

Appendix 2: Vision Screening

General Principles And CPS Guidelines

Screen all children for vision abnormalities. Screening should include inspection of the eye structures for abnormalities, the corneal light reflex test, the cover-uncover test in the younger infant or child, and visual acuity testing in older children 3 years).

The Canadian Paediatric Society has made the following recommendations for vision screening (Community Paediatric Committee, CPS 1998).

Newborn To 3 Months Of Age

- A complete examination of the skin and external eye structures, as well as the conjunctiva, cornea, iris and pupils, is an integral part of the physical examination of all newborns, infants and children.
- The retina should be inspected (by means of the red reflex) for opacities of the lens (cataracts) and signs of posterior eye disease (retinoblastoma).
- Failure of visualization or abnormalities of the red reflex are indications for referral to an ophthalmologist.
- Corneal light reflex should be tested to detect ocular misalignment.

Suggested Screening Techniques For Infants And Pre-School Children

Birth To 4 Months Of Age (Near-Visual Acuity)

Observe child and ensure that the following occur:

- Regards face (of examiner or mother) in line of vision
- Follows object or light to midline
- Follows object or light past midline
- Follows object or light through 180°
- Grasps rattle when offered
- Reaches toward an object placed in line of vision

3-4 Months Of Age And Over

As for children 1-4 months of age, but add tests for strabismus.

6-12 Months Of Age

- Conduct examination as for newborn to 3 months of age.
- Observe ocular alignment to check for strabismus. The corneal light reflex should be central and the cover-uncover test normal.
- Observe fixation and following.

3-5 Years Of Age

- Conduct examination as for newborn to 3 months of age.
- Conduct visual acuity testing.
- Any child with visual acuity less than 20/30 should be referred for optometric assessment.

6-18 Years Of Age

- Visual acuity should be assessed (e.g. by Snellen chart) every 2 years until 10 years of age, then every 3 years until 18 years of age.
- Any child with visual acuity less than 20/30 should be referred for optometric assessment.

Tests For Strabismus (Squint)

Procedure for Corneal Light Reflex Test

1. Sit at child's eye level.
2. Hold a light source (penlight) 13 inches (32 cm) away from the child, in front of your own nose.
3. Ask child to focus on the light, if child is old enough to understand and follow the instruction.
4. Observe position of the light reflex of each cornea and of the eyes.

Responses

- *Normal:* both eyes are focused in same position, and the light reflects off the same area of the cornea, usually slightly to the nasal side of the pupil center

- *Abnormal*: eyes are not aligned in position, and the light reflexes are asymmetric, i.e. coming off different areas of the cornea; this may indicate squinting

If response is abnormal for the corneal light reflex test, perform the cover-uncover test to further assess for strabismus.

Procedure for Cover-Uncover Test

Perform this test only if the child is able to cooperate.

1. Cover one eye with an opaque object (a large plastic spoon-shaped cover designed for this purpose may be available; otherwise, improvise).
2. Instruct or try to get the child to fix his or her gaze on a light source (held in front of him or her) with the uncovered eye.
3. Quickly remove the cover from the covered eye, and observe the position of that eye.

Visual Acuity Testing

Visual acuity of 20/30 or less requires referral for further optometric assessment.

3-5 Years Of Age

If the child is able to comprehend instructions, use the Goodlite illiterate "E" chart or the random dot

4. Repeat steps 1, 2 and 3 for the other eye.

For further explanation, see "Strabismus (Squinting)," in chapter 8, "The Eyes."

Responses

- Normal: both eyes are focused in the same position
- Abnormal: covered eye will deviate and may swing back into alignment when the cover is removed; in more obvious cases, the eye will remain deviated after the cover is removed or always appears deviated

Referral

Children with abnormal responses on the corneal light reflex test and the cover-uncover test should be seen as soon as possible by a physician.

Referral to an ophthalmologist may be necessary.

"E" chart. This test is preferably administered in the child's own language.

6-18 Years Of Age

If the child knows the alphabet, use a Snellen chart. Otherwise, use the symbol or "E" charts.