

## Ophthalmology

# Corneal Cross-Linking

### **What is a Corneal Cross-Linking and how does it work?**

Corneal cross-linking (CXL) is a procedure which aims to strengthen the cornea and stop the progression of keratoconus. It is successful in more than 90% of cases.

Keratoconus is a condition in which the cornea becomes thinner and begins to bulge into a cone-like shape causing eyesight to blur and distort. It usually starts in childhood or teen age and often stops getting worse by mid-30s.

Corneal cross-linking is the only treatment currently available that appears to stop keratoconus from getting worse. It is likely



that without the treatment your condition will get worse, unless we have demonstrated that it has already stabilised naturally.

CXL uses ultraviolet light and riboflavin (Vitamin B2) drops to stiffen the cornea. Used together, it makes the bonds (cross-links) between the collagen fibres in the cornea stronger. This treatment mimics the normal age-related stiffening of the cornea, which is known as natural cross-linking.

## **What are the risks of CXL?**

Evidence shows that CXL is very safe, but like all operations your eye needs time to heal and problems do occasionally occur. They include: Infection (1:1000), scarring of the cornea (1:1000), delayed healing (9:1000), haze on cornea (can settle within two weeks to six months), progression of the condition (1:10), need for further surgery, need for repeat CXL, refraction change, unknown long-term effects (>10 years).

The risks of this procedure will be discussed with you in detail. If you have any questions about those risks or would like more information, please speak to a doctor or nurse caring for you.

## **What happens during CXL?**

CXL is performed as a day-case procedure by a doctor and/or a senior ophthalmic nurse under topical (eyedrop) anaesthesia. The procedure takes about 40 minutes to complete but overall you may be in the treatment room for an hour. We do not currently offer CXL treatments for both eyes on the same day. If you need CXL for both eyes, we will offer you a second appointment after your first treatment.

1. You will be asked to lie flat on the treatment table.
2. Anaesthetic drops will be applied to your eye to ensure you do not feel any pain.

3. Your eye will be cleaned with an antibacterial solution and a drape will cover your face around your eye to minimise risk of infection.
4. A small clip is placed to hold your eyelids apart.
5. The surface skin of your eye (epithelium) is gently brushed off and riboflavin (Vitamin B2) drops are applied for 20-30 minutes allowing it to be absorbed into the full thickness of the cornea. Following this, the ultraviolet light is shone onto the surface of the cornea for 10 minutes.
6. A soft 'bandage' contact lens is placed on your eye at the end of the procedure.
7. Topical antibiotics and anti-inflammatory drops will be prescribed.

## **What happens after CXL?**

You may feel the vision is more blurred and it is difficult to focus, partly due to the eye drops applied and partly due to the cross

linking itself. You will be able to see out of the eye but will have a clear, plastic shield on when you leave the hospital. The blurring tends to settle by 8 weeks or so.

The first 1-2 days after the procedure, your eye will be sore. It is advisable to stay home to rest and avoid any strenuous/sporting activities for two weeks. You will have multiple drops to apply into the eye and will have a contact lens on which does NOT need removing/ changing. We will remove the lens at 1 week during your post-operative clinic visit.

After a week, the eye should be pain-free but may feel a bit gritty. You will need to continue with lubricating drops to help keep the surface moist as the eye is still healing. You may notice some haze/blurring while the eye recovers. This could be anything from two weeks to six months.

Over the course of the following year after CXL, we will review you approximately

every 3-6 months to monitor your progress with a corneal scan. You can start or be fitted for contact lens during this period. We will not be able to tell whether the treatment has worked until the year is over.

The risk of needing further CXL is very low and it is not done in the first year following the treatment. The main way to avoid progression is to avoid rubbing the eyes. We therefore advise to continue with lubricating eye drops in the first year.

## **Is there anything I should do, or not do, after CXL?**

- It is important to put the eye drops in regularly as prescribed.
- Wash and shower normally but avoid getting water in your eyes.
- Swimming and contact sports should be avoided at least before the surface of your eye has healed.

- You may drive when you can read a number plate at 20 metres with both eyes open while wearing glasses or contact lenses as appropriate.
- You may resume contact lens wear once the surface skin layer has healed which typically happens around the end of the second week after your procedure.

## **Do I need to take time off work or studies?**

Yes. You should take at least one week off while most of the surface healing occurs, or two weeks if your job involves a lot of computer work. You will be putting eye drops in every hour for the first day, and then every four hours for the following days.

Soon after treatment, using your eyes to read, watch television or use a computer will not do any damage, but you might find it more comfortable to rest with your eyes closed early on.

## Contact us

If you have any concerns following your treatment, please contact the numbers below:

Glenda Bajar (Corneal Nurse Specialist)  
02476966511

Jackie Gill (Medical secretary to Mr  
Nicholas Maycock) 02476966511

Maureen Cash (Medical secretary to  
MrRana) 01788663404

Or

In case of emergency, please attend the  
Eye Casualty Department (Clinic 9) at  
University Hospital Coventry

Tel: 024 7696 6627

Monday to Thursday 8.30am to 4.30pm;

Friday 8.30am to 4.00pm

Saturday 8.30am to 12.00pm

Outside these opening times please attend the General Accident and Emergency Department at University Hospital Coventry which offers a 24hr service.

The Trust has access to interpreting and translation services. If you need this Information in another language or format please ask and we will do our best to meet your needs.

The Trust operates a smoke free policy.

This leaflet was reviewed by Mr Christopher Dunbar and Mr Vishal Thakrar.

**Document History**

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