PROCEDURE

Head circumference assessment

| Scope (Staff): | Community health staff |
| Scope (Area): | CACH, WACHS |

This document should be read in conjunction with this DISCLAIMER

Aim
To correctly measure and interpret the head circumference of infants and young children.

Risk
The accurate measuring of head circumference is an integral part of a holistic growth assessment. Failure to undertake head circumference assessment or obtaining inaccurate head circumference measurements may delay the identification of children with health and developmental concerns associated with deviations in head size.

Background
Assessment of growth identifies whether a child has age appropriate growth or is deviating from normal parameters. For assessment of growth to be meaningful, serial measurements should be taken and plotted onto a growth chart over a period of time.\(^1\) Growth assessment is especially important during infancy to detect and monitor slow or excessive growth, check the impact of illness and treatment, and to identify or monitor those at higher risk.\(^2\)

Head circumference assessments are undertaken as part of a holistic assessment to identify deviations in head growth and brain development. Serial growth measuring is relevant in the first two years of life.\(^3\)

A child’s head circumference increases rapidly prior to thirty-six (36) months of age and then growth slows.\(^4\) Growth deviations in head circumference are not usually related to nutritional intake (except in extreme cases) but are more likely due to non-nutritional factors.\(^5,6\) When head circumference measurements are outside the expected norm, possible deviations may include achondroplasia, microcephaly, hydrocephalus, and craniosynostosis (craniostenosis). Refer to the Physical assessment 0-4 years guideline for more information.

Key Points
- Head circumference assessments are undertaken at the 8 week, 4 month and 12 month universal scheduled contacts.
- A head circumference assessment should also be offered and conducted at any Universal plus contact or drop in session, where there is parent and/or professional concern regarding growth, or any other identified risk.
- For children receiving the Enhanced Aboriginal Child Health Schedule (EACHS), head circumference assessment is undertaken at specific contacts and at any time where there are parental and professional concerns. Refer to the EACHS Guidelines for more information.

- Accelerations or decelerations in head circumference growth are indications for further review and/or referral.

- Head circumference alone is not diagnostic of disorders.

- To ensure measurement accuracy, reliable equipment should be used, along with good technique.

- Community health staff are to follow policy and procedures relating to infection control and perform hand hygiene in accordance with WA Health guidelines at all appropriate stages of the procedure.

**Equipment**

- Clean, flexible, non-stretchable measuring tape or disposable paper tape.

- The tape should have increments of 0.1 centimetre (cm) and a width of 0.5 – 1.0 cm.

- Check tape against a static measure for accuracy and replace regularly as required.

**Procedure**

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<th>Steps</th>
<th>Additional Information</th>
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<tbody>
<tr>
<td><strong>Explanation</strong>&lt;br&gt;Discuss the procedure with the parent and child, where appropriate. Allow sufficient time for discussion of parental concerns.</td>
<td>Encourage parent support and involvement with the procedure.</td>
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<tr>
<td><strong>Preparation</strong>&lt;br&gt;- Remove any hair or head accessories.&lt;br&gt;- Lay the child supine on the assessment bench.</td>
<td>Children may need to be held firmly (yet comfortably) to prevent unexpected movement.&lt;br&gt;Older children may prefer to stand or be seated on the parents lap facing the health professional.</td>
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<tr>
<td><strong>Measuring</strong>&lt;br&gt;- Place the tape above the child’s eyebrows, above the supraorbital ridge and around the occipital prominence at the back of the head.&lt;br&gt;- Pull the tape gently to compress the hair to yield a measure that ‘approximates’ head circumference.&lt;br&gt;- Note the measurement to the nearest 0.1 cm.</td>
<td>Staff may wish to repeat measurement a number of times, to enable consistency in technique and accuracy with results.</td>
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## Head circumference assessment

### Steps

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<tr>
<th>Recording</th>
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<tr>
<td>- Record measurements on relevant head circumference growth charts, specific for age and gender.</td>
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<tr>
<td>- Infants born between 37 - 40 weeks should be plotted on the WHO birth to 2 year growth charts. The actual age for these infants commences at birth. Growth measurement plotting begins at birth at “0” and continues according to actual age.</td>
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<tr>
<td>- Infants born &lt;37 weeks gestation should be plotted onto the WHO birth to 2 year growth charts using their age corrected for their prematurity until 2 years of age.</td>
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<td>- Age is plotted in completed weeks from birth until age 3 months; in completed months from 3 to 12 months; and then in completed years and months.</td>
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<td>- For full term infants less than fourteen (14) weeks of age who have been identified as having head circumference concerns, use the WHO Birth to thirteen (13) weeks head circumference charts to record serial measurements.</td>
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<tr>
<td>- A child born before 37 completed weeks gestation is considered preterm. Once a corrected age of 40 weeks is reached, the WHO standards can be used to monitor ongoing growth. Corrected age should be used until 2 years of age. If this child catches up before this then actual age can be used.</td>
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### Interpretation

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<tr>
<td>- Interpret the head circumference measurements on the chart, noting any changes in growth trajectories.</td>
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<td>- Discuss findings and growth patterns with parents.</td>
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<td>- In some cases, a single measurement is sufficient to confirm a size increase that requires further assessment. However more often, serial measurements of the head circumference over a period of time and a holistic assessment are required to confirm that a deviation from the normal pattern of growth has occurred.</td>
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<td>- Serial measurements showing changes in the growth trajectories or unexpected movement on the curves, requires additional assessment and/or referral.</td>
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### Referral

If required, refer to a medical practitioner for further assessment.

### Documentation

Community health staff will document relevant finding according to local processes.

### References


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

- Body Mass Index assessment – child health
- Body Mass Index assessment – primary school
- Growth birth – 18 years
- Growth faltering
- Height assessment 2 – 5 years
- Length assessment 0 - 2 years
- Overweight and obesity
- Physical assessment 0 - 4 years
- Universal contact guidelines
- Weight assessment 0 - 2 years
- Weight assessment 2 - 5 years

Related internal resources and forms

The following resources and forms can be accessed from the HealthPoint CACH Intranet link

- Body Mass Index Boys (CHS430B)
- Body Mass Index Girls (CHS430A)
Head circumference assessment

How children develop
Practice guide for Community Health Nurses
Preterm Fenton Growth Charts
World Health Organization Charts 0 – 6 months (external link)
World Health Organization Charts (CHS8000A series)

Useful resources

Royal Children’s Hospital Melbourne Child Growth learning resource

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