

# Don't cry – Relief for dry eye

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## Introduction

Dry eye syndrome, dysfunctional tear syndrome and keratoconjunctivitis sicca are medical terms for dry eye. It is a common condition and many factors may contribute to dry eye disease. It affects more women than men and the incidence increases with age. Dry eye is important as it may influence vision, workplace productivity, daily activities as well as social and physical functioning.

## Symptoms

Patients with dry eye usually have symptoms of chronic eye irritation. Other complaints include dryness or excessive tearing (watery eyes), redness, a burning or gritty feeling (may feel as if there is a foreign object in the eye). The eye may also be sensitive to light and some patients may experience blurred vision.

## Understanding the condition

Dry eye may be related to an increase in evaporative loss or due to a decrease in tear production.

### Increase in water loss from the surface of the eye

Meibomian gland dysfunction is the most common cause of excessive water loss from the surface of the eye. Other factors that may increase the evaporation of the tear film include:

- Structural abnormalities of eyelid position
- Reduced blink function
- Topical medicated eye drop use

- Use of eye drops containing preservatives
- Long-term contact lens wear or
- Eye allergy syndromes such as allergic conjunctivitis

### Decrease in tear production

A decrease in tear production can be divided into Sjögren syndrome (a systemic autoimmune disease) or non-Sjögren syndrome (i.e. age-related dry eye, contact lens use or the use of medicines such as antihistamines).

## Treatment for dry eyes

Dry eye disease is typically treated with 'artificial tears' preparations. Treatments are aimed at slowing the rate at which tears evaporate, reducing the resorption of tears and supplementing or increasing tear production, thereby relieving symptoms.

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### Artificial tears products

Eye drops containing hypromellose (hydroxypropylmethylcellulose), carmellose (carboxymethylcellulose), methylcellulose, polyvinyl alcohol or povidone are widely used. Carbomer, in liquid gel formulations, and ointments containing soft or liquid paraffin and liquid lanolin are also used.

- Eye drops containing hypromellose, carmellose or methylcellulose, are usually recommended for daytime use. These formulations are less viscous and may be suitable options with which to start treatment. However, they only provide temporary relief and require frequent application. These eye drops may be used as often as needed, but

frequent use of products that contain a preservative may cause eye sensitivity, in which case a preservative-free formulation is preferred.

- Artificial tear gels and ointments have a higher viscosity and may provide relief for patients who feel that eye drops are not providing adequate symptom relief. Products containing carbomers or polyvinyl alcohol are more viscous than hypromellose-containing products and need to be used less frequently. Ointments containing paraffin or oily substances such as lanolin have a longer duration of action than drops and gels, but tend to blur vision and are most suitable for use at night.

Patients who wear contact lenses should be cautioned not to wear contact lenses while using an eye ointment.

#### Preservative-free eye drops

**Some eye drops are available as preservative-free, single-use formulations. Preservative-free eye drops may be recommended for patients who:**

- Cannot tolerate preservatives
- Suffer from more severe dry eye disease
- Use other eye drops
- Use drops frequently (more often than four to six times per day.) This will help to reduce the risk of toxicity from preservatives or
- Wear soft contact lenses; preservatives such as benzalkonium chloride may accumulate in soft lenses. Patients should use preservative-free formulations that are compatible with their lenses.

### Supplements

Omega-3 and omega-6 fatty acids may improve symptoms of dry eye.

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### Conclusion

Dry eye is often a chronic condition and patients may need indefinite treatment. Artificial tears have been shown to improve eye irritation, visual acuity and are considered first-line treatment for dry eye. Artificial tears are recommended for patients with mild or moderate symptoms. Preservative-free artificial tears, with or without an eye lubricant ointment to use at night, may be considered for patients with severe or persistent symptoms.

In addition to treatment, patients should be advised to:

- Blink often, especially when reading or working on a computer
- Minimise exposure to heating or air conditioning
- Use humidifiers

### Bibliography

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