



| <b>PROCEDURE</b>   |                        |
|--|------------------------|
| <b>Cover test</b>  |                        |
| <b>Scope (Staff):</b>  | Community health staff |
| <b>Scope (Area):</b>   | CAHS-CH, WACHS         |
| <b>Child Safe Organisation Statement of Commitment</b>   |                        |
| The Child and Adolescent Health Service (CAHS) commits to being a child safe organisation by meeting the National Child Safe Principles and National Child Safe Standards. This is a commitment to a strong culture supported by robust policy documents to ensure the safety and wellbeing of children at CAHS. |                        |

**This document should be read in conjunction with this [DISCLAIMER](#)**

## Aim

To detect a manifest strabismus in preschool and school-aged children.

## Risk

Undetected or unmanaged vision impairment can have a significant effect on a child’s health, psycho-social development, educational progress, and long term social and vocational outcomes.<sup>1</sup>

## Background

Amblyopia is decreased vision in one or both eyes due to abnormal development of vision in infancy or childhood. In amblyopia, there may not be an obvious problem of the eye. Vision loss occurs because nerve pathways between the brain and the eye aren't properly stimulated. As a result, the brain favours one eye, usually due to poor vision in the other eye. The brain “learns” to see only blurry images with the amblyopic eye even when glasses are used. The lay term for amblyopia is “lazy eye.” It is the leading cause of vision loss amongst children.<sup>2</sup>

Amblyopia is unique to children but is preventable if the child receives adequate treatment in childhood. The prevalence of amblyopia is approximately 2% of preschool children in Australia.<sup>3</sup> Strabismus is the most common cause of amblyopia and is the term used to describe any anomaly of ocular alignment. It can occur in one or both eyes and in any direction.<sup>4</sup>

Alignment of the eyes during the early years of life is considered critical for development of binocular vision.<sup>5, 6</sup> Manifest strabismus is a misalignment of the two eyes when a patient is looking with both eyes uncovered, while a latent deviation appears when binocular viewing is broken and the two eyes are no longer looking at the same object.<sup>7</sup> The Cover test (CT) is used to assess for strabismus.

Overall vision development is said to be complete by the time the child is eight years of age. However, some aspects of visual development such as binocular vision will already be complete by the time the child reaches school age.<sup>8, 9</sup>

The available evidence suggests that vision screening programs aimed at children aged 18 months to five years of age lead to improved visual outcomes.<sup>10</sup> The *National children's vision screening project* conducted in 2008 recommended that a vision screen should be conducted for all children at around 4 years of age, with an allowable range from 3.5 to 5 years.<sup>6</sup>

In children 3 years of age and over, the CT and Corneal light reflex (CLR) tests are performed with distance vision testing and contribute to the overall assessment of vision and eye health.

For further information on vision refer to the Clinical Nursing Manual:

- *Vision and eye health* guideline - includes information on development of vision, normal vision behaviours, common vision concerns including strabismus and amblyopia, and the rationale for vision screening.

## Key Points

- Vision screening should only be performed by community health staff who have undertaken appropriate CAHS-CH or WACHS training and been deemed competent in the procedures.
  - After receiving training and prior to achieving competency, staff must work under the guidance of a clinician deemed competent.
- For cultural considerations when caring for Aboriginal\* children and families, refer to [Related resources to assist service provision to Aboriginal clients](#).
- Universal screening using the CT should be offered at the School Entry Health Assessment, unless there is evidence of the child being **under the care** of an optometrist or ophthalmologist.
- Targeted assessment using the CT should be offered to children aged 3 years and older if there is relevant family history or strabismus is suspected by parent/caregiver, teacher or health professional, or where there is another vision concern.
- The child must be able to keep their head still and maintain constant fixation on a target for this test to be valid.
- Community health nurses must follow the organisation's overarching Infection Control Policies and perform hand hygiene in accordance with WA Health guidelines at all appropriate stages of the procedure.

