

## Patient information

# **Dacryocystorhinostomy (Tear Duct Bypass Surgery)**

## Department of Ophthalmology

### **Who is this leaflet for?**

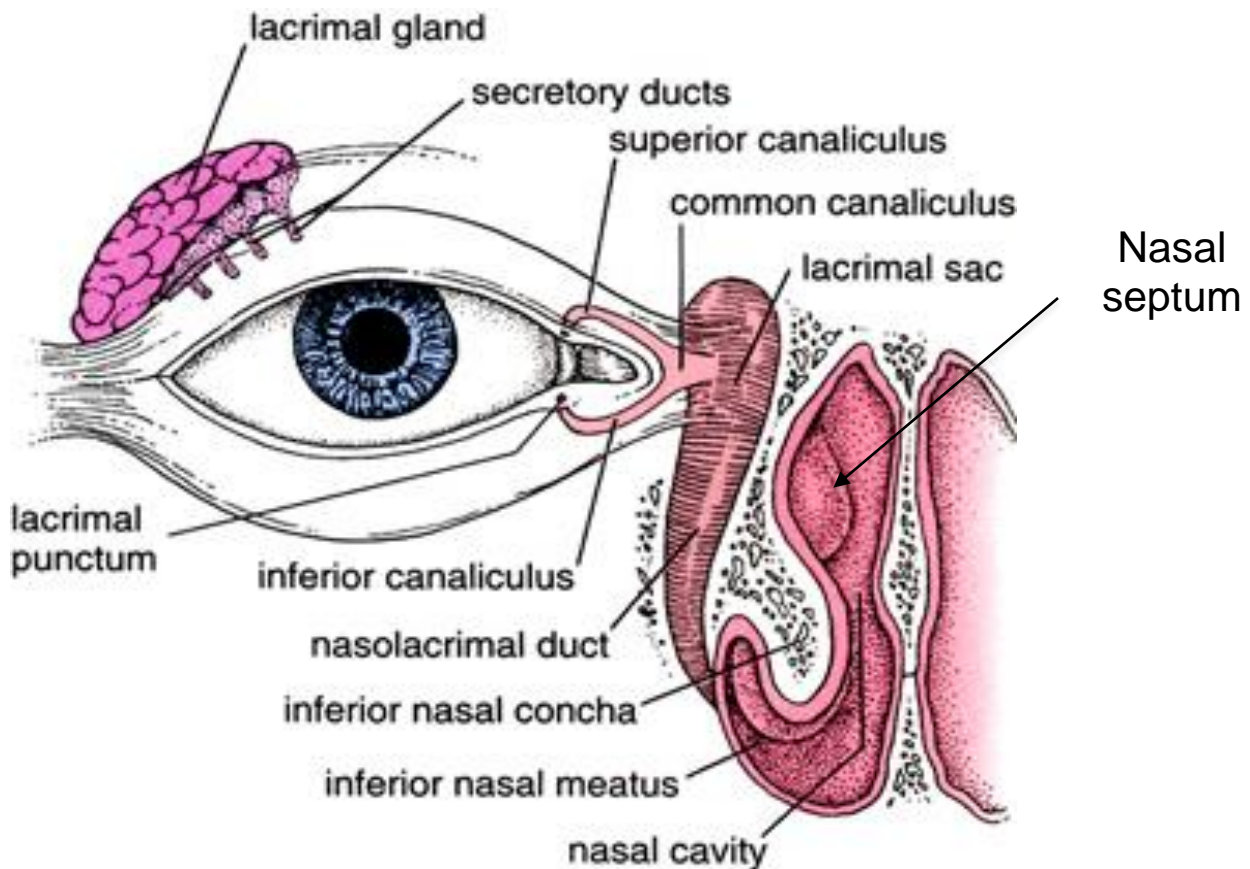
This leaflet is for people who are undergoing surgery for a watery eye, due to a blocked tear duct.

