GUIDELINE

Vision

<table>
<thead>
<tr>
<th>Scope (Staff):</th>
<th>Community health staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope (Area):</td>
<td>CACH, WACHS</td>
</tr>
</tbody>
</table>

This document should be read in conjunction with this DISCLAIMER

Aim

To promote the wellbeing and development of children by timely surveillance, screening and identification of childhood vision impairment and/or eye disease. To understand the importance of appropriate visual functioning and the impact vision impairment has on the development and health of a child.

Risk

Undetected or unmanaged vision impairment can have a significant effect on a child’s social, psychological development, educational progress, and long term social and vocational outcomes.1, 2, 3

Background

Normal visual development is vital to the development and wellbeing of children, while a failure to recognise sight disorders at onset is known to increase vulnerability to learning difficulties and delays in achieving many early developmental milestones.1, 3

Along with allergies and asthma, eye disorders are the most common long-term health problems experienced by children.4 Up to 11% of children, 0-14 year age group have a prevalence of long term eye conditions.4 The 2011 Australian Institute of Health and Welfare (AIHW), Eye Health in Aboriginal and Torres Strait Islander people Social Survey, found that 7% of Indigenous children aged 0–14 years experienced eye or sight problems. Infections such as trachoma, as well as eye-related head injuries, are more common among indigenous children.1-4

Vision conditions, when left untreated in early childhood, have the potential to affect lifelong visual potential and, at worst, lead to blindness.3 Additionally, assessment may also facilitate early detection of neurologic metabolic or genetic disorders for which loss of vision is a symptom.3, 5

Key Points

- Vision screening should only be performed by community health staff that have undertaken appropriate training and been deemed competent in the procedures.
New staff who have not had their clinical skills assessed should be supervised by a preceptor who provides guidance and advice to ensure they learn and adhere to the procedure. New staff attend orientation where they receive training and will have their clinical skills assessed within 3 months.

Aboriginal families who are identified as having additional needs are offered access to the Enhanced Aboriginal Child Health Schedule (EACHS). This incorporates a more comprehensive series of child health screening and surveillance assessments, with additional vision surveillance screening and eye examination opportunities, for children aged 0–5 years.

Children with identified concerns are offered referral, liaison, and advocacy.

Vision impairments are functional limitations and most commonly affect acuity (i.e. sharpness and clarity), visual fields (normal ranges of sight) and colour.\(^6\)

An abnormal red reflex may indicate neonatal or early childhood conditions including congenital cataract, retinoblastoma, and congenital glaucoma - all of which require immediate action and referral for specialist review.\(^7,8,9\)

Children often do not complain if their vision is blurred, see double, or compensate by using only one eye as they are unlikely to make valid comparisons with their peers. However, much loss of vision in early childhood is preventable if detected and treated early, further supporting the rationale for screening in early childhood.\(^10\)

Staff will conduct all screening in accordance with the appropriate procedure in the Community Health Manual accessed via the HealthPoint link or the Internet link.

**Development of vision**

Development of the visual system starts early in foetal life and begins with the physical structure of the eye. The neuro-components of the system develop towards the end of gestation and continue into the early neonatal period. The basic structure of the eye, including the cornea, lens, iris, pupil and eyelids remain immature until 34-36 weeks’ gestation when the infant can begin to limit light exposure.\(^5\) At birth, infants are sensitive to light and will turn their head towards large diffuse sources of light and away from sudden bright light. Stimulation of the visual system is best achieved by positioning the infant approximately 20-30 centimetres from their mother’s face. It can be enhanced in dim ambient light by directing light on to the mother’s face to allow for contrast of features.\(^11\)

Rapid visual development occurs in the first three months of life, with visual acuity rising from 6/60 at birth to adult values of 6/6 by the age of 4 years.\(^6\) From a very young age, babies are attracted to looking at faces and patterns, provided they are within 30 centimetres, to maintain interest and fixation.\(^5\) Table 1 below describes the expected milestones for vision development in young children.

Normal visual function is critically linked with a number of other developmental milestones such as fine motor skills, gross motor movements and social interaction.\(^5,11\)
Table 1: Expected milestones for vision development in young children.\textsuperscript{11}

<table>
<thead>
<tr>
<th>Age (months)</th>
<th>Expected visual development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborn</td>
<td>Should blink to flash and turns towards diffuse light</td>
</tr>
<tr>
<td>1 - 4</td>
<td>Should show special interest in human face, stare at objects held close. Follow faces and objects held near. Watch own hands. Watch an adult at 1.5 metres</td>
</tr>
<tr>
<td>5 - 9</td>
<td>Should fixate 2.5cm cube at 30cms and then 1.5mm object (e.g. 100’s &amp; 1000’s) at 30cm by the end of 9 months. Many fundamental functions such as depth perception, relative perception of objects and coordinated tracking should now be in place.</td>
</tr>
<tr>
<td>12 - 18</td>
<td>Should recognise familiar people from a distance. Demands desired objects by pointing finger. Enjoys simple picture books. Picks up small objects with pincer grasp</td>
</tr>
<tr>
<td>24 - 30</td>
<td>Can match pictures of reducing sizes</td>
</tr>
<tr>
<td>36 - 48</td>
<td>Can match letters and shapes</td>
</tr>
</tbody>
</table>

