

Why is your eye dry?

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Introduction

Dry eye syndrome, also known as dry eyes, is a common condition that occurs when the eyes don't produce enough tears, or the quality of the tears is poor. Tears help lubricate and nourish the eyes. They also wash away foreign matter and keep the surface of the eyes smooth and clear. Without enough tears, the eyes can become dry, irritated, and inflamed. Dry eyes feel uncomfortable and may sting or burn and could even cause vision problems.

In certain situations, a person may be more prone to experience dry eyes, such as on an aeroplane, in an air-conditioned room, while riding a bike, spending time outside in windy areas or after looking at a computer screen for an extended period. Another reason for dry eyes can be an inadequate quality and quantity of tear production or when tear production and drainage are out of balance.

When there is inadequate amount of tear production, it could be attributed to age, various medical conditions or as a side effect of certain medications. Tears are made up of three layers, namely oil, water, and mucus. A smooth oil layer helps prevent evaporation of the water layer, while the mucin layer spreads the tears evenly over the surface of the eye. Poor quality of tears occurs when one of the three layers develops a deficiency.

Types of dry eye disease

There are three types of dry eye disease.

- **Aqueous deficient dry eye:** This is when the eyes don't produce enough tears. The lacrimal gland (in the upper, outer corner of each eye) produces the aqueous tears. These tears make up the middle, watery layer of the tear film. Some autoimmune conditions like Sjogren's syndrome and rheumatoid arthritis can cause inflammation in the lacrimal gland and prevent it from producing enough aqueous tears.
- **Evaporative dry eye:** This is when the tears evaporate too quickly. One of the most common causes is meibomian

gland dysfunction. This means the glands in the eyelids that produce the outer, oily layer of the tear film don't work properly. As a result, the oily layer is unstable and can't protect the watery layer from drying up.

- **Mixed dry eye:** Some people have aqueous tear deficiency and tear instability. This means the eyes don't produce enough tears, plus the tear film is unstable.

Some people are more prone to getting dry eyes than others. For example, older adults, women, and people wearing contact lenses are likelier to experience dry eyes.

Causes

The causes of dry eyes can be multifactorial, but some common ones include:

- Ageing – dry eyes are a part of the natural ageing process, and many people over 65 experience the symptoms of dry eyes.
- Hormonal changes during pregnancy or during and after menopause can cause dry eyes.
- Environmental factors such as dry air (weather-related or because of air-conditioning), wind, and pollution like smoke.
- A diet low in vitamin A (found in liver, carrots and broccoli) or omega-3 fatty acids (found in fish, walnuts and vegetable oils) is also a risk factor for experiencing dry eyes.
- Medical conditions such as diabetes, autoimmune disorders, and thyroid problems.
- Certain medications such as antihistamines, decongestants, diuretics, certain heart medications, birth control pills, tranquilisers, and some antidepressants.

Symptoms

Symptoms of dry eyes can vary, but common ones include:

- A stinging, burning, gritty or scratchy sensation in the eye often accompanied by the feeling of something in the eye
- Redness and irritation in the eyes

