AA 48. Monitoring parameters and equipment/tools: What equipment and monitoring tools i.e. growth charts, are recommended for accurately measuring and monitoring the growth of neonates?
AA.49 What specific growth parameters (e.g. weight, length, head circumference, BMI) should be included in growth monitoring, and how frequently should they be monitored?

Source recommendation			Back to question list
Source guideline title and developer	Enteral Nutrition in Preterm Infants: ESPGHAN Guidelines 2022, Koletzko et al.		
Existing guidelines recommendation	Length should be measured using a dedicated neonatometer with two fixed perpendicular boards and read to the nearest millimetre. Weight should be measured on calibrated digital electronic scales to the nearest 5 grams. Head circumference should be measured using non-stretchable tape in a standardised fashion. For growth monitoring, the Fenton 2013 or 2025 growth chart is recommended from birth to 50 weeks postmenstrual age. WHO growth standards are recommended after 50 weeks postmenstrual age.		
Year published	2022		
Search updated/assessment of new evidence	No		
Strength of recommendation	Conditional		
Certainty of evidence	Low		
Were EtD and SoF available?	No		
Is the recommendation recent and credible	Yes AGREE II score 67%		
Assessment of suitability for adolopment			
Is the recommendation relevant to local setting (population/ intervention/comparator)?	Yes		
Are the judgements in the source EtD acceptable without modification?	No		
Are any local contextual factors different (e.g. cost, equity, feasibility)?	Yes – a Fenton 2025 growth chart is now available and there needs to be a specification for the frequency of growth monitoring.		
EtD Criterion	**Summary of local evidence or context**	**Judgement**	**Notes**
Problem	Inaccurate or infrequent growth measurements lead to misclassification and missed identification of faltering growth.	Yes	Inconsistent equipment and technique across units.
Desirable effects	Standardised equipment and growth charts improve accuracy and early detection of growth deviations.	Favourable	Supports individualised nutrition planning.
Undesirable effects	Minimal, apart from potential cost of equipment and training. Too much emphasis on weight alone.	Minimal	Benefits outweigh any minor limitations.
Certainty of evidence	Moderate; based on consensus and practice recommendations.	Moderate	High agreement among clinical experts.
Values and	Clinicians and families value accurate growth monitoring as a core indicator of	Aligned	Promotes quality and safety.

preferences	wellbeing.		
Balance of effects	Strongly in favour of using standard tools and growth charts.	Favourable	
Resources required	Needs calibrated scales, neonatometers, and non-stretch tape; widely available but not always used.	Moderate	Additional staff training may be required.
Certainty of resource evidence	Costs of equipment are known. Neonatometer cost is approximately NZ$540 for preterm size and NZ$720 for newborn (term) size plus shipping (https://www.ellardinstrumentation.com/lengthboards-stadiometers/).	Moderate	
Cost-effectiveness	No evidence available but avoids costs associated with faltering growth and unnecessary interventions.	Favourable	
Equity	Variability in tool availability and training across neonatal units, especially smaller centres.	Reduced equity	
Acceptability	High – clinicians agree on need for standardised and reliable measurement tools.	High	
Feasibility	Feasible in most units with modest investment in training and equipment.	Yes	

Judgement criteria for EtD	
Decision Type	☐ Adopted as is ☑ Adapted ☐ De novo recommendation required
Explanation of adaptation	ESPGHAN 2022 recommendations directly apply to our neonatal setting. Recommendation on frequency of monitoring added and updated to include Fenton 2025 growth chart. The additional question about when to stop correcting for gestational age can be answered by the NICE guideline (National Institute for Health and Care Excellence. Developmental follow-up of children and young people born preterm (NICE Guideline NG72). London: NICE; 2017).
Final Recommendation	
Recommendation statement (adapted)	Measure weight, length and head circumference at least weekly. Use calibrated digital scales (to nearest 5 g), a neonatometer with two perpendicular boards (to nearest mm) and non-stretch tape for head circumference. Apply Fenton 2025 growth charts from birth to 50 weeks postmenstrual age, then switch to WHO standards. Correct for gestational age up to 2 years.
Strength	Strong
Certainty of evidence	Moderate
Basis for decision	Accurate growth monitoring is essential for managing preterm nutrition and wellbeing.
Subgroup Considerations	Particularly important in very preterm or growth-restricted infants where early deviations have long-term consequences.
Implementation Considerations	Units should ensure access to standard equipment and train staff in correct technique and use of growth charts.
Monitoring and Evaluation	Audit compliance with measurement protocols and consistency in chart use.
Research Priorities	Further research needed on the accuracy of growth tools in extreme prematurity and long-term outcomes based on early monitoring trends.