## Equipment

- Small toy to attract child's attention
- Occluder, if desired. Using the hand is acceptable as long as there are no gaps between the fingers.

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\* OD 0435/13 - Within Western Australia, the term Aboriginal is used in preference to Aboriginal and Torres Strait Islander, in recognition that Aboriginal people are the original inhabitants of Western Australia. No disrespect is intended to our Torres Strait Islander colleagues and community.

## Process

| Steps   | Additional Information   |
|---|--|
| <p><b>1. Engagement and consent</b></p> <ul style="list-style-type: none"> <li>• Ensure written or verbal parental consent has been obtained prior to proceeding with testing.</li> <li>• Explain the procedure to the child and parent/caregiver if present. Allow sufficient time for discussion of concerns.</li> <li>• Obtain a history from the parent/caregiver prior to performing the test.</li> </ul>  | <ul style="list-style-type: none"> <li>• Refer to surveillance questions, risk factors and red flags listed in the <i>Vision and eye health</i> guideline.</li> <li>• Encourage parent/caregiver to support and be involved with the procedure where appropriate.</li> <li>• If obtaining verbal consent, discuss with the parent/caregiver whether they consent to sharing of information with relevant school staff.</li> <li>• Section 337(1) of the Health (Miscellaneous Provisions) Act 1911 authorises nurses specified in the schedule to examine a child without parent/caregiver consent if required.</li> </ul>   |
| <p><b>2. Preparation</b></p> <ul style="list-style-type: none"> <li>• Sit or stand the child comfortably.</li> <li>• Observe the child's eyes, head posture and alignment while child is in a relaxed state.</li> <li>• The examiner should sit or stand in front of child, about an arm's length (approximately 50 cm) away, and facing the child square on.</li> </ul>  | <ul style="list-style-type: none"> <li>• Note any abnormalities with the child's eyes.</li> <li>• Abnormal head posturing may indicate visual difficulty, including strabismus.</li> <li>• The child's and the examiner's eyes should be at approximately the same height.</li> </ul>  |
| <p><b>3. Cover test assessment –</b><br/><b><u>Right eye:</u></b></p> <ul style="list-style-type: none"> <li>• Direct the child's attention to a target (small toy or a pen light) held 30-50 cm from their eyes.</li> <li>• Cover left eye with hand or an occluder (e.g., a palm-sized piece of plain cardboard).</li> <li>• Cover the eye for approximately two to three (2-3) seconds.<sup>8</sup></li> <li>• Observe the uncovered right eye closely for any shift in fixation as the left eye is covered.</li> <li>• The occluder is then removed, and both eyes are observed for any movement.<sup>11</sup></li> </ul> | <ul style="list-style-type: none"> <li>• The object used to attract the child's attention should remain still.</li> <li>• Hold hand in stop sign position. Cover the eye by approaching from the side of child's face, not from in front.</li> <li>• The occluder (hand or card) is to be held close to the eye (but not touching the eye).</li> <li>• Occlude the eye long enough for uncovered eye to take up fixation.</li> <li>• If the uncovered eye does not move, this is a normal or negative CT. Any movement noted is an abnormal or positive result.</li> <li>• The uncovered eye with manifest strabismus must move from its deviated position and take up correct fixation</li> </ul> |

