PROCEDURE

Length assessment 0–2 years

Scope (Staff):	Community Health
Scope (Area):	CACH, WACHS

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations

Read the full statement here:
CAHS Child Safe Organisation Commitment Statement

This document should be read in conjunction with this disclaimer

Aim

To correctly measure, record and interpret the recumbent length of infants and young children up to two years of age.

Risk

Failure to conduct a length assessment or obtain an accurate length measurement may delay the identification of significant growth deviations for an infant or young child.

Background

Assessing and monitoring the growth of infants and young children through the measurement of recumbent length is important in the first two years of life. Measuring length is a non-invasive procedure[1] and, when conducted as part of a regular and holistic growth assessment, can assist in determining whether:

- an infant or young child has age-appropriate growth
- a growth deviation is apparent that may indicate an underlying health, developmental or social issue which warrants further assessment, early intervention and monitoring[2].

Accurate and consistent measurement technique is essential when assessing growth in infants. Children measured lying down (recumbent length) are generally slightly longer than when measured standing (height) because the body can be fully extended and is not affected by posture, balance or spinal compression caused by gravity.[3] Although the difference varies between individual children, a systematic difference

exists between the two measurement methods.[3] The World Health Organization (WHO) growth standards recognise this difference and note that standing height is, on average, approximately 0.7 cm less than recumbent length.[4] Recumbent length remains the preferred measurement method for children aged two years and under. Clinical circumstances may require a standing height to be used, in this circumstance, the measurement obtained should be recorded and the measurement method documented in the clinical notes.

For the assessment of growth to be meaningful, serial measurements should be taken and plotted onto a growth chart over a period of time[5]. However, decisions about growth deviations should never be determined solely by these charts.[6] Reviewing growth measurements from previous child health contacts will assist in interpreting overall growth status. Unexpected stasis, or downward or upward movement on the growth chart, indicates the need for further assessment and/or referral.[5]

Key points

- Recumbent length should be measured:
  - at the 8 week, 4 month, 12 month and 2 year Universal contacts
  - when concerns regarding growth or other identified risks are raised by a parent/caregiver or identified by the Community Health Nurse at any Universal Plus or Enhanced Child Health Schedule contact.

- If a young child is close to two years of age and able to stand unassisted, their standing height may be measured (refer to Height assessment 2 years and over).

  NOTE: For Body Mass Index (BMI) to be calculated, children must be at least two years of age and their standing height must be measured.

- Length assessments are to be performed by staff with appropriate training and assessment skills.

- Suitable equipment and the correct measuring technique must be used. Inaccurate measurement, recording or plotting of recumbent length can lead to an incorrect growth assessment, clinical misinterpretation, and unnecessary concern for parents/caregivers.

- Community Health Nurses need to provide a culturally safe service delivery, which demonstrates a welcoming environment that recognises the importance of cultural beliefs and practices of all clients.

- 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.

- All nurses will refer to the Nursing and Midwifery Board AHPRA Decision-making framework in relation to scope of practice and delegation of care to ensure that decision-making is consistent, safe, person-centred and evidence-based.

Equipment

- A clean, recumbent infant length board (infantometer) that has a:
  - firm, flat surface with a measuring tape in 0.1 centimetre (cm) or 1.0 millimetre (mm) increments
  - tape or measurements that are fixed and easy-to-read
  - fixed, stationary headboard at right angles to the tape
  - movable or non-attached footboard perpendicular to the tape.

- The length board must be cleaned before and after each use (see Medical Devices: Single Use, Single Patient Use and Reusable).

Procedure

Steps	Additional information

Identification, engagement and consent
• Check client identity
• Review client information/electronic health records.
• Explain the procedure to the parent/caregiver and, where appropriate, the child.
• Allow sufficient time for the discussion of any parent/caregiver concerns.
	• Refer to
	  ○ Patient/Client identification (CACH)
	  ○ Patient identification and procedure matching (WACHS)
	  ○ Consent for services (CACH)
	  ○ Engagement procedure (WACHS)
	• Measuring recumbent length requires two people.
	  ○ Request parent/caregiver assistance with the procedure.

