye is a common but manageable condition. With the right combination of lifestyle adjustments, treatments, and regular check-ups, most people can experience relief and maintain good eye health.