Nasolacrimal Duct Obstruction

What is a tear duct obstruction?

Tears normally drain through small openings in the corners of the upper and lower eyelids called puncta and enter the nose through the nasolacrimal duct. Tear duct obstruction prevents tears from draining through this system normally [See figure 1]. If the tear duct is blocked, there will be backflow of tears and discharge from the eye.

Fig. 1: Tears normally drain through small openings in the corners of the upper and lower eyelids called puncta.

What causes nasolacrimal duct obstruction in children?

The most common cause is the failure of a membrane at the end of the tear duct (valve of Hasner) to open normally at or near the time of birth. Other causes of blocked tear ducts in children include:

- Absent puncta (upper and/or lower eyelids)
- Narrow tear duct system
- Infection
- Nasal bone that blocks the tear duct entering the nose.

How common is nasolacrimal duct obstruction?

Over 5% of infants have symptoms of nasolacrimal duct obstruction affecting one or both eyes. Most (approximately 90%) clear spontaneously during the first year of life.

What are the signs/symptoms of tear duct obstruction?
Blockage of the drainage system causes tears to well up on the surface of the eye and overflow onto the eyelashes, eyelids, and down the cheek. This usually occurs within the first days or weeks of life.

The eyelids can become red and swollen (sometimes stuck together) with yellowish-green discharge when normal eyelid bacteria are not properly "flushed" down the obstructed system. Severe cases result in a serious infection of the tear duct system (dacryocystitis).

**Can a tear duct obstruct intermittently?**

The severity of the signs can vary under different conditions such as upper respiratory illnesses ("colds" or nasal congestion) or outdoor exposure such as wind or cold. If a child has cold, he or she may have increased tearing or discharge.

**How is tear duct obstruction diagnosed?**

A history of tearing and discharge at a very early age is strongly suggestive of a blocked tear duct. An ophthalmologist is able to perform certain tests in the office to confirm the diagnosis. It is important that the eyes be examined for uncommon but important other causes of tearing in infants including [childhood glaucoma](https://www.aapos.org/).  

**What is the treatment of a blocked tear duct?**

Fortunately, tear duct obstruction resolves spontaneously in a high percentage of cases. When obstruction is persistent, one or more of the following treatments may be recommended: tear duct massage, topical antibiotic eye drops, tear duct probing, balloon tear duct dilation, and/or tear duct intubation.

**How does tear duct massage work?**

Tear duct massage can be performed at home to help the tear duct open. A pediatric ophthalmologist or primary care physician can demonstrate the most effective massage technique.
When should topical antibiotics be used?

Antibiotic eye drops or ointment may be used to treat discharge or mattering around the eye. The medication does not open the blocked tear duct and symptoms often recur when the eye drops are discontinued.

When should tear duct probing be performed?

If the tear duct remains blocked after one year of age, a nasolacrimal duct probing may be performed.

How does tear duct probing work?

A smooth probe (resembling a thin straight wire) is gently passed through the tear duct and into the nose. Using probes of progressively larger diameters can widen a tear duct system.

What type of anesthesia is used for tear duct probing?

Some younger children have a tear duct probing done in the office using topical anesthetic drops. Older children usually have a brief general anesthetic in an outpatient surgery setting. Sometimes a tube (stent) is placed in the nasolacrimal system while a child is asleep to prevent recurrence of tearing.

How successful is tear duct probing?

Tear duct probing is generally very successful. Additional procedures with enhancements are sometimes necessary. In some cases, a more involved operation may be needed to open the tear duct system (dacryocystorhinostomy, DCR).
More technical information may be found on the [EyeWiki Site](#).

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