



Crumlin | Temple Street | Tallaght | Connolly

ASSESSMENT OF WEIGHT AND HEIGHT OF INFANTS AND CHILDREN

Area of use:	All of organisation <input checked="" type="checkbox"/>	CHI at Connolly <input type="checkbox"/>	CHI at Crumlin <input type="checkbox"/>
	CHI at Herberton <input type="checkbox"/>	CHI at Tallaght <input type="checkbox"/>	CHI at Temple Street <input type="checkbox"/>
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Version:	Version 1	Approval date:	September 2022
Qpulse reference:		Revision due:	September 2025
Version History			
Version:	Date approved:	Summary of changes:	Author:

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1.0 Introduction

This document outlines the position of Children's Health Ireland (CHI) in relation to assessment of weight and length/height in infants and children on admission and at intervals thereafter. Weighing and measuring infants and children is an essential skill required of nursing staff.

Measurement of weight and length/height is essential in the management of children in hospital to ensure accurate medication doses, as well as fluid and dietary requirements. Infants require their weight checked regularly to ensure optimum nutrition and growth are being achieved (National Institute for Health and Care Excellence, 2017).

The Standards for Medicines Management (Nursing and Midwifery Council, 2013) states "as part of administering medication the registered nurse must record the weight of the patient on the prescription sheet for all children." Growth is a significant index of health in children. A child's weight and length/height is required during their stay in hospital, whether the child is presenting to the hospital for a day case procedure or for an extended admission. It is important that a regular accurate assessment is made of a child's weight and length/height by nursing staff. The National Formulary for Children (British Medical Journal Group and Pharmaceutical Press, 2022) highlights the need to make an accurate assessment of the child's weight to ensure the correct dose of medication is prescribed. Both weight and height are required to calculate the child's body surface area, which is required for calculation of Systemic Anti-Cancer Therapy as per the Children's Oncology Group and the Children's Cancer and Leukaemia Group.

2.0 Purpose of the Guideline

The purpose of this guideline is to support the accurate assessment of weight and length/height in infants and children in order to facilitate accurate:

- growth monitoring and nutritional assessment
- calculation of medication doses in line with CHI Formulary
- monitoring of hydration status and administration of intravenous fluids
- evaluation of weight and height to guide interventional procedures, for example cardiac catheterisation.

3.0 Scope of the Guideline

This guideline applies to:

- All qualified nursing staff who measure and weigh children in CHI
- All undergraduate and post-registered nursing students who measure and weigh children in CHI
- All seconded nursing staff who measure and weigh children in CHI
- Healthcare Assistants (HCAs) whose competence to measure and weigh children in CHI has been approved and signed-off.

4.0 Procedure for weighing infants and children in CHI

- A child must be weighed on presentation/admission to CHI, unless otherwise indicated. Medication should not be administered prior to obtaining a child's weight. Weight is required for the calculation of fluids and medication.
- Children will be weighed in Kilograms (Kgs) only using one of the following scales:
 - A baby scale (for children under 2 years old)
 - Stand on scales for children over 2 years' old
 - Seat type scale for children who are unable to stand
 - Incubator scales for neonates who are nursed in an incubator
 - Hoist scales for children who are unable to sit or stand

Accurate weight measurement is not always possible in the acute setting. Current Advanced Paediatric Life Support (APLS) guidelines have been shown to be reasonably accurate in a study by Lineen *et al* (2019). However, accuracy can decrease with increasing age, estimation should not replace an accurate measurement as soon as possible.

If the child's clinical condition does not allow for weight to be measured using one of the scales above, an estimate of the child's weight can be made using Table 1 below as a guide. The 50th centile weights for age and gender are used. If a child presents as small or big for age, use clinical judgement.

Table 1 – Approximate weight (Kg) for age and gender (Advanced Paediatric Life Support, 2016).

