

DEPARTMENT OF  
**OPHTHALMOLOGY**

## Dacryocystorhinostomy (DCR) For Nasolacrimal Duct Obstruction



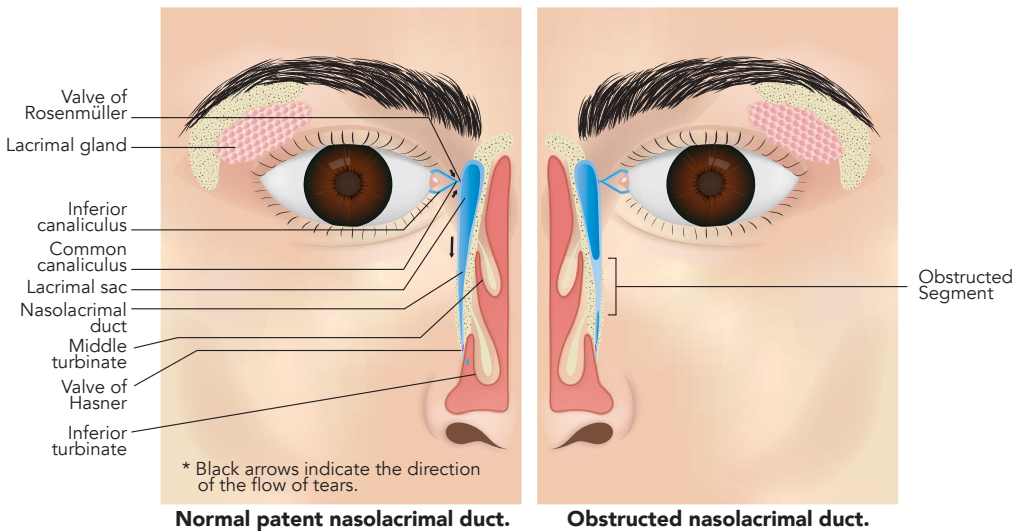
You have been given this information booklet because your ophthalmologist (eye doctor) has recommended dacryocystorhinostomy (DCR) surgery. This information booklet explains what the surgery involves, the risks and benefits of the operation, and how to care for your eyes after surgery.

## UNDERSTANDING DCR SURGERY

### What is Dacryocystorhinostomy (DCR) surgery?

DCR is aimed at creating an osteotomy (a small opening in the bone that surrounds the lacrimal sac) to allow tears to drain and bypass the area of obstruction. The osteotomy becomes a communication between the lacrimal sac (tear reservoir) and the nose. This allows tears to drain along the new bypass route into the nose and then into the throat.

A silicone tube stent is also left to maintain the ostium opening for a period of 6 – 12 weeks, depending on your condition.



**Illustration showing the flow of tears from the eye via the nasolacrimal duct into the nose.**

### Why do I need DCR surgery?

**Nasolacrimal duct obstruction (NLDO)** is the most common indication for DCR surgery.

The original route of the nasolacrimal duct is blocked due to narrowing of the duct from degenerative changes. This prevents tears from entering the nose and draining into the throat, thus resulting in excessive tearing, causing the tears to roll down the cheek throughout the day.

In some cases, there may even be an infection (dacryocystitis) which results in a sticky yellowish/whitish eye discharge instead of tears. In severe cases of dacryocystitis, the eyelids may become swollen and the infection may even spread behind the eyeball.

DCR surgery aims to prevent recurrence of excessive tearing and dacryocystitis (infection).

### **What are the different forms of DCR surgery?**

There are 2 main types of DCR surgery:

#### **1. External DCR**

A small skin incision is usually made on the area between the nose bridge and eyelid.

#### **2. Endoscopic DCR\***

Surgery is performed through the nostril to avoid a skin incision.

\* Your surgeon may perform a nasal endoscopy procedure to determine suitability for this surgical approach.

### **What are the possible complications arising from DCR surgery?**

There are some risks associated with DCR surgery that you need to be aware of.