| Steps  | Additional Information   |
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| <ul style="list-style-type: none"> <li>Repeat the procedure three times to confirm findings. Pause briefly between repeats.</li> </ul> <p><b>Repeat with the left eye.</b></p>   | <p>when the fixating normal eye is covered. This is a positive CT. The direction that the uncovered eye moves to pick up fixation on the target indicates the direction of misalignment.</p> <ul style="list-style-type: none"> <li>Movement of the covered eye when the occluder is removed is also a positive result, and suggests latent strabismus.</li> <li>It is important to note that there may be no movement if the child has limited or no vision in the uncovered eye.</li> </ul>  |
| <p><b>4. Interpreting results</b></p> <ul style="list-style-type: none"> <li>Recheck of the CT, CLR and visual acuity is required if CT reveals movement (positive result) in a child's eye/s on the initial screen. This should be done as soon as practical, within 3 months.</li> </ul>   | <ul style="list-style-type: none"> <li>If reliable initial testing shows eye movement, use clinical judgment regarding urgent referral rather than re-check within 3 months.</li> <li>If initial testing not felt to be reliable, staff should use clinical judgment to determine the timing of re-check within three months. Examples may be an uncooperative or distracted child.</li> <li>If any other anomalies are observed during the assessment, staff should use clinical judgement and either review the child, or refer e.g. ptosis of the eye or reluctance to have one eye covered.</li> </ul> |
| <p><b>5. Communicate results with parent/caregiver</b></p> <ul style="list-style-type: none"> <li>Discuss results with parent/caregiver (if present) or inform by telephone or in writing.</li> <li>If parent/caregiver not present: <ul style="list-style-type: none"> <li>Contact to discuss if there are any concerns, and need for recheck/referral if applicable</li> <li>Provide results in writing using CHS409-6A <i>Results for parents</i> or other relevant form.</li> </ul> </li> <li>Provide a copy of the results to the school on completion of the health assessment.</li> </ul> | <ul style="list-style-type: none"> <li>Refer to <i>Language Services</i> policy for information on accessing interpreters.</li> <li>It is recommended that staff use the correct terminology when discussing any vision results with the parent or caregiver. The use of the term 'lazy eye' can be misleading as it can relate to several different eye conditions. A 'squint' is a more accurate term for strabismus.</li> </ul>   |

| Steps  | Additional Information  |
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| <p><b>6. Referral and follow-up</b></p> <ul style="list-style-type: none"> <li>• Discuss and seek consent for referral from parent/caregiver.</li> <li>• Refer children with a positive CT on re-check to a medical practitioner.</li> <li>• Results of all vision tests conducted should be included in the referral.</li> <li>• For clients at risk, follow up must occur with parents/caregivers to determine if the referral has been actioned. This includes clients of concern, children in care, or those with urgent vision concerns. <ul style="list-style-type: none"> <li>○ For other clients, use clinical judgment to determine if referral has been actioned.</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Adherence to CAHS-CH and WACHS clinical handover processes is required when handing over, or referring a client within, or outside of, the health service.</li> <li>• WACHS nurses should follow local processes as required; this may involve referral to a medical practitioner or an optometrist for further assessment.</li> <li>• CAHS-CH staff should refer to a medical practitioner. <ul style="list-style-type: none"> <li>○ The medical practitioner will assess and consider referral to either an ophthalmologist or optometrist for further investigation.</li> </ul> </li> </ul> |

## Documentation

Nurses maintain accurate, comprehensive and contemporaneous documentation of assessments, planning, decision making and evaluations in electronic and/or MR600 child health records according to CAHS-CH and WACHS processes.

