

# Focus



Summer  
2009

An occasional update commissioned by the College. The views expressed are those of the author.

## Improving detection of visual problems and eye disorders in children through screening

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### Why do it?

Prompt detection of visual problems and ophthalmic disorders is valued by families, allowing timely provision of support and advice, and provision of developmental and educational interventions and genetic counselling, where appropriate. It is also recognised by clinicians as being central to the optimal management of affected children, enabling treatment within the critical periods of visual maturation.

### What should be done?

Screening comprises the systematic assessment of a whole population to identify those individuals likely to have the disorder of interest (but are presymptomatic), so that they can be referred for confirmation of diagnosis and treatment, as well as to reliably exclude unaffected individuals. There are a number of established requirements of population screening programmes [www.nsc.nhs.uk](http://www.nsc.nhs.uk)

Population screening is fundamentally different to clinical surveillance, which comprises systematic observation to detect early or evolving signs of a particular condition (e.g. a new disease or complication of existing disease or its treatment) in individuals at high risk to allow appropriate timely interventions (e.g. new or changed treatment or further investigation). Examples of surveillance activity include formal ophthalmic assessment of children with specific systemic disorders (e.g. neuro-developmental) or sensori-neural hearing impairment.

Many countries have programmes of childhood screening and surveillance to detect a range of ophthalmic disorders. Important differences exist between and within countries in the content and implementation of these programmes. These differences reflect varying interpretations of the currently incomplete evidence base that informs policy, as well as variations in aims and provision of health care and the different roles of the professionals involved.

After on-going review of the research evidence, the United Kingdom National Screening Committee, has recently re-launched its programme of universal childhood screening for vision and ophthalmic disorders (originally recommended in 2006). Its components are shown in the Box. Importantly this now forms part of the new national Child Health Promotion Programme set out by the Department of Health and Department of Children, Schools and Families.

### How do you know it is working?

There is evidence that the NSC programme has not been implemented in many primary care trusts (PCTs). There are particular concerns about patchy implementation of the recommendation about vision screening at school entry (by five years) and about implementation of alternative approaches to screening which are unsupported by evidence.

Thus the Director of the UK National Screening Committee recently wrote to all Directors of Public Health recommending them to review provision in their area, as well as highlighting the need for audit. The following audit framework has been suggested:

- The age of the population screened
- Who does the screening
- The training they have
- The method being used for screening
- The criteria for referral

- Total population in the target cohort
- The number screened
- The number of children “failing” the screening
- The number of those who ‘fail’ that have true disease and are newly discovered
- The number referred as a result of screening

The outcome of these referrals, i.e. how many are confirmed to have a visual loss that either needs observation or treatment? Ideally splitting the two

The number of children who ‘pass’ screening but later present with an eye problem that should have been detectable through screening

### What can you do?

If your local PCT is not implementing the recommendations of the NSC, particularly with respect to four to five-year-old screening, then you and your orthoptic colleagues should engage with the Director of Public Health in the PCT to ensure compliance with NSC recommendations.

### Summary

Early detection remains an important requirement for improving provision and outcomes for children with eye disease and their families. Ophthalmic professionals are ideally placed to ensure and support local implementation of the existing national recommendations.

**UK National Screening Committee: recommendations for screening and surveillance for vision and ophthalmic disorders in childhood <[www.nsc.nhs.uk](http://www.nsc.nhs.uk)>; Health for All Children, 4th Edition, Elliman and Hall, Oxford University Press, Oxford; The Child Health Promotion Programme 2008**

| Target population                             | Recommendation  |
|---|---|
| Neonatal period and early infancy             |   |
| a. Very low birth weight and premature babies | Specialist ophthalmic examination to detect retinopathy of prematurity <a href="http://www.rcophth.ac.uk/docs/publications/ROP_Guideline_-_Masterv11-ARF-2.pdf">www.rcophth.ac.uk/docs/publications/ROP_Guideline_-_Masterv11-ARF-2.pdf</a> |
| b. All newborns and 6-8 week infants          | Newborn and 6-8 week physical examination of the eye, including red reflex to detect media opacities (particularly congenital cataract) and eye anomalies   |

### Primary school age /entry (by 5 years)

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|--|--|
| All 4 to 5 year olds To detect reduced visual acuity (primarily amblyopia) | <p>Acuity measurement, each eye separately using LogMAR charts. Referral of children who do not achieve 0.2 in each eye (approximately 6/9 on a Snellen based linear chart), despite good cooperation.</p> <p>Conducted by orthoptists or by professionals trained and supported by orthoptists.</p> <p>To replace existing school entry vision screening programme if it exists. No other preschool vision screening programme justified.</p> <p>Secondary School Age</p> |
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### Secondary school age

|                    |  |
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| 11 years and above | Insufficient evidence to recommend either discontinuation of existing, or introduction of new, vision screening programmes for refractive errors |
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There is no robust research evidence to support any other vision screening in childhood.