The following are the major potential complications of a DCR surgery but this is not an exhaustive list of all the risks:

The main risks are that of

- Haemorrhage – due to rebleeding from the nose after surgery.
- Infection – signs include pain, eye discharge, eye swelling, fever, chills.
- Scarring of the skin or internal nasal wound (ostium).
- Cerebrospinal fluid (CSF) leak – leak due to an abnormal fracture line affecting the base of the skull.
- Recurrence/persistence of tearing (this occurs in about 10-15% of cases. Please do note that patients may also have tearing from other conditions.) Thus, some patients may experience some tearing even when the DCR surgery is successful.

As with any surgery, there are also risks from the anaesthetic, including that of stroke and heart attack, which may be life-threatening.

You will be assessed thoroughly by your team of doctors before the operation. Your ophthalmologist will explain these risks to you in more detail before you sign the consent form.

## BEFORE SURGERY

### What do I need to do before the surgery?

Before your operation you will be asked to attend a pre-operative assessment clinic where you will be assessed for fitness for surgery. The doctor or nurse will ask a detailed medical and medication history and you may require blood tests and ECG to ensure you are fit for surgery. You will need to **continue your blood pressure medications** on time as usual if you are known to have hypertension.

**If you take aspirin, or blood-thinning agents such as warfarin,** you will need to check with your physician how you could safely stop these drugs for a period of time **before and after** the surgery.

**The following medications/supplements** need to be **stopped for a minimum of 3 weeks before and after the surgery**, as they can cause significantly more bleeding during and after the surgery:

- Gingko
- Ginseng
- Garlic pills
- Vitamin E
- Fish oils
- Cordyceps

## ON THE DAY OF SURGERY

### What happens on the day of the surgery?

You will be advised when to stop eating and drinking before the operation. You will be asked to arrive either early in the morning if your operation is to be in the morning, or late morning for afternoon surgery. Normally you will need to stay at least one night in hospital. You may wish to bring an overnight bag with toiletries and a change of clothes.

### What happens during DCR surgery?

You will be admitted for one night to observe for any nose bleeding after the surgery. A local anaesthetic injection is given to the eyelid area where surgery will be performed.

DCR is usually performed under general anaesthesia. As such, you will be asleep and you will not feel any pain during the surgery.

Your surgeon will spray a decongestant nasal spray into the nostril on the side of the surgery. This will numb the nose on the side of the surgery. You will then undergo a general anaesthetic by the anaesthetist. There is no pain during the surgery.

## DACRYOCYSTORHINOSTOMY (DCR) POST-OPERATIVE INSTRUCTIONS

This section provides key information for after-care in patients who have undergone dacryocystorhinostomy (DCR) surgery. Taking these precautions may help to reduce risks and complications.

The time frames stated are rough guides, and may differ from patient to patient. Always clarify any doubts with your doctor.

### IMMEDIATELY AFTER SURGERY



**Image of a stent at inner corner of the eye.**

When you awake from the general anaesthetic, you may have a nose-pack in the affected nostril. There is usually no pain even when you wake up. An ice-pack would be placed on the eye of the operated side. A silicone stent would have been placed in the corner of the eye on the operated side.

The ward nurse will clean the skin wound and instill eye drops for you. She will also show you and your family members the correct way to instill the eye drops and nasal sprays, and advise you on eye care. You will also be given oral antibiotics.

### When can I go home?

After your surgery you will be expected to stay till the next morning until you are fully alert, and after we ensure that you do not have any active nose bleed.

As you may still be tired from the effects of the general anaesthetic, we strongly recommend you have someone to help you home.

### THE FIRST FEW DAYS AFTER SURGERY

#### What to expect

- Right after surgery, mild nose bleeding can be expected.
  - Nasal packing may be required in some cases.
  - The nasal pack will be removed the next morning. Do not remove it yourself.
- Expect blood-stained nasal discharge. Mildly blood-stained sputum /saliva may be expected (usually for 1 – 2 weeks).