**Risk Factors**

In children, vision impairment or loss is most likely to be attributed to:

- Genetic conditions \textsuperscript{7}
- Maternal infections experienced during pregnancy (e.g., rubella, cytomegalovirus, venereal diseases, and toxoplasmosis) \textsuperscript{12}
- Consequences of disease (e.g. diabetes, glaucoma, trachoma) \textsuperscript{2}
- Birth complications/ extreme prematurity \textsuperscript{13}
- Trauma, poisoning, and tumours.\textsuperscript{8}

The following are considered **red flag signs** of possible vision problems\textsuperscript{11}:

- Not looking at carer’s face or bright object when held close, by six weeks
- Not giving eye contact by eight weeks
- Abnormal head posture
- Not showing interest or not attempting to pick up small toys by 5 months
- Absence of sharp visual fixation to 1.5mm objects after 9 months
- Erratic eye movements
- Eyes that cross, turn in or out or move independently
- Only using one eye to look at things

**Vision Assessment**

The early identification of eye disease and/or vision impairment facilitates timely intervention, enabling children to achieve positive developmental and functional health outcomes.\(^1\) It is most meaningful when community health staff undertake a systematic enquiry of parental concerns, gather information about the child’s current abilities and functions, identify risk factors, use appropriate tools for vision surveillance screening and act on professional judgement.

Table 2 provides a summary of vision assessments undertaken by community health staff. Refer to the appropriate procedure for further instruction.

**Table 2: Vision assessments undertaken by community health staff**

<table>
<thead>
<tr>
<th>Name of test</th>
<th>Aim</th>
<th>Age group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Reflex</td>
<td>To detect opacities in the pupil or corneal abnormality and abnormalities of the back of the eye. The potential for strabismus can also be identified</td>
<td>Universal contacts at 8 weeks and 4 months. Consider additional assessments at any age where there are parental or staff concerns; and no specialist involvement.</td>
</tr>
<tr>
<td>Corneal Light Reflex Test</td>
<td>To detect strabismus (squint)</td>
<td>Universal contacts at 8 weeks and 4 months. Universal contact at 4 years (SEHA), unless there is evidence of involvement from a relevant specialist. Consider additional assessments at any age where there are parental or staff concerns; and no specialist involvement.</td>
</tr>
<tr>
<td>Distance vision testing (using Lea Symbols Chart)</td>
<td>To identify amblyopia and unequal refractive errors using the 15 line Lea Symbols Chart</td>
<td>Universal contact at 4 years (SEHA), unless there is evidence of involvement from a relevant specialist. Consider additional assessments where there are parental or staff concerns; and no specialist involvement.</td>
</tr>
</tbody>
</table>
Distance vision testing (using Snellen Alphabetical Chart)  To assess and record the visual acuity of clients who are literate in English  For children over 6 years, where there are parental or staff concerns; and no specialist involvement.

Cover Test  To detect a manifest strabismus  Universal contact at 4 years (SEHA), unless there is evidence of involvement from a relevant specialist. Consider additional assessments where there are parental or staff concerns; and no specialist involvement.

See Appendix A for common childhood eye disorders.

**Follow up and referral pathway**

Staff will comply with the specific follow-up and referral processes identified in the individual vision procedures.

See Appendix B for general vision referral pathway.

### Related internal policies, procedures and guidelines

The following documents can be accessed in the Community Health Manual via the [HealthPoint](#) link or the [Internet](#) link

- Ages and Stages Questionnaires™
- Child Health Services
- Corneal light reflex
- Cover test
- Distant vision testing (Lea Symbols Chart)
- Distance vision testing (Snellen)
- Physical assessment 0 - 4 years
- Red reflex test

### Related internal resources and forms

The following resources and forms can be accessed from the [HealthPoint CACH Intranet](#) link

- How children develop
### Information to Ophthalmologist (CHS418)

### SEHA Safety considerations (PowerPoint)

### Vision Surveillance Screening for Universal Contacts

<table>
<thead>
<tr>
<th>Useful external resources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Book:</strong> Mary Sheridan’s <em>From Birth To Five Years Children’s Developmental Progress.</em> 2014. Ajay Sharma and Helen Cockerill</td>
</tr>
<tr>
<td><strong>Book:</strong> From Birth To Five Years Practical Developmental Examination. 2014. Ajay Sharma and Helen Cockerill</td>
</tr>
<tr>
<td><strong>Lions Institute</strong> - <a href="https://www.lei.org.au/">https://www.lei.org.au/</a></td>
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<tr>
<td><strong>Vision Australia</strong> - <a href="https://www.visionaustralia.org/">https://www.visionaustralia.org/</a></td>
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</table>
# Appendix A: Common childhood eye disorders