## References

1. Lee EY, Sivachandran N, Isaza G. Five steps to: Paediatric vision screening. *Paediatrics & child health*. 2019;24(1):39-41.
2. Royal Children's Hospital. Amblyopia Melbourne: RCH; 2020 [cited 2020 3 September]. Available from: [https://www.rch.org.au/ophthal/patient\\_information/Patient\\_info/](https://www.rch.org.au/ophthal/patient_information/Patient_info/).
3. Pai AS, Rose KA, Leone JF, Sharbini S, Burlutsky G, Varma R, et al. Amblyopia prevalence and risk factors in Australian preschool children. *Journal of Ophthalmology*. 2012;119:138-44.
4. Coats D, Paysse E. Evaluation and management of strabismus in children. I Waltham, MA. 2012.
5. Duckman R. Visual development, diagnosis, and treatment of the pediatric patient: Lippincott Williams & Wilkins; 2006.
6. Mathers M, Keyes M, Wright M. National Children's Vision Screening Project. Melbourne: Murdoch Children's Research Institute; 2008.
7. O'Dowd C. Evaluating squints in children. *Australian Family Physician*. 2013;42(12).
8. Optometry Australia. Clinical Practice Guide - Paediatric Eye Health and Vision Care. Melbourne: Optometry Australia; 2016.
9. Zimmermann A, deCarvalho K, Atihe C, Zimmermann S, Ribeiro VIJcS-. Visual development in children aged 0 to 6 years. *Arq Bras Oftalmol [Internet]*. 2019 14 September 2020; 82(3):[173-5 pp.]. Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0004-27492019000300002&lng=en](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0004-27492019000300002&lng=en).
10. NSW Government. Statewide Eyesight Preschooler Screening (StEPS) Program. 2012.
11. Kirkpatrick C, Klauer T. How to Perform a Basic Cover Test in Ocular Misalignment or Strabismus University of Iowa Ophthalmology and Visual Sciences; 2015 [Video transcript].

| Related policies, procedures and guidelines   |
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| The following documents can be accessed in the <b>Clinical Nursing Manual</b> via the <a href="#">HealthPoint</a> link, <a href="#">Internet</a> link or for WACHS staff in the <a href="#">WACHS Policy</a> link |
| Child health services   |
| Clinical Handover - Nursing   |
| Corneal light reflex test   |
| Distance vision testing (Lea Symbols Chart)   |
| Distance vision testing (Snellen)   |
| Physical assessment 0-4 years   |
| School-aged health services - primary   |
| School-aged health services - secondary   |
| Universal contact School Entry Health Assessment  |
| Vision and eye health   |
| Vulnerable populations  |
| The following documents can be accessed in the <a href="#">CAHS-CH Operational Manual</a>   |
| Client identification   |
| Clinical handover   |
| Consent for services  |
| Hand Hygiene  |
| Infection Control manual  |
| Language Services   |
| The following documents can be accessed in the <a href="#">CAHS Policy Manual</a>   |
| Fitness for Work  |
| Occupational Safety and Health  |
| The following documents can be accessed in WACHS Policy   |
| Enhanced Child Health Schedule  |
| The following documents can be accessed in the <a href="#">Department of Health Policy Frameworks</a>   |
| Clinical Handover Policy ( <a href="#">MP0095</a> )   |

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| Clinical Incident Management Policy ( <a href="#">MP 0122/19</a> ) |
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| Related CAHS-CH forms  |
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| The following forms can be accessed from the <a href="#">CAHS-Community Health Forms</a> page on HealthPoint |
| Clinical handover/Referral form (CHS 663)  |
| Referral to Community Health Nurse (CHS142)  |
| SEHA Results for parents (CHS409-6A)   |
| SEHA Parent Questionnaire (CHS409-1)   |
| SEHA Results for staff (CHS409-2)  |

| Related resources to assist service provision to Aboriginal clients   |
|---|
| CAHS-CH staff   |
| The following resources can be accessed from the <a href="#">CAHS-Aboriginal Health</a> page on HealthPoint         |
| Patient Care and Cultural Learning Guidelines   |
| Aboriginal Health and Wellbeing   |
| The following resources can be accessed from the <a href="#">CAHS-CH Aboriginal Health Team</a> page on HealthPoint |
| Cultural Information Directory  |
| WACHS staff   |
| <a href="#">WACHS Strategic Plan 2019-2024</a>  |
| <a href="#">WACHS Aboriginal Health Strategy 2019-2024</a>  |

| Related external resources   |
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| University of Iowa Ophthalmology - <a href="#">How to perform a basic Cover test</a>                       |
| <a href="#">Optometry Australia - Clinical Practice Guide: Paediatric Eye Health and Vision Care. 2016</a> |



This document can be made available in alternative formats on request for a person with a disability.

|                       |  |                   |                 |
|-----------------------|--|-------------------|-----------------|
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