\*\* Please see your doctor if there is copious clear discharge from the nostril.

- Blood will be swallowed after the operation and this may cause some nausea and sometimes vomiting/coughing out of old blood on the first 2 days after surgery.

- The eye on the operated side may have slight redness, bruising or swelling (usually for 1 – 2 weeks but recovering steadily).
- There may be mild pain around the wound, which should be relieved by painkillers (analgesics) that will be prescribed.
- There may be eye/nose irritation caused by the stent (usually for 1 – 2 weeks).
- There may be slight tearing (usually improves over 2 – 4 weeks).  
These symptoms will gradually disappear over the next few weeks.
- Clinic visits: One visit in the first week, then again within the month.

### Specific post-operative care

- **Please rest** at home after surgery. You should
  - Sit upright in a chair
  - Sleep with **head elevated 30 degrees for 4 to 5 days** to minimize bruising and swelling.
- **Day 1 to 3: Cold compress at least 3 times a day**, to reduce swelling and discomfort.
  - Each session about 10 to 15 minutes.
  - Use **ice packs** or **frozen peas** in a clean bag, and lay it on a clean towel over the operation site.
- **Day 4 to 7: Apply warm compress** to reduce bruising.
  - Use a warm **hard-boiled egg** or a small **microwaved potato** wrapped in a clean washcloth. Test it on the back of your hand before applying onto the wound.
  - Apply the warm compress against closed eyelids for about **15 minutes at least 3 times per day**.
- **Clean the eyelids** - use cotton balls with sterile saline (purchase in retail pharmacy).

### What to do in the event of a nose bleed

If there is active bleeding from the nose:

- Sit upright with head over a bowl.
- Apply ice packs to nose.

**\*\* If bleeding persists, please report to the Emergency Department immediately.**

**What I must do/what is safe to do**

- Start all medications as prescribed.
- Apply the eye drops and ointment as instructed. Refer to the section on “Eye drop/ointment medications”.
- Clean your skin wound as instructed twice daily with sterile/clean cotton balls - slightly wet with sterile saline or cool boiled water, and do not allow water to enter the eye.
- Rest at home for the first 3 days.
- The following activities are safe: watching TV, computer work, leaving the house to visit clean and uncrowded areas.
- There is no dietary restriction. Take plenty of fruits and vegetables to avoid constipation.

**ABOUT 1-2 WEEKS AFTER SURGERY****What to expect**

- Eye and nose irritation should decrease.
- Your Oculoplastic specialist will gradually tail off your eye drops/ointment over the next few weeks.
- There may be removal of sutures (stitches) in some cases.
- Your specialist may perform a nasal endoscope assessment to clean the nose.

**What I must do/what is safe to do**

- As above.

**ABOUT 4-6 WEEKS AFTER SURGERY****What to expect**

- Your eye and nose should feel more comfortable.
- Your specialist may remove the stent from the nose between 6 – 12 weeks post-surgery. The maximum potential for recovery from tearing is attained at around this point.
- Your Oculoplastic specialist will gradually stop your eye drops/ointment.

**What I must do/what is safe to do**

- Light exercise like walking is allowed.
- You can resume most other activities after 6 weeks when you feel up to it.

## WHAT TO AVOID

- Hot water on your face (1 week).
- Blowing the nose (dab if necessary) or sneezing (10 days). If unable to stop sneezing or cough, ensure mouth is wide open while sneezing or coughing.
- Driving (2 weeks).
- Work (usually 2 – 3 weeks hospitalisation leave is given).
- Water/Soap touching the wound/entering the eyes (4 weeks). (If it does get in, wash it out by instilling the eye drops prescribed.)
- Lie on or bump your nose (6 weeks).
- Strenuous physical activities, e.g. jogging, tai-chi, ball games (6 weeks).
- Swimming or hot tubs (6 weeks).
- Carrying heavy objects (6 weeks).
- Carrying children who may accidentally poke your eye (6 weeks).
- Bending down to pick up things (6 weeks); if necessary to do so, do it with a straight back and be careful of not knocking the eye/head when standing up.
- Rubbing the inner corner of the eye on the operated side (up to 3 months), as a stent may be in place. (Dry your tears by gently dabbing the outer corner of the eye.)