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Main causes</th>
<th>Symptoms</th>
<th>Related procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strabismus 14</td>
<td>Abnormalities in the muscles and nerves surrounding the eyes</td>
<td>Crossed eyes, Double vision, Uncoordinated eye movements, Vision loss, Loss of depth perception, Abnormal head position</td>
<td>Corneal light reflex, Cover test, Distance vision test (Lea), Distance vision test (Snellen), Red reflex test</td>
</tr>
<tr>
<td>One eye or both eyes may turn: inward (esotropia), outward (exotropia), upward (hypertropia) or downward (hypotropia). Strabismus may be constant or intermittent.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amblyopia 15</td>
<td>Untreated strabismus</td>
<td>Underdevelopment of 3D vision, Loss of vision</td>
<td>Corneal light reflex, Cover test, Distance vision test (Lea), Distance vision test (Snellen), Red reflex test</td>
</tr>
<tr>
<td>Commonly known as ‘lazy eye’.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Congenital cataract 7.16</td>
<td>Congenital anomalies, Infection in mother while pregnant e.g., Rubella, MMR, Adverse reaction to certain drugs, in utero</td>
<td>Opacity of the lens</td>
<td>Corneal light reflex, Red reflex test</td>
</tr>
<tr>
<td>Congenital glaucoma 17</td>
<td>Congenital anomalies causing incorrect development of the eye’s drainage system, leading to increased pressure and damage to the optic nerve</td>
<td>Enlarged eyes, Cloudiness of the cornea, Photosensitivity</td>
<td>Corneal light reflex, Red reflex test</td>
</tr>
<tr>
<td>Conjunctivitis 18</td>
<td>Bacterial or viral infection</td>
<td>Irritated, red eye, Excessive tear production, Pus discharge, Swollen eyelids, Photophobia</td>
<td></td>
</tr>
</tbody>
</table>
| **Lacrimal system blockage**<sup>19</sup>  
*Also known as a blocked tear duct.* | • Congenital anomalies  
• Chronic sinusitis  
• Nose trauma.  
• Nose polyps  
• Conjunctivitis | • Production of tears in the neonate  
• Watering eye.  
• Discharge of pus  
• Crusted mucus along the eyelashes  
• Increased susceptibility to eye infections |  |
| --- | --- | --- | --- |

| **Nystagmus**<sup>20</sup>  
*Rapid, involuntary eye movements in one or both eyes. May be up and down or in circles.* | • Abnormal function of the areas of the brain which control eye movement due to congenital anomalies, trauma or infection | • Blurred vision  
• Abnormal head posture | Corneal light reflex  
Red reflex test |
| --- | --- | --- | --- |

| **Retinoblastoma**<sup>8</sup>  
*Cancer of the eye* | • Congenital anomalies  
• Genetics | • White or pink pupil  
• Squint  
• Strabismus  
• Larger than normal pupil  
• Poor vision | Red reflex test  
Corneal light reflex |
| --- | --- | --- | --- |

| **Retrolental fibroplasia**<sup>13</sup>  
*Also known as Retinopathy of Prematurity (ROP)* | • Scarring of the retina due to unstable oxygen levels in the blood.  
• Premature birth. | • None; only detected by an ophthalmologic examination. | Red reflex test  
Corneal light reflex |
Appendix B: Vision Referral Pathway

Vision referral pathway

1. **Vision issue identified**
2. **Family/medical history**
3. **Vision assessment**
4. **Referral required**
   - **No**: Continue with universal contacts
   - **Yes**: **Consent to refer**
5. **Deviation from normal**
   - **No**: Issue resolved or managed
     - **Yes**: Refer to GP
   - **Yes**: Continue with universal contacts
6. **Repeat assessment at Universal/Universal Plus contact**
   - **No**: Issue resolved or managed
   - **Yes**: Follow up support as requested
7. **Refer to GP**
8. **Refer to Ophthalmologist via GP or local service referral pathways**
References


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<table>
<thead>
<tr>
<th>File Path:</th>
<th>Document Owner: Director Clinical Services Community Health</th>
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<tr>
<td>Reviewer / Team: Clinical Nursing Policy Team</td>
<td></td>
</tr>
<tr>
<td>Date First Issued: 2007</td>
<td>Scheduled Review Date: 18 Oct 2020</td>
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<tr>
<td>Approved by: CACH/WACHS Community Health Clinical Nursing Policy Governance Group</td>
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<td>Endorsed by: Executive Director CACH Date: 18 Oct 2017</td>
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<td>Standards Applicable: NSQHS Standards: 1.7, 1.8</td>
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