

**Visual Impairment Services
Highland**

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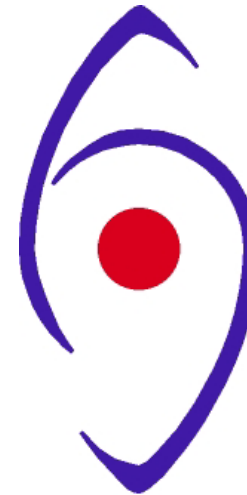
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**cataracts
childrens**

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Approximately one third of all cataracts in the newborn child is of no known cause and this proportion is much greater in the child with only one eye affected.

Infantile cataracts are often inherited and these children may have slightly smaller eyes than usual. The parents, brothers and sisters of affected children are examined in every case as an apparently normal parent or sibling may have a visually insignificant partial cataract whilst the more severely affected child has a dense visually disabling cataract.

Rubella infection early in pregnancy is a cause of multiple congenital anomalies and cataracts (one or both eyes) may be present at birth or develop in the first year of life. Rarely, other infections during pregnancy can cause cataracts in the newborn.

In children born with a cataract affecting one eye the aim would be to patch the 'good eye' for around 50% of waking hours until the age of six to eight. Some parents, after discussion with their Ophthalmologist decide not to go ahead with this rigorous, lengthy and stressful regime in the knowledge that the vision in their child's unaffected eye will be essentially normal. Cataract is the most common cause of blind and partial sight registration in childhood in Britain. Early treatment in affected infants produces the best visual outcomes. Regular attendance at a hospital ophthalmology department and substantial patching therapy are often necessary over several years. Good results are now possible in the infant and older children may be suitable for intraocular lens implants with good results.

Intraocular lenses are used more often by surgeons particularly in the correction of children with cataracts affecting one eye only. Good visual acuities can be obtained in some children but many younger children with implant lenses still require careful optical correction with glasses or contact lenses for older children in whom the eye has largely finished growing.

Patching does not usually need to be for very long (an hour or two daily) in the child who has had cataracts in both eyes.

The situation is different in the child with unilateral cataract in whom there is a great tendency for amblyopia in the affected eye. **Aggressive patching of the normal eye is necessary in order to get an eventually good result in the eye which had a cataract.**

Some metabolic disorders in the infant can lead to cataract formation. Cataracts are more common in young children with Down's Syndrome and this incidence increases in adolescence. A large number of other rare inherited disorders include cataract in childhood as one of their features.

Some children develop cataract later in childhood. This can be due to a variety of causes including trauma, drugs, radiation and as a result of other eye problems, e.g. retinal disease.

Both single and bilateral cataract in the newborn infant lead to visual deprivation (lack of adequate visual stimulation) during a critical stage of the child's development.

This, if untreated, or even when treated late, leads to permanent changes in the visual areas of the brain and some loss of function. Surgery for dense cataracts in the newborn must be performed as early as possible to obtain the best visual results.

In infants with a cataract on one eye only surgery is best performed well before the age of four months (and preferably before six weeks) and in bilateral cataract well before three months. Visual outcome can still vary markedly however, particularly in the child with unilateral cataract.

Less dense or 'partial' cataracts may not need surgery but usually require regular follow ups.

This involves wearing glasses or a contact lens (even after an implant lens has been used), as eyes after surgery no longer have their own natural lenses to focus light entering the eyes.

Contact lenses are well tolerated and safe. They are usually fitted within one week of surgery. In bilateral cases the eyes are operated on within one week of each other and the first eye is patched until the second eye has been operated on to prevent any early visual advantage being gained by one eye over the other. In unilateral cases no patching is commenced until the contact lens has been fitted. Daily wear soft contact lenses are used. Parents are carefully instructed in lens insertion, removal and cleaning and are given spare lenses to avoid interruptions in their use following loss of a lens.

Squint (non-alignment of the eyes) is present in the majority of children after surgery for congenital cataract. In many cases the squint is relatively small and surgery may not be necessary.

Retinal detachment is an uncommon but serious post-operative complication. It may occur within months of the initial surgery but most occur 20 to 30 years after surgery.

Infection inside the eye is very rare but potentially devastating post-operative complication. Many precautions are taken to avoid this.

Minor complications are dealt with as they occur.

The infant's eye(s) must be accurately optically corrected after surgery.

Careful monitoring of vision is carried out using simple clinical methods (steadiness of gaze, any preference for one eye, etc.), special acuity cards and electrophysiological tests (which pick up signals from the visual system). Patching therapy is often necessary.

Difficulty in performing patching therapy is a major factor accounting for relatively poor visual results in otherwise uncomplicated eyes. Patching is not an easy task but is essential in treating an amblyopic (lazy) eye.

It is often difficult to determine the onset of a cataract and occasionally an eye expected to be very lazy will develop good vision after cataract extraction.

This is usually due to it being a later onset (unnoticed) cataract rather than one truly present from birth. Similarly, cataract arising later in childhood (particularly after the age of seven) is less likely to lead to severe amblyopia in an otherwise healthy eye.

Infants with visually significant bilateral cataracts undergo surgery at the earliest opportunity without jeopardising the child's general health. Two techniques are commonly utilised for childhood cataract surgery:

- ♦ **aspiration** -in which some of the outer 'capsule' of the lens is left at the end of the procedure; this is most suitable for older children and in those in whom an intraocular lens is to be implanted

- ♦ **lensectomy** - in which the whole lens is removed and some of the vitreous 'jelly' behind the lens; this is usually used in children under 18 months of age

Modern microsurgical techniques have reduced markedly the incidence of operative and post-operative complications in infantile cataract surgery but as in all surgical procedures they can occur occasionally.

Pupil abnormalities usually taking the form of an oval or off-centre pupil are quite common and mostly do not cause problems.

Glaucoma (raised pressure in the eye) is seen in up to 25% of patients after congenital cataract surgery. This usually requires treatment which may be surgical or medical (drops).