### **What is a blocked tear duct?**

The drainage of tears begins in the eyelid close to the nose. Where the eyelid touches the eyeball, there is a tiny opening called the punctum.

- The punctum is the beginning of a tiny tube called the canaliculus, which runs from the punctum to the lacrimal sac.
- The lacrimal sac is situated beneath the skin in the corner between the nose and the eyelids.
- After tears have collected in the lacrimal sac they flow down the nasolacrimal duct into the nose.
- The flow of tears can be blocked at any point in this drainage system. The commonest site of blockage is the nasolacrimal duct.
- When the tear drainage system is blocked, tears build up on the surface of the eye and overflow onto the cheek.

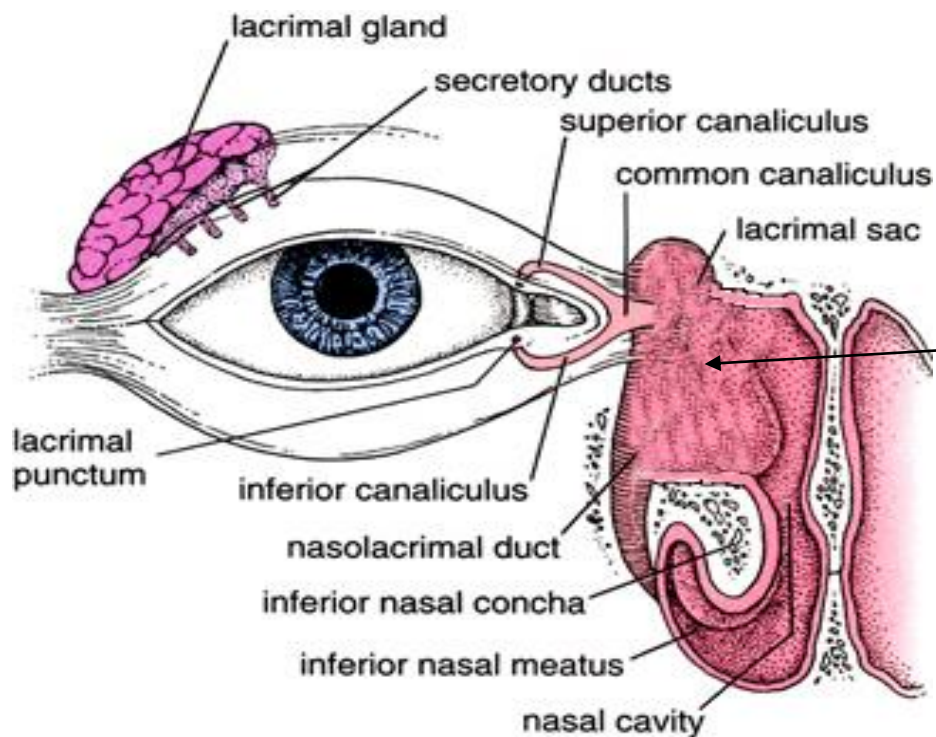
**In some people the tear sac may also fill up with mucous (mucocele) or become infected (acute dacryocystitis).**



