**DRIED EYE: PATHOLOGY AND TREATMENT TYPES**

The underlying disease process in dry eye disease causes deterioration of the tear film, which leads to either mild or more serious forms of the condition. A variety of treatment types may offer symptomatic relief. By Dawn Connelly

**PATHOLOGY OF DRY EYE DISEASE**

There are two main types of dry eye disease: aqueous deficient dry eye and evaporative dry eye. Both types result in instability of the tear film that bathes, nourishes, and protects the eye, leading to inflammation and potential damage to the eye surface.

**AQUEOUS DEFICIENT DRY EYE**

This condition occurs when the lacrimal glands fail to secrete enough fluid to maintain the liquid layer of the tear film. Causes include meibomian gland dysfunction, allergic conjunctivitis, contact lens wear and low blink rate.

**EVAPORATIVE DRY EYE**

This condition occurs when the meibomian glands fail to secrete enough oily substance to maintain the lipid layer of the tear film. Causes include meibomian gland dysfunction, allergic conjunctivitis, contact lens wear and low blink rate.

**TREATMENT**

MILD DISEASE

Intervention is mild symptoms can initially be treated with lifestyle advice, such as using humidifiers, taking omega-3 fatty acids, and avoiding irritants. Adjunctive treatments include over-the-counter artificial tears, and regular screen breaks.

**SEVERE DISEASE**

For severe dry eye disease, high viscosity lubricants or other products are frequently required.

**PRESERVATIVES**

Common preservative-free antibiotics can cause conjunctival irritation, tear film instability, corneal epithelial toxicity, and a decrease in corneal sensation and tear production. Preservative-free drops are also necessary for severe dry eye disease.

**INFOGRAPHIC**

**TEAR FILM**

- Aqueous humour
- Viscoelastic lubricant
- Mucin layer
- Lipid layer
- Cornea
- Meibomian glands
- Lacrimal gland
- Tear film
- Tear film hyperosmolarity

**TEAR HYPEROSMORALITY**

Where the osmolarity of the tear film exceeds that of plasma, it causes the tear film to become unstable and break up quickly before blinking again.

**PATHOLOGY OF AQUOUS DEFICIENT DRY EYE**

- Hyperosmolarity
- Inability to produce enough fluid
- Aqueous humour
- Aqueous deficient dry eye

**PATHOLOGY OF EVAPORATIVE DRY EYE**

- Dry eye disease
- Meibomian gland dysfunction
- Evaporative dry eye

**REFERRAL ADVICE**

- For same-day specialist: Contact lens issues, recurrent lid margin disease
- For specialist advice: Arthritis, lupus, rheumatoid arthritis, Sjögren’s syndrome, keratoconjunctivitis sicca

**DIAGNOSIS**

- Symptoms include pain, foreign body sensation or photophobia
- Short-term symptoms with a sudden onset
- Reduction of vision that doesn’t return after brief incursion
- Stabiness, tearing and discharge of the eye
- Marked redness of the eye

**THERAPY**

- Dry eye syndrome
- Meibomian gland dysfunction
- Evaporative dry eye
- Aqueous deficient dry eye

**CONCLUSION**

The management of dry eye disease involves a combination of lifestyle changes, over-the-counter treatments, and prescription medications. Early intervention and regular follow-up are key to achieving optimal outcomes.