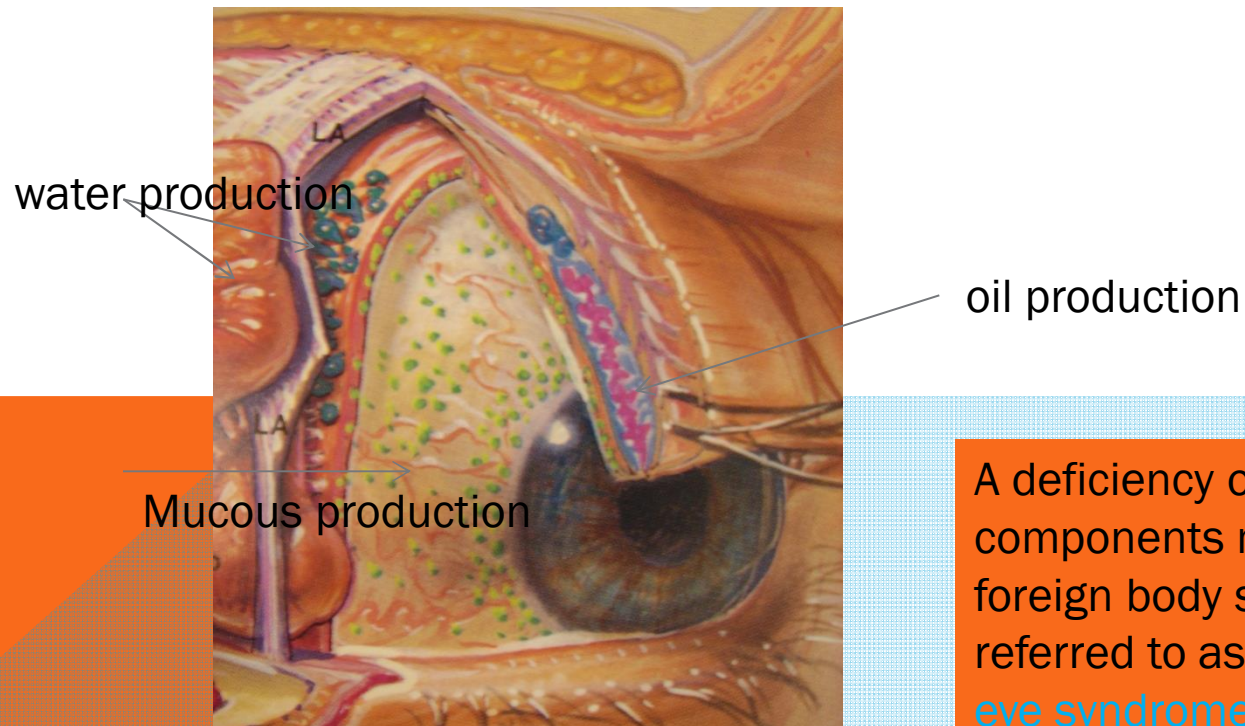


EXCESS TEARING (EPIPHORA)

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TEAR PRODUCTION

The tear film protecting the eye is composed of three constituents: inner layer mucous, middle layer water, outer layer oil