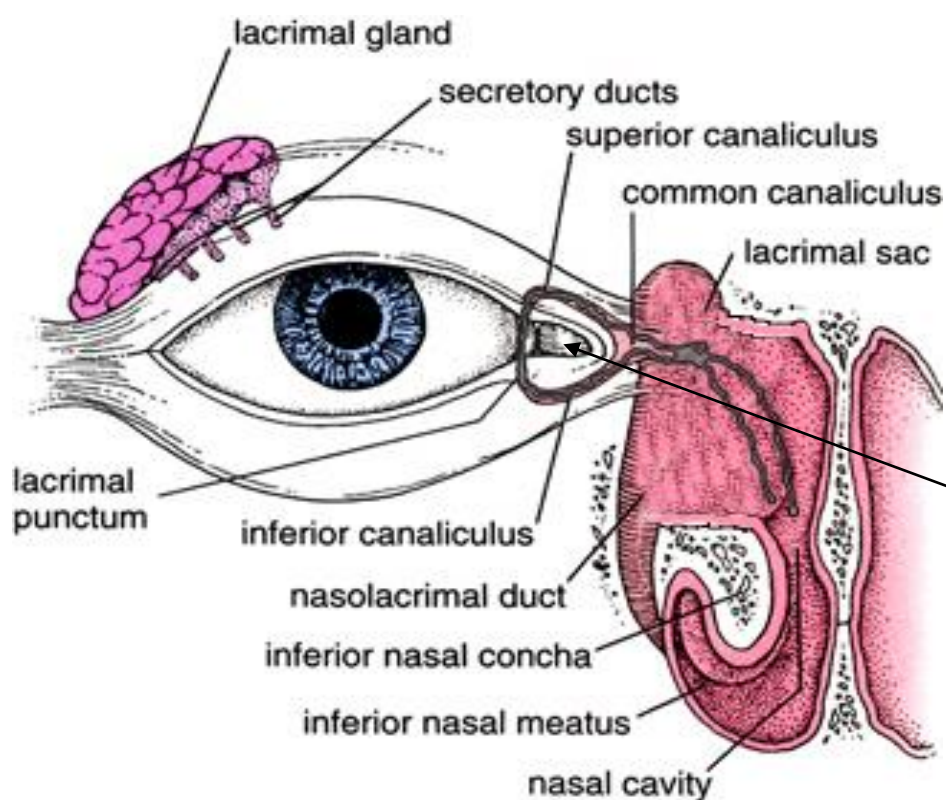
## **What is Dacryocystorhinostomy - DCR?**

Dacryocystorhinostomy or DCR for short, is an operation to bypass the tear duct.

- A small amount of bone is removed in the lateral wall of the nose next to the eye.
- A new passage way is created for tears to flow directly into the nose from the tear sac, bypassing the nasolacrimal duct.
- At the end of the operation a lacrimal stent is placed within the new passageway to prevent scar tissue from closing it. This remains in place for two months in most cases. It is removed painlessly in clinic. No stent is placed if a Lester Jones Tube is used.



**Left** - Bone has been removed, creating a new passage for tears to flow into nose (arrow)



**Below Left** – Lacrimal stent in place (arrow)

## **There are three different operations**

### **❖ External DCR**

- A vertical skin incision is made on the side of the nose in the same area that the footplates of glasses sit.
- Bone is removed using hand held instruments.
- The success rate of this operation is approximately 90%.
- The main advantage of this method is that blockage in both the narrow canaliculus and the nasolacrimal duct can be managed.
- The main disadvantage is the need for a skin incision, which may also weaken eyelid blinking.
- This operation may be carried out under general anaesthesia or local anaesthesia plus intravenous sedation.

### **❖ Endonasal DCR**

- The operation is carried out without a skin incision, using a tiny endoscopic camera, carefully placed inside the nostril.
- A very small drill is used to remove bone.
- The rest of the procedure is very similar to external DCR.
- The success rate is approximately 90%.
- The postoperative care is slightly different involving nasal sprays for two to four weeks.
- The main advantage of this procedure is that it avoids a skin incision.
- This is not only beneficial from a cosmetic point of view but it reduces the small risk of bleeding or infection associated with a skin wound. In addition the strength of blink is not reduced after surgery.

- The main disadvantage is that canalicular obstruction cannot be managed with this procedure.
- Endonasal DCR is only carried out under general anaesthesia.
- Because the operation is carried out inside the nose, approximately one in ten people need a nasal septoplasty. Part of the cartilage of the septum is carefully removed to create more space. This is a relatively straightforward procedure. It carries with it the rare risks of a septal perforation or altered contour of the nose.

