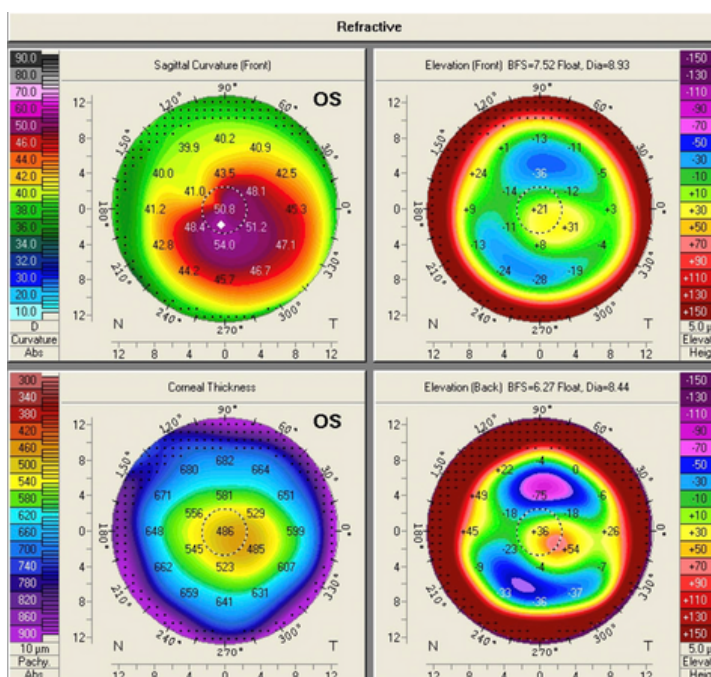


# CORNEAL CROSS LINKING (CXL)

## Symptoms & Conditions Treated

Keratoconus (KC) and Pellucid Marginal Degeneration (PMD) are relatively common conditions which cause weakness of the cornea which is the glassy window at the front of the eye.

Both conditions cause progressive thinning and stretching of the cornea, but keratoconus usually presents in teenage to mid 20 year old's and causes weakness of the central cornea whereas PMD typically affects people in middle age and causes weakness of the peripheral cornea. Both conditions result in progressive corneal distortion and astigmatism with progressive loss of vision.



## Treatment

Treatment of vision loss from keratoconus and PMD involves glasses and contact lenses for mild cases and surgery for more advanced cases which may include implantable contact lenses, topography guided laser, intracorneal ring segments and corneal transplantation. Because keratoconus and PMD are progressive conditions the best treatment is early detection and stabilisation before significant loss of vision requiring invasive surgical correction is needed.

## WHAT IS CROSSLINKING?

Stabilisation of KC and PMD means a treatment called corneal cross-linking or CXL. CXL involves the use of low dose ultraviolet light and riboflavin (vitamin B2) to stiffen and strengthen the cornea to prevent progressive thinning and stretching. CXL has been available for more than 10 years now and is 98% effective in stopping further progression of KC and PMD. It is a simple and safe treatment which is done as an outpatient treatment in clinic and takes approximately 30 minutes to complete.

CXL is painless and simple to do but can result in significant discomfort for 1-3 days afterwards, a bit like getting sunburn to the eye. Appropriate use of pain killers and local anaesthetic eye drops means that in most cases this is not a major problem. Vision is usually quite blurry for 1-2 weeks following treatment but over the medium to long term (6 months to 3 years) can significantly improve compared to pre-treatment vision. In many cases no further treatment will be needed but once the cornea has been strengthened by CXL additional treatments such as topography guided laser phototherapeutic keratectomy (PTK), implantable contact lenses (ICLs) or updated glasses and contact lenses may improve vision even further.

CXL is generally a very safe procedure, and the risk of causing loss of vision is less than 1%. It is currently approved for a Medicare rebate in cases of KC and PMD with documented progression, but can also be done for stable cases without a Medicare rebate if strengthening before treatment with laser or lens surgery is desired. For most patients with keratoconus or PMD the best approach is sequential corneal mapping and proceeding with CXL if scans show progression of corneal weakness. Because these conditions are typically slowly progressing there is usually time to be sure that progression is occurring before proceeding with CXL, but in very young patients or when keratoconus develops following laser refractive surgery it may be best to do CXL as soon as possible as the risk of progression is much higher in these cases.