Preparation • Place the clean, length board on a flat, stable surface. • Ask the parent/caregiver to remove any items or hair accessories worn on the infant/young child's head, and their shoes and socks. • For greater accuracy, it is preferable that all clothing and the nappy be removed prior to measurement.	• Cultural beliefs and practices should be considered prior to asking the parent/caregiver to remove any items worn by the infant/young child. • At a minimum, request the removal of any items worn on the head, and shoes and socks.

Steps	Additional information
Measuring • Ask the parent/caregiver to lay the infant/young child in a supine position on the length board. The crown of the head must touch the stationary, vertical headboard. • The infant/young child's line of vision should face vertically upwards. • Ensure the infant/young child's body and pelvis are straight along the length board. • Gently extend the infant/young child's legs at the hips and knees. While holding the knees, pull the footboard against their feet. The soles of the feet should be flat against the footboard with the toes pointing upwards.	• Ask the parent/caregiver to stand behind the headboard and hold the infant/young child's head against the headboard throughout the procedure. • Stand on the side of the headboard where you can see the measuring tape and move the footboard. • The knees of a newborn cannot be extended to the same degree as older infants and young children. Apply minimal pressure to prevent injury.

Recording
 	
• Record the length measurement to the nearest 0.1cm.
 	
• CACH Nurses must use a CDIS assessment screen to record the length measurement. The measurement will be automatically plotted on the relevant growth chart.
 	
• WACHS Nurses must enter the length measurement in relevant CHIS qualifiers and review it on the appropriate centile chart.
 	
• CACH and WACHS Nurses should note in CDIS/CHIS:
 	
  ○ Any factors that may have interfered with the accuracy of the measurement (e.g. if the infant/young child is in plaster, a harness or any item that is unable to be removed).
	• Age is plotted in completed weeks/months/years, as appropriate.
	
	• If an unexpected growth trajectory is evident when the length measurement is plotted, re-take the measurement to check for accuracy.
	
	Paper-based recording in the child health setting:
	
	• For **infants born after 37 weeks gestation**, plot the measurement on the relevant World Health Organization (WHO) growth chart:
	  ○ Length-for-age: Birth to 6 months (Girls or Boys)
	  ○ Length-for-age: Birth to 2 years CHS800A series (Girls or Boys)
	
	The actual age for these infants commences at birth. Growth

Steps	Additional information
• If CDIS/CHIS are temporarily unavailable, the relevant paper-based growth chart should be used to precisely plot the length measurement (see *Additional information*). The measurement should be entered into CDIS/CHIS, when available.	measurement plotting begins at birth at "0 years" and continues according to the actual age. • For **infants born at less than 37 weeks gestation**, plot the measurement using the Fenton Preterm Growth Charts. Once a corrected age of 40 weeks is reached, the WHO Length-for-age growth charts should be used. Corrected aged must be used until two years. If the child catches up before this, actual age can be used. • If concerns with growth status are identified in infants less than six-months of age, use the WHO Length-for-age: Birth to 6 Months growth charts to record and monitor serial length and weight measurements. • Where a child is aged **two years or under** and **recumbent length cannot be measured,** but the child can stand unassisted, obtain a **height measurement** and plot on the relevant growth chart: ○ Length-for-age: Birth to two years (Girls or Boys). Document in CDIS/CHIS that a standing height measurement was used in place of recumbent length. See Height Assessment 2 years and over.
Interpretation • Interpret the length measurement on the growth chart as part of a holistic growth assessment. Serial measurements of	• For more information about interpreting growth, refer to: ○ Head circumference assessment

Steps	Additional information
length, weight and head circumference must be considered. • Note any changes in growth trajectory. • Discuss the findings and growth pattern with the parent/caregiver.	○ Weight assessment 0 – 2 years ○ Height assessment 2 years and over ○ Body Mass Index assessment ○ Growth - downward trajectory ○ Growth - birth to 18 years • Serial measurements showing unexpected changes in the growth trajectories require additional assessment and/or referral.
Referral • If concerned about growth, refer the infant/young child to a medical practitioner for further assessment.	• For further information about the referral process, refer to Growth – downward trajectory.