### ❖ **Lester Jones Tube endonasal DCR**

- If the canaliculus is severely blocked traditional DCR operations will not work. In this situation the natural tear drainage system needs to be completely bypassed.
- This is done using a Lester Jones Tube. This operation is not an alternative to external / endonasal DCR, it is the only procedure that will work in these cases.
- The L J Tube is made from Pyrex glass and is approximately 1.5cm long and three to four mm in diameter. The top part of it sits in the corner of the eye near to the nose whilst the rest of the tube passes diagonally into the cavity of the nose.
- Tears, which naturally collect in the inner corner of the eye, may then drain down the tube into the nose.
- The operation is carried out using either the endonasal or external technique to make a passageway into the nose for the tube. No lacrimal stent is placed.
- The same benefits and risks as for endonasal DCR apply to this operation.
- Because the tube is man made it is prone to blockage. To prevent this, artificial tear drops need to be instilled every day to keep the tube clear. If it blocks it will need replacing surgically.

- Overall 1/3<sup>rd</sup> of people require one operation, a further 1/3<sup>rd</sup> need two operations and a further 1/3<sup>rd</sup> need multiple surgeries in their lifetime in order to keep the Lester Jones Tube draining tears.
- If you do not like the tube this operation is reversible, in that simply by removing the tube you are no different to prior to surgery.
- This operation is carried out under general anaesthesia.

### **What are the benefits of surgery?**

If successful, tears should not run down the cheek, vision may improve a little and the lower eyelid may become less dry and scaly.

Recurrent discharge and conjunctivitis may also improve.

### **What are the alternatives to surgery?**

There are no alternatives to surgery in bypassing the tear duct.

However some patients weigh up the risks and benefits of surgery and decide to put up with the watery eye, feeling that the risks of surgery are too great for them – it is an individual decision.

Having a blocked tear duct is not life threatening and does not damage the eye, so it is a reasonable option to decline surgery if you wish.

### **What will happen if I decide not to have surgery?**

It is likely that you will continue to have a watery eye however this will not damage your eye in any way.

Some people with blocked tear ducts are at risk of infection of the tear sac (acute dacryocystitis).

This presents as a painful red swelling near the inner corner of the eye (next to the nose) approximately the size of a grape.

It requires antibiotic treatment and you should see a doctor the same day if it occurs.

### **What will happen before surgery?**

- Before the operation your consultant or a member of the team will see you in the clinic.
- The doctor will ask you about your problem. He/she will also ask about other medical problems you have medications you take (bring a list or the tablets themselves with you).
- The doctor will examine your eyes and will determine if the tear duct is blocked by gently flushing it with salt water.
- If you are to proceed with surgery the operation will be discussed in detail. This will include any risks or possible complications of the operation and the method of anaesthesia.
- You will be asked to read and sign a consent form after having the opportunity to ask any questions.
- You will also see a preoperative assessment nurse. You will have blood tests and an ECG (heart tracing) if required. You will be told when you should starve before the operation.

### **What should I do about my medication?**

In some cases you may be asked to stop or reduce the dose of blood thinning tablets like: warfarin, aspirin, clopidogrel (plavix), dipyridamole (persantin), Pradaxa (dabigatran), Xarelto (rivaroxaban), and Eliquis (apixaban).

This decision is made on an individual basis and will be discussed with you before surgery.

**Other medication should be taken as usual unless the pre-operative team instruct you otherwise.**

## **What are the risks and possible complications of surgery?**

**Infection** might present as increased swelling and redness of the skin. There might also be yellow discharge from a wound.

Sinusitis is infection in the sinuses and can also occur. Infection is treated with antibiotics.

**Bleeding** may present as a nose bleed, fresh blood oozing from the site of surgery or a lump appearing near the wound after the operation. Simple pressure on a skin wound is usually enough to control minor bleeding. (See separate nose bleed information sheet).

**Loss of sight:** A blood haematoma collecting in the orbit, behind the eye, may compress the nerve of vision and threaten eyesight.

**It is extremely rare for this to occur.**

It presents as pain, loss of vision and a bulging forwards of the eyeball and is an emergency.

