RESEARCH QUESTION

What are the evidence-based guidelines regarding growth measurement procedures and equipment for infants and children, birth to 18 years?

KEY FINDINGS

One systematic review and three evidence-based guidelines regarding growth measurement procedures and equipment for infants and children, birth to 18 years, were identified.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2014, Issue 8), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2009 and August 12, 2014. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.
#### SELECTION CRITERIA

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<th>Table 1: Selection Criteria</th>
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#### RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by evidence-based guidelines.

One systematic review and three evidence-based guidelines regarding growth measurement procedures and equipment for infants and children, birth to 18 years were identified. No relevant health technology assessments or meta-analyses were identified.

Additional references of potential interest are provided in the appendix.

#### OVERALL SUMMARY OF FINDINGS

One systematic review and three evidence-based guidelines regarding growth measurement procedures and equipment for infants and children, birth to 18 years were identified. Additional relevant clinical practice guidelines and consensus guidelines are provided in the appendix.

The systematic review described the revision of the 2003 Fenton Preterm Growth chart. The revisions aimed to ease transition from the preterm charts to the World Health Organization (WHO) growth charts.

According to a guideline from the Institute for Clinical Systems Improvement (ICSI), there is high quality evidence to support a strong recommendation that body mass index (BMI) should be calculated and recorded within medical records at least annually for children two years to 18 years. In addition, the ICSI guideline recommends that the United States Centers for Disease Control growth charts should be used for children two years to 18 years, and WHO growth charts should be used for children up to 23 months of age.

The guideline by Foote et al. offers major recommendations regarding length measurement instruments and techniques, height measurement instruments and techniques, calibration of instruments, training of personnel, diurnal variation in measurement, replicate measurements, blind measurements, length versus height measurements, and special considerations. The recommendations are based on varying levels of evidence.

The WHO Child Growth Standards provide reference measurements for children up to five years of age for a number of categories, including: length and height-for-age, weight-for-age,
weight-for-length, weight-for-height, BMI-for-age, head circumference-for-age, arm circumference-for-age, subscapular skinfold-for-age, and triceps skinfold-for-age.
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses


Guidelines and Recommendations


4. World Health Organization. The WHO child growth standards [Internet]. Geneva: The Organization; 2009(?)[cited 2014 Aug 26]. Available from: http://www.who.int/childgrowth/standards/en/ See: Length/height-for-age; Weight-for-age; Weight-for-length; Weight-for-height; Body mass index-for-age; Head circumference-for-age; Arm circumference-for-age; Subscapular skinfold-for-age; Triceps skinfold-for-age.

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APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies – Development of Growth References


Guidelines and Recommendations – Unclear Methodology

Clinical Practice Guidelines


See: Measurement Technique

See: Choice and Maintenance of Equipment, page 6; Obtaining accurate weight measurements across the age range, page 7-8.

See: Birth to 2 years, page 2; Over 2 years, page 3

See: Growth Measurement, page 3–5

Consensus Guidelines


Review Articles