Training

CACH: Length assessment demonstrated and height assessment noted as part of the Child Health Orientation session.

WACHS: See the WACHS Community Health Learning Framework - Nursing and Aboriginal Health Staff here: Healthy Country Kids Clinical Education & Training

Documentation

Nurses maintain accurate, comprehensive and contemporaneous documentation of assessments, planning, decision making and evaluations according to CACH and WACHS processes.

References

1. The Royal Children's Hospital Melbourne. About child growth: The Royal Children's Hospital Melbourne. Available from: https://www.rch.org.au/childgrowth/.
2. The Royal Children's Hospital Melbourne. Child growth e-learning module Melbourne: The Royal Children's Hospital Melbourne. Available from: https://www.rch.org.au/childgrowth/Child_growth_e-learning/.
3. Buyken AE, Hahn S, Kroke A. Differences between recumbent length and stature measurement in groups of 2- and 3-y-old children and its relevance for the use of European body mass index references. Int J Obes (Lond). 2005 Jan;29(1):24–8. PubMed PMID: 15278106.
4. World Health Organization. WHO child growth standards: training course on child growth assessment. Geneva: World Health Organization, 2008 1 December 2008. Report No.: Contract No.: 11 September. Available from: https://www.who.int/publications/i/item/9789241595070.

5. Secker D. Promoting optimal monitoring of child growth in Canada: using the new WHO growth charts. Canadian Journal of Dietetic Practice and Research. 2010;71(1):e1–e3.
6. The Royal Children's Hospital Melbourne. The 10 top things about growth charts. Victoria: The Royal Children's Hospital Melbourne, 2013. Available from: https://www.rch.org.au/uploadedFiles/Main/Content/childgrowth/10%20top%20things%20about%20growth%20charts_Nov2013.pdf.

Related internal policies, procedures and guidelines
The following documents can be accessed in the CACH Clinical Nursing Policy Manual SharePoint link or CACH Clinical Nursing Policy Internet link
Body Mass Index assessment
Growth - birth to 18 years
Growth - downward trajectory
Head circumference assessment
Physical assessment 0 - 4 years
Universal contact (8 weeks, 4 months, 12 months and 2 years)
Weight assessment 0-2 years
The following documents can be accessed in the WACHS Policy Manual
Enhanced child health schedule
Engagement procedure
Paitent identification and procedure matching
The following documents can be accessed in the CAHS Policy Manual
Patient / Client identification
The following documents can be accessed in the CAHS Infection Prevention and Control Policy manual
Infection Prevention and Control Policies
The following documents can be accessed in the CACH Operational Policy Manual

Consent for services

Related external legislation, statewide mandatory policies, and guidelines
Nursing and Midwifery Board AHPRA Decision-making framework

Useful internal resources (including related forms)
World Health Organization Charts (CHS800A series)
How Children Develop – 0-12 years Resource
Practice guide for Community Health Nurses

Useful external resources (including related forms)
CDC Growth Charts (including Stature-for age)
Fenton Preterm Growth Charts
WHO growth charts: Length/height-for-age
WHO Height-for-age (Girls) 2 to 5 Years
WHO Height-for-age (Boys) 2 to 5 Years

This document can be made available in alternative formats on request.

Document Owner:	Nurse Director, Community Health		
Reviewer / Team:	Clinical Nursing Policy Team		
Date First Issued:	January 2014	Last Reviewed:	October 2026
Amendment Dates:		Next Review Date:	08 October 2029
Approved by:	Community Health Clinical Nursing Policy Governance Group	Date:	25 September 2026
Endorsed by:	Executive Director Clinical Excellence – WACHS	Date:	30 September 2026
	Executive Director - CACH	Date:	08 October 2026
Aboriginal Impact Statement and Declaration (ISD)		Date ISD approved:	27 July 2026
Standards Applicable:	NSQHS Standards: NSQPCH Standards: Child Safe Principles: 1, 3, 4, 7, 10		

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