**Meningitis:** If bone removal is too aggressive, a leak of brain fluid (cerebrospinal fluid – CSF) may occur and is itself a risk factor for meningitis.

This is potentially serious but extremely rare – it has never happened to any of the surgeons treating you but has been reported elsewhere.

**Scar:** Whenever the skin is incised a scar may form. Every attempt is made by the surgeon to minimise and hide scars but sometimes they can be visible.

**Lacrimal stent problems:** Part of the operation involves the insertion of lacrimal stents. They may be visible to you if you look closely in the mirror in the corner of the eye close to the nose.

All that should be visible is a short piece of tubing running from the upper lid down into the lower lid. Sometimes the tubing can become more prominent and appear over the eyeball.



If this happens do not pull the tubing. Place some ointment on the eye and try to gently massage the loop of tubing towards the nose. The other end of the tubing is in the nose.

If you find the lacrimal stent in the nostril, don't pull it, instead push it back into the nostril. If these simple measures fail to work contact the eye department.

**Further Surgery:** If the operation is not successful, further surgery may be possible to achieve a good outcome.

### **What type of anaesthesia will I have?**

You should have the opportunity to discuss the risks of anaesthesia with your surgeon or anaesthetist prior to surgery.

Two types of anaesthesia are used for these procedures: local anaesthetic with intravenous sedation or general anaesthesia.

- Sedation means that you are breathing for yourself and don't have a breathing tube inserted but you are very relaxed and sleepy and often don't remember the operation.
- General means you are completely asleep with a breathing tube inserted.

### **What should I expect after surgery?**

- After surgery you may experience some pain due to the removal of bone. Simple paracetamol is usually enough to control this.
- Your nose may feel blocked for up to six weeks after the operation although it often clears long before this.
- The eyelids may be a little bruised or swollen, which may take up to two weeks to settle.
- The eye may still water until the stents (tubes) are removed up to three months later.

## **Post operative Instructions: Dacryocystorhinostomy**

### **All DCR**

- No hot drinks or strenuous activity for 48 hours.
- Eye pad overnight, then removed.
- Sleep at 45 degrees propped up for 48 hours.
- No nose blowing until stents removed. No holding nose if sneezing, place two fingers over the corner of the eye near the nose.
- You may go home the same day if not too distant from the hospital and if you have someone staying with you overnight, If not you may stay in hospital for the first night.
- Nose Bleed Patient Information Sheet to be given to patient.
- Follow up in clinic eight weeks.

### **Specific external DCR instructions**

As for 'All DCR' above plus.

- Apply chloramphenicol ointment to the skin wound three times a day for two weeks.
- For ten days the wound should be cleaned using boiled water that has cooled down and sterile cotton wool balls.

### **Specific endonasal DCR instructions**

As for 'All DCR' above plus.

- Swab taped underneath nostril overnight – remove in the morning.
- Sterimar or similar saline nasal spray four times a day to the operated nostril for four weeks.
- Betamethasone drops, twice a day to affected nostril for four weeks.
- Otrivine drops, twice a day to affected nostril for two weeks.

## **Specific Lester Jones Tube DCR instructions**

As for 'Endonasal DCR' above plus.

- Hypromellose eye drops four times a day indefinitely. Hold nose and suck the drops down the tube.
- If the tube becomes slightly prominent, clean your hands and gently push it back towards the nose. **Don't pull it out altogether.**

## **Feedback**

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

## **Further information**

### **Who do I contact if I have questions or concerns?**

**In an emergency:**

**Tel: 0151 529 0186 / 0187**

**Or**

**Tel: 0151 525 5980**

**Pre-op assessment nurses:**

**Tel: 0151 529 0178 / 0179**

**Secretary for Mr. McCormick:**

**Tel: 0151 529 0142**

**Secretary for Mr. Hsuan:**

**Tel: 0151 529 0142**

# Author: Department of Ophthalmology

## Review date: April 2026

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