Approximate weight for age and gender		
Age	Boys	Girls
Birth	3.5 Kgs	3.5 Kgs
1 month	4.5 Kgs	4.5 Kgs
3 months	6.5 Kgs	6 Kgs
6 months	8 Kgs	7 Kgs
12 months	9.5 Kgs	9 Kgs
18 months	11 Kgs	10 Kgs
2 years	12 Kgs	12 Kgs
3 years	14 Kgs	14 Kgs
4 years	16 Kgs	16 Kgs
5 years	18 Kgs	18 Kgs
6 years	21 Kgs	20 Kgs
7 years	23 Kgs	22 Kgs
8 years	25 Kgs	25 Kgs
9 years	28 Kgs	28 Kgs
10 years	31 Kgs	32 Kgs
11 years	35 Kgs	35 Kgs
12 years	43 Kgs	43 Kgs
14 years	50 Kgs	50 Kgs
Adult	70 Kgs	70 Kgs

When the actual weight is obtained, the medication dose should be recalculated and changed if necessary. In some cases, if the dose is within 10% of the dose prescribed according to the child's estimated weight, it may not be necessary to re-prescribe. This depends on the drug, and is also influenced by a number of patient factors e.g. renal/liver function, adverse effects of the drug, severity of disease. Contact the Clinical Pharmacist and/or the Medical team for advice.

5.0 Infant / Child Weighing Process

Weight is carried out on presentation to each clinical area i.e. Emergency Department (ED), Out Patients Department or the Clinical Ward setting (Royal College of Nursing, 2017). The Child Growth Foundation (<https://childgrowthfoundation.org/>) suggests best practice as:

- An explanation of the process is given to the child and parent/guardian
- Verbal assent/consent is sought from the child and parent/guardian
- Infants from birth to 2 years of age should be weighed without clothes or nappy
- For children over 2 years of age, nappies should be changed immediately prior to the procedure
- Children over 2 years of age should be weighed with minimal clothing and without shoes
- Shoes, slippers and jackets / heavy outer clothing should be removed and pocket contents should be emptied
- If a child refuses to remove some clothing this must be noted in the Healthcare record (HCR)

- If a cast or heavy medical dressing is present, this must be detailed in the child's assessment record, Medication Prescription and Administration Record, HCR, weight chart and Operating Theatre checklist, where applicable
- Scales should be set at zero prior to weight assessment
- A paper towel should be used for baby scales as the scale temperature can be cool
- All weights are taken and recorded in Kgs
- Inform the parent/guardian and where appropriate, the child, of the child's weight. This will act as a reference point thereafter and advise the parent/guardian of any weight loss or gain.
- For accuracy, in-patients should ideally be weighed at the same time (early morning) and using the same scales
- The scales used must be noted in the nursing care plan, so that the same scales is used thereafter, ensuring reliability and accuracy
- On admission, weights must be checked by two nurses (at the soonest opportunity, once safe to assess) one of whom must be a registered nurse (RN) and co-signed by the second checker
- All subsequent weight recordings can be single checked/signed by a RN
- All nursing students must continue to have weights checked and co-signed by a RN
- Weighing scales are cleaned between each patient use
- Subsequent weights for in-patients must be plotted and compared to the previous weight
- Significant fluctuations in weight should be double-checked to ensure accuracy
- Where a weight discrepancy is identified requiring immediate action, for example a medication dose adjustment, the evidence must be documented and the child's primary medical team informed. An Incident Report should also be completed.
- Where a weight highlights a concern, for example if a child is considered to be underweight or overweight, the evidence must be documented and appropriate action taken - inform the child's primary medical team, consider dietitian referral, consider seeking advice from pharmacist re medication doses. Refer to CHI Faltering Growth – Guideline for assessment and management of infants and children under 2 years (2019).
- Estimated weights must be double checked at all times, except during an emergency in the ED.

6.0 Timing and frequency of weight measurement for in-patients in CHI

- The admitting nurse weighs the child during the nursing assessment on admission
- The frequency of weight recordings is based on the child's clinical condition and the length of hospital stay.
- For accuracy, in-patients should ideally be weighed at the same time (early morning) and using the same scales.
- Daily/twice daily weight measurements are common on some clinical areas and dependent on the child's condition. Daily/twice daily weights are used to indicate fluctuation in fluid status.
- Significant fluctuations in weight must be double-checked independently by a second RN.
- The infant's/child's weight must be documented in the patient assessment chart, Medication Prescription and Administration Record, HCR and weight chart. Concerns regarding weight loss or gain are detailed in the relevant nursing care plan and discussed with the dietitian and the child's primary consultant as required.
- Weights are plotted on a centile chart by the dietitian/medical team or consultant as required.
- A parent-reported weight **must not** be used at admission. If a child's weight cannot be safely checked on admission, an approximation is made by experienced staff using the APLS guidelines in Table 1 above.
- If the child is in hospital for more than 7 days, at least weekly weights are checked.

