

## **Abstract**

**Title: Development of an Evidence-Based Clinical Practice Guideline on Linear Growth Measurement of Children**

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**Purpose:** The purpose of this project was to develop an evidence-based clinical practice guideline on the measurement of recumbent length and stature in infants, children, and adolescents. Growth is well established as a sensitive indicator of health and growth monitoring is performed as a component of child health care around the world. Since impaired or abnormal growth is a common consequence of a wide range of conditions, its identification acts as a useful early warning of possible pathology. Effective growth monitoring requires accurate and reliable linear growth measurement. Unfortunately, children are frequently measured incorrectly due to casual techniques using faulty instruments. A clinical practice guideline on linear growth measurement of children provides an interface between research and practice.

**Data sources:** Librarian-assisted literature