

Epithelium-off corneal cross-linking surgery compared with standard care in 10- to 16-year-olds with progressive keratoconus: the KERALINK RCT

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Plain English summary

The KERALINK RCT

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Plain English summary

Keratoconus is a long-term disorder causing increasing steepening and thinning of the cornea, the clear front wall of the eye. It leads to progressive distortion of vision. In most cases keratoconus starts during the teenage years and stops progressing when people are about 30 years old. It is often more severe if it starts in childhood. It can progress quite quickly to a stage that good vision cannot be achieved by standard care (wearing glasses and contact lenses) and a transplant operation becomes necessary. Recently, a new surgical intervention involving the removal of the surface layer of the cornea ('epithelium-off'), the administration of eye drops and the application of ultraviolet light has become available. The procedure can be performed under local anaesthesia in most patients. It is called corneal cross-linking. It is believed to stop keratoconus progression by increasing the stiffness of the cornea, but previous research has been of poor quality.

KERALINK was a high-quality randomised trial to see if the new treatment really works. Young people with confirmed keratoconus progression in one or both eyes were randomly allocated to the new treatment in addition to standard care, or to standard care alone. In total, 60 young people aged 10–16 years participated (30 allocated to the new treatment and 30 allocated to standard care alone).

Participants were followed up for 18 months. The primary outcome was the degree of distortion of the cornea at 18 months. Other outcomes included vision, need for glasses and contact lenses, quality of life, and safety. We found significantly less distortion in eyes receiving the new treatment. This shows that the new treatment is effective in preventing disease progression. Participants allocated to the new treatment group also had better vision and were less likely to need to wear glasses or contact lenses, and there were no treatment-related complications.

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