## MEDICATION

- Eye drops and all medications to be taken as prescribed. Refer to section on “Eye drop/ointment medications”.
- Use the nose drops and nasal sprays as prescribed.
- Most other usual oral medications can be continued upon returning home.
- However, please note that **blood thinning agents (aspirin, anticoagulants and other antiplatelets)** can be continued only after consulting your surgeon.
- Instill eye drops before applying ointment (please see the section on “Eye drop/ointment medications”).
- Apply eye ointment (antibiotic) over the skin wound (please refer to the section on “Eye ointment application”).

\*\*Your vision may be blurred by eye ointment.



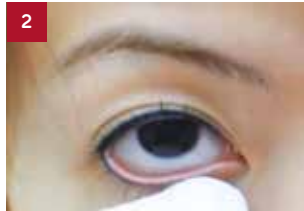
## EYE DROP/OINTMENT MEDICATIONS

### Eye Drop Treatment

Apply eye drops using the following technique:



1 Wash your hands before applying eye drops/touching the eye.



2 Use cool, boiled water or sterile saline to gently clean the eyelids whenever the eye feels sticky) with a sterile cotton ball.



3 Shake the bottle and remove the cap.



4 Hold the bottle close to the eye without touching the eyelid or eyelashes.

Tilt your head back, look upwards and pull the lower eyelid down.

Instill one drop into the eye.



5 Close the eye.

Do not rub the eye.

Gently dab off any excess eye drops.

## Eye Ointment Application (not applicable to internal/endoscopic DCR cases)

Apply eye ointment using the following technique:



Remove the cap from the tube of ointment.



Hold the tube close to the eye without touching the eyelid or eyelashes.

Squeeze a 1 cm ribbon of ointment onto a clean cotton tip applicator, or the tip of a clean finger.

Apply this on the skin wound (see arrow indicating where the stitches are).

It is safe even if the ointment enters the eye; it may cause very mild blurring of vision.

Gently dab off any excess ointment.

### IN ALL CASES

- Keep eye drops in a cool place.
- Discard the eye drops one month after opening or upon their expiry date.
- If more than one type of eye drops are to be applied to the same eye, wait **3 – 5 minutes** before instilling the next eye drop.
- Always instill eye drops before eye ointment.

### FOLLOW-UP APPOINTMENTS

- You will be examined regularly at the hospital. Remember to keep your appointments with the doctor as we want to ensure you have an uneventful recovery and good surgical outcome.

## WHAT TO DO IN AN EMERGENCY?

Please call us at Tel: 8126 3632 during office hours if you experience the following:

- **Excessive bleeding** from the wound/nose
- **Excessive discharge** from the nose
- **Severe swelling** around the eye
- **Deterioration of vision**

Office hours:

- Monday – Friday: 8am – 5pm
- Saturday: 8am – 12noon

\*Closed on Sundays and Public Holidays.

After office hours, you are advised to seek treatment at the Emergency Department (A&E), Basement 1, Tan Tock Seng Hospital.

**Clinic Appointments and Eye Screening**

Subsidised: (65) 6357 7000

Private: (65) 6357 8000

Email: [eye@ttsh.com.sg](mailto:eye@ttsh.com.sg)

Website: [www.ttsh.com.sg/eye](http://www.ttsh.com.sg/eye)

**LASIK Enquiries**

Tel: (65) 6357 2255

Email: [lasik@ttsh.com.sg](mailto:lasik@ttsh.com.sg)

Website: [www.ttshlasik.com.sg](http://www.ttshlasik.com.sg)



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