Table I: Treatment options for dry eye syndrome

Drop	Dosage	Indications	Contraindications and warnings
Artelac® Advanced Lipids Eye Lubricant Drops	<ul style="list-style-type: none"> 1 drop into the conjunctival sac 3–5 times daily or more frequently 	<ul style="list-style-type: none"> Suitable for aqueous-tear deficiencies, lipid deficiencies and mucin deficiencies Preservative free 	
Artelac® Intense Rebalance Eye Drops	<ul style="list-style-type: none"> 1 drop into conjunctival sac 3–5 times daily or more frequently Compatible with all types of contact lenses 	<ul style="list-style-type: none"> Multi-component product relieves symptoms caused by chronic tear dysfunction, such as burning and tired, gritty, red and/or inflamed, painful eyes Preservative free 	
Artelac® Moisture Eye Drops	<ul style="list-style-type: none"> 1 drop into corner of the eye 3–5 times daily as needed Suitable for use in children 	<ul style="list-style-type: none"> Keeps the surface of the eye moist when production of tears is less than normal Preservative free 	
Duratears® Eye Ointment	<ul style="list-style-type: none"> Insert small ribbon of ointment in conjunctival sac, or affected area 	<ul style="list-style-type: none"> Useful as a lubricant for the eye 	<ul style="list-style-type: none"> Do not touch the tip of the tube or dropper to any surface If ocular irritation persists, discontinue use
Rohto® Eye Drops Dry Aid™	<ul style="list-style-type: none"> 1–2 drops into the affected eye as needed 	<ul style="list-style-type: none"> Mimics natural tears to restore natural tear film with long-lasting hydration and protection 	<ul style="list-style-type: none"> Remove contact lenses before use, apply drops and wait 15–20 minutes before wearing contact lenses again For adults and children over 6 years old
Systane® Balance Lubricant Eye Drops	<ul style="list-style-type: none"> May be used as needed throughout the day 	<ul style="list-style-type: none"> Dry-eye therapy for temporary relief of burning and irritation May be used to treat dry eye associated with contact lens usage Contains polyquaternium-1 as preservative 	<ul style="list-style-type: none"> The safety of use in pregnancy and lactation has not been established Instil drops 10 minutes before inserting contact lenses and after removal of contact lenses
Systane® Ultra Lubricant Eye Drops	<ul style="list-style-type: none"> 1–2 drops in the eye(s) as needed Can be used while wearing contact lenses 	<ul style="list-style-type: none"> Dry-eye therapy for temporary relief of burning and irritation Contains polyquaternium-1 as preservative 	<ul style="list-style-type: none"> The safety of use in pregnancy and lactation has not been established Can be used while wearing contact lenses when minor irritation, discomfort or blurring occurs
Tears Naturale® II Ophthalmic Solution	<ul style="list-style-type: none"> 1–2 drops as frequently as required 	<ul style="list-style-type: none"> An artificial tear treatment for both mucin-deficient and aqueous-deficient dry eye conditions Contains polyquaternium-1 as preservative 	
optive Plus Eye Drops™	<ul style="list-style-type: none"> 1–2 drops as frequently as required 	<ul style="list-style-type: none"> Triple-action formula that lubricates the surface of the eye and moisturises the ocular surface cells by restoring osmotic balance plus protecting natural tears with a lipid enhancement 	<ul style="list-style-type: none"> Allow 5 minutes between the administration of ophthalmic products
Xailin® Gel	<ul style="list-style-type: none"> 1 drop 2–4 times a day 	<ul style="list-style-type: none"> Lubricates and protects the eye in certain eye conditions, and provides long-lasting relief of dry eye sensations Preservative-free (in the eye) 	<ul style="list-style-type: none"> The safety of use in pregnancy or while breastfeeding has not been established
Xailin® Night (Ointment)	<ul style="list-style-type: none"> Can be used as often as required 	<ul style="list-style-type: none"> Provides strong, soothing night-time relief of dry eye sensations; acts as a barrier against moisture loss; ideal for use at bedtime Preservative free 	<ul style="list-style-type: none"> Not to be used if allergic to lanolin alcohols
Xailin Plus 0.2 % HA	<ul style="list-style-type: none"> 1 drop in conjunctival sac 3–4 times per day 	<ul style="list-style-type: none"> Maintains and restores the condition of the eye surface for prompt and lasting relief from dry, irritated and tired eyes due to external factors Preservative free 	<ul style="list-style-type: none"> Do not touch eye or any surface with the tip of the dropper
Xailin® Hydrate	<ul style="list-style-type: none"> 1-2 drops 2–4 times per day 	<ul style="list-style-type: none"> Lubricates and protects the eyes, and provides immediate relief of dry eye sensations Preservative-free (in the eye) 	<ul style="list-style-type: none"> The safety of use in pregnancy or while breastfeeding has not been established

Drop	Dosage	Indications	Contraindications and warnings
Xailin® Fresh (vials)	• 1 drop 2–4 times a day	<ul style="list-style-type: none"> • Daily, single-dose solution for soothing and lubricating dry, red and irritated eyes • Preservative free 	• Can be used on contact lenses
VisuXL®	• 1 drop into conjunctival sac of each eye 2 times per day	<ul style="list-style-type: none"> • Everyday solution for moderate to severe dry eye • Preservative free 	• Can be used with contact lenses
VisuXL® Gel	• 1 drop into conjunctival sac of each eye 2 times per day	<ul style="list-style-type: none"> • A highly effective treatment in case of: <ul style="list-style-type: none"> • Moderate to severe dry eye; • Foreign body trauma; • Alterations in the continuity of the corneal and conjunctival surfaces after refractive corneal surgery and corneal transplant • Preservative free 	• Can be used with contact lenses
VisuEVO®	• 1 drop into conjunctival sac of each eye 3 times per day	<ul style="list-style-type: none"> • For all forms of evaporative dry eye, to improve the stability of the lipid layer by reducing the evaporation of the aqueous phase, i.e. the tear film • As a pre-treatment for eye surgery • Preservative free 	• Can be used with contact lenses

Note: Always shake the drops before use, and to avoid contamination, never touch the dropper tip of the container to any surface

- Sensitivity to light
- Watery or teary eyes
- Mucus that makes the eyes feel “glued shut” when waking up in the morning
- Blurred vision
- Eye fatigue or eyestrain that often feels worse late in the day
- Difficulty or discomfort when wearing contact lenses

- Blink frequently when using a computer or other digital devices.
- Use a humidifier to add moisture to the air.
- Wear protective eyewear, such as wraparound glasses, when outside on windy or dry days.
- Take breaks from screen time and focus on objects at a distance.
- Avoid smoking and exposure to second-hand smoke.
- Eat a healthy diet rich in omega-3 fatty acids, which are essential for eye health.

Treatment options

Treatments for dry eyes focus on restoring or maintaining the normal amounts of tears required for comfort and maintaining eye health. The best treatment depends on the underlying cause and severity of the condition. Some treatments focus on reversing or managing a condition or factor causing dry eyes. Other treatments can improve the tear quality or stop the tears from quickly draining away from the eyes.

Some common treatments include:

- Artificial tears (eye drops or ointments that help lubricate the eyes)
- Prescription eye drops that help increase tear production or reduce inflammation
- Plugging the openings to the tear ducts with tiny silicone plugs (punctal plugs). These plugs close the tiny opening (punctum) in the inner corner of upper and lower eyelids. This closure conserves both your own tears and artificial tears added.
- Changes in lifestyle or environmental factors (such as using a humidifier, wearing protective eyewear, or taking breaks from screen time)

Contact lens wearers should select preservative-free preparations.

There are also some steps a person can take to avoid getting dry eyes:

Table I summarises some treatment options for dry eye syndrome. Often therapy requires an individual dosage regimen according to the severity and intensity of the symptoms experienced.

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