Recommendations for eye care in children and young people who have Down's syndrome: for parents

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Children who have Down's syndrome are at increased risk of cataracts at birth or shortly afterwards, so the eyes should be checked for cataracts by the age of 6 weeks. This simply involves briefly shining a light into the baby's eyes.

Since refractive errors (long and short-sight), nystagmus (wobbly eyes) and squint (eye turn) are appreciably more common in children who have Down's syndrome, all areas should offer a local pathway for a full eye examination before the age of 2 years. If parents have concerns beforehand, ask GP or paediatrician for a referral.

The interior of the eyes can be quite different in children who have Down's syndrome, so drops to dilate the pupils are recommended for the first examination, to establish the normal appearance for your child.

Typical children often have long or short-sight at birth and grow out of this over the first 2-3 years. Children who have Down's syndrome are highly unlikely to grow out of these conditions, and can develop significant long or short-sight in the early years (birth to 4 years).

Children should have eye examinations annually, even if the first examination shows no concerns.

About 60% will have a significant long or short-sight (needing spectacles) by the age of 4 years. It is important that parents are aware of the likelihood of their child needing spectacles.

Typical children can often cope with small amounts of long-sight by using their focusing muscles and do not need spectacles. Most children who have Down's syndrome have poor focusing (accommodation). Focusing should be checked in every child, since many will benefit from spectacle correction of small amounts of long-sight, which would not be corrected in a typical child.

The poor focusing response means that drops (cycloplegia) are rarely needed for the testing of long and short-sight in children who have Down's syndrome. Focusing is very active in typical children and can make testing the eyes difficult. The eyes of children who have Down's syndrome are likely to be stable and accurate testing is possible without drops. Testing without drops means that the focusing response can also be measured on the same occasion.

Children who focus accurately in infancy are much less likely to develop significant long-sight or squint. This is useful knowledge for prognosis and planning frequency of eye examinations.

The majority of children who have Down's syndrome will have poor focusing response even when wearing spectacles for long or short-sight. Focusing should be checked at every visit and bifocals prescribed when focusing for near targets is insufficient. Children can wear bifocals successfully and can wear them from the age at which they can sit up reliably. Very young children learn entirely at near, and use a very close working distance, so they need clear vision at every age.

Long-sight stabilises around the age of 4 years, although it can reduce a little at adolescence. Astigmatism can arise and increase in power up to the age of around 8 years. Short-sight is much less common but can increase until about 8 years of age.

This means that annual eye examinations should continue throughout childhood.

Because of the poor accommodative response, children with short-sight can be worse off for near tasks, with their spectacles. Bifocals should always be considered for such children.

Keratoconus (an abnormal steepening and thinning of the cornea) is prevalent (10%) in Down's syndrome from the age of about 11 years.

Therefore, annual examinations should continue with particular emphasis on the health of the cornea.

The normal cornea in Down's syndrome is steeper and thinner than among typical individuals, and some signs of early keratoconus in the general population do not arise in individuals who have Down's syndrome, so identifying the condition at the earliest stage is challenging, but vital if treatment is to be feasible. It is important that parents are aware of this and ask for the cornea to be checked at every examination. Down's syndrome should not be a barrier to surgical treatment (cross-linkage) or contact lens wear.

Developmental cataracts are more common in Down's syndrome and can arise, and progress very quickly, at surprisingly young ages.

Annual eye examinations should continue throughout life.

Visual acuity (detail vision) and contrast sensitivity (the ability to see faint targets) are reduced in all people who have Down's syndrome, even when the correct spectacles are worn. Expect 2-3 lines poorer than typical norms on an acuity chart at every age (and more if the child has nystagmus). This means that children struggle to access conventional learning materials at school and teachers must make appropriate adjustments. It is essential that parents and teachers are educated about the poor vision. Ideally, all children will be referred to the local Education Authority's Visual Impairment Service, but criteria for support can vary across areas. Children who have Down's syndrome and nystagmus must be acknowledged to be visually impaired and supported by the local authority Visual Impairement (VI) team.

NB. All recommendations are evidence-based from published research. The main sources of evidence are listed below.

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