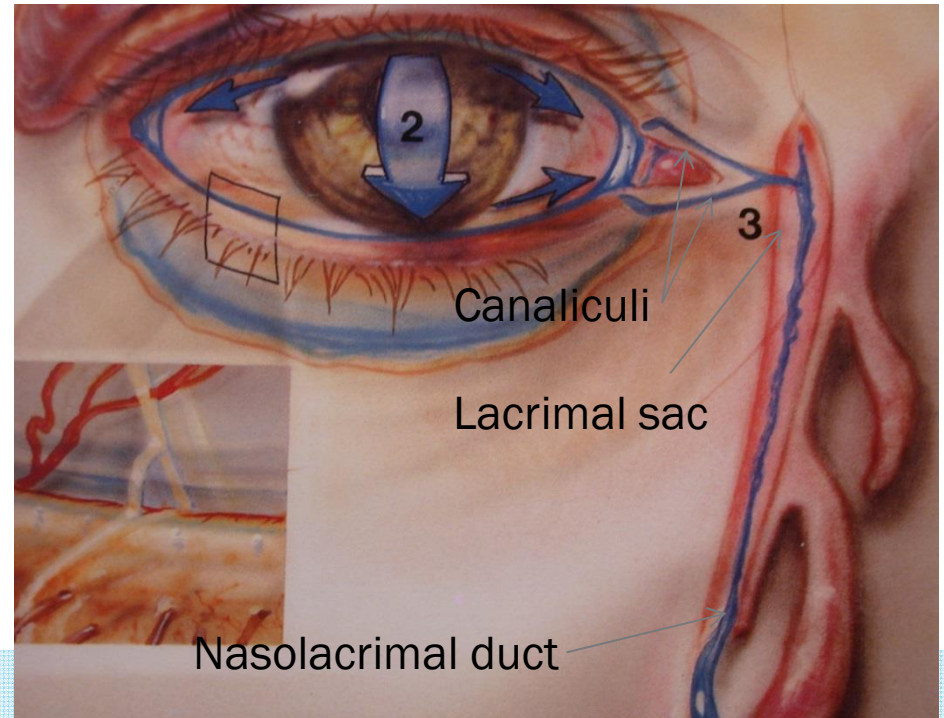


A deficiency of one or more of these components may lead to an ocular foreign body sensation, generally referred to as dry eye syndrome **dry eye syndrome**

TEAR DRAINAGE

Each **blink** of the eyelids mixes the tear film and distributes it evenly over the surface of the cornea, which maintains ocular comfort

Blinking also moves the tears into the drainage system composed of the **canaliculi within the eyelids** and nasolacrimal duct that drains the tears to the nose-explaining why your nose runs when crying or in cold weather



TEARING CAUSES

OBSTRUCTION

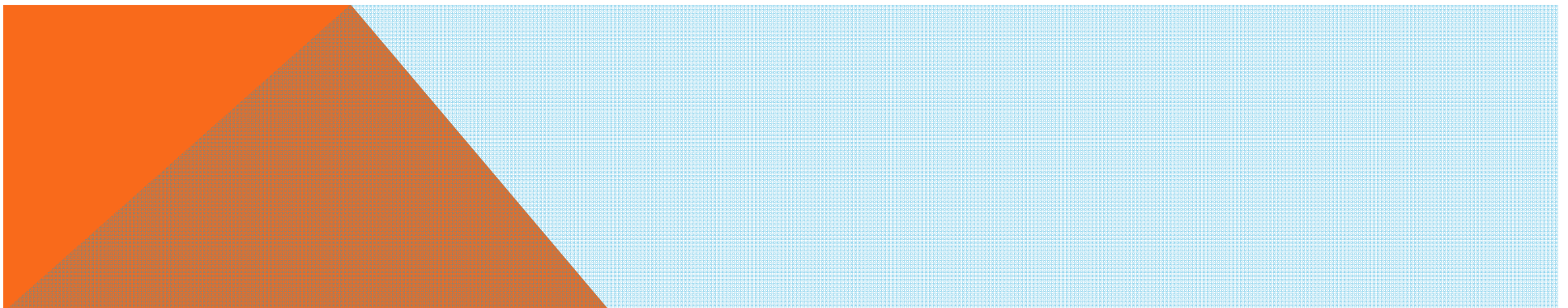
Canalicular obstruction due to trauma (e.g. punctual plugs) and/or infection

Obstruction of the nasolacrimal duct and canalicular obstruction

OVERPRODUCTION

Tear over-production due to irritation (e.g. dry eye) or allergy to drugs or environment are common causes of tearing

Failure of the pumping mechanism is another cause of tearing and is treated by drops with about a 50% success rate



EXCESS TEARING

Obstruction at any point of the lacrimal drainage system can result in excess tearing such as: trauma, infection and stone formation in the lacrimal sac and duct

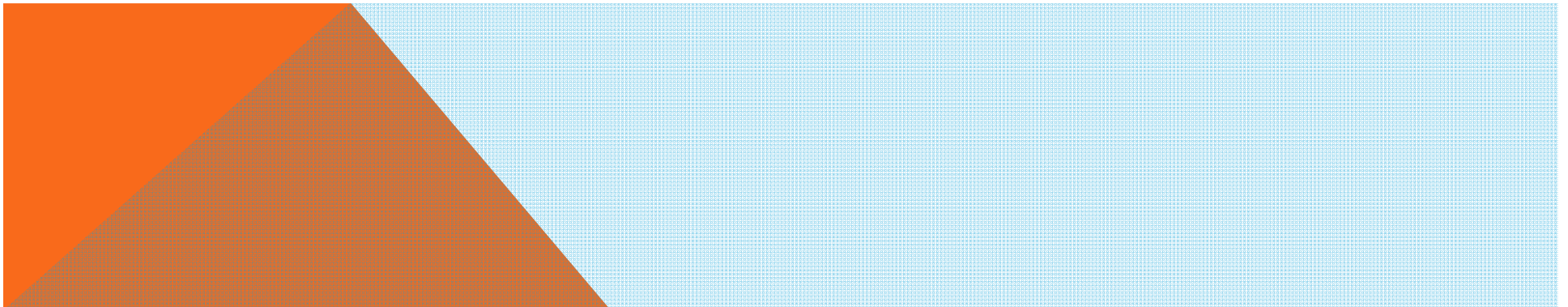
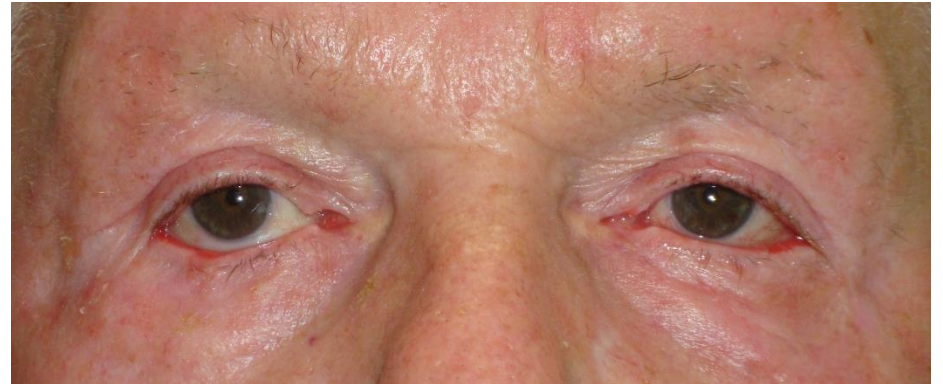


A stone involving the entire nasolacrimal duct and sac

MECHANICAL EYELID DISPLACEMENT

Age-related, traumatic or allergic displacement of the lower eyelid and puncta within the medial lid (**ectropion**) is a mechanical cause of tearing- its correction usually requires surgery. The recurrence rate is about **30%** if the underlying cause is actinic damage to the skin.

In the case of allergic causes, topical steroid treatment may be curative.



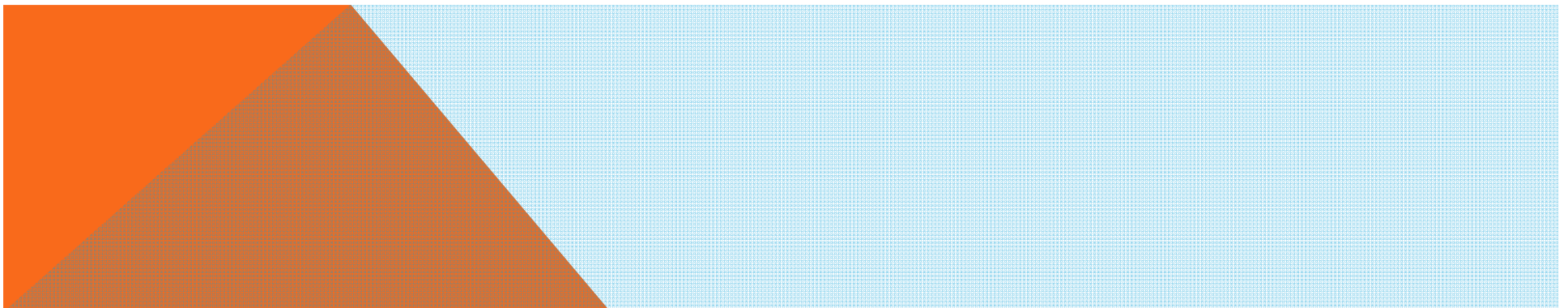
EVALUATION

Testing the patency of the tear drainage system is achieved by irrigation of fluid through the canaliculi of the lower lids.

This test is performed under topical anesthesia and is essential to an accurate diagnosis

If the irrigated fluid reaches the nasal cavity, the tear drainage pathways are open and suggests that tearing symptoms are due to **pump failure**, if other causes of excess tearing are eliminated.

If obstructed, a surgical option may be available if the tearing symptoms warrant.



SURGICAL TREATMENT

Canalicular obstruction: the canaliculi may be restored by microsurgery with insertion of a silicone stent: this technique is performed under general anesthesia. The stents remain in place until tearing resolves (typically 4-6 months). The success rate is about 60%.

Nasolacrimal duct obstruction: this cause of tearing is treated by a **nasolacrimal duct by-pass procedure** known as Dacryocystorhinostomy (DCR). This technique also employs a silicone stent to prevent premature closure of the repaired tissue. The success rate is about 99%. The highest success rate is achieved when the procedure is performed through a small lower lid incision rather than the intranasal route (75%).