- A child's weight should be measured on discharge if he/she has a chronic condition or has been in hospital for longer than 7 days and depending on diagnosis (Royal College of Nursing, 2017).
- A new weight must be checked and recorded on all internal transfers, on handover of care, to ensure reliability using a new scales in the new clinical area.

7.0 Weight measurement for children/young people with Anorexia Nervosa

Weigh on admission using a calibrated digital scale in light clothing, without shoes or jewellery, before breakfast and immediately after the child/young person has voided. Thereafter, check weight twice weekly on specified days (e.g. Monday and Thursday). All subsequent weight checks are taken on the same scales in similar clothing as initial weight, before breakfast and immediately after the child/young person has voided on agreed days. Weights should be clearly documented and filed in a location which is accessible to relevant staff involved in the provision of care to the child/young person. A daily record of bowel motions should be commenced on admission, which will facilitate a more accurate weight assessment and inform the Multi-Disciplinary Team (MDT) of the child's/young person's nutritional status.

8.0 Tared Weighing

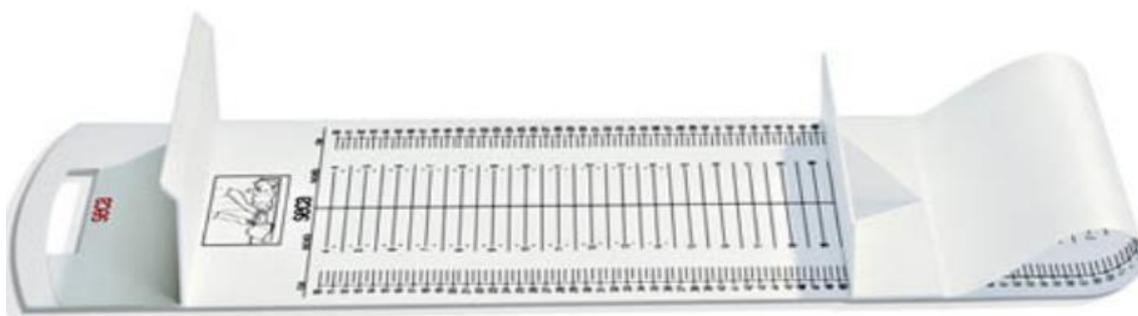
It may be necessary to weigh the child in the arms of a parent, carer or colleague/staff member if the child cannot stand still, this is known as tared weighing. To obtain the most accurate weight of a child using this method ensure the following:

- The parent/carer stands/sits on the weighing scales first
- Obtain the weight of the parent/carer and record this
- The undressed child (*where possible*) should then be handed to the parent/carer and the total combined weight of both is recorded
- The child's weight is calculated by subtracting the weight of the parent/carer from the total combined weight of both child and parent/carer. Record that a 'tared weight' was required, state who was weighed and show both weights as well as the calculation that resulted in the child's weight.
- If the initial reason for a tared weight measurement was a distressed and unco-operative child and the child subsequently becomes more compliant, then an actual weight should be attempted.
- If the parent/carer is very heavy, i.e. more than 100Kgs, and the infant is light, i.e. less than 2.5Kgs, the infant's weight may not register accurately on the scales. In such cases, a lighter person should hold the infant while checking the weight.

9.0 Procedure for measuring the length of infants and heights of children

Under 2 years

Measuring length before age 2 years must only be done using a length board or mat, other methods are unreliable and may give inaccurate results. This procedure requires one measurer and one other adult, for example a parent/guardian. The infant's/child's length should be measured without nappy or footwear.



Over 2 years

Height should be measured from aged 2 years, using a rigid rule with T piece, or stadiometer.

Ensure heels (without shoes), bottom, back and head are touching the apparatus with eyes and ears at 90°. Do not try to stretch the child upwards. Measure the child's height on expiration. Take three successive measurements and use the largest of the three.

Initial height measurement should be double checked, subsequent measurements can be single checked by a RN.

If there is significant deviation from the initial assessment the nurse should have this double-checked independently an another RN.



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Video resources on both height and length measurement are available via the following link:

<https://www.rcpch.ac.uk/resources/uk-who-growth-charts-guidance-health-professionals>

10.0 Equipment and Maintenance

Only grade 3 clinical electronic scales in metric setting should be used – a green sticker with background letter M (which means approved for medical use). Scales should be calibrated and maintained annually. The clinical engineering department are responsible for the following:

- Equipment calibration
- Equipment maintenance/servicing
- Any equipment found to be inaccurate/malfunctioning must be removed from service and sent to the clinical engineering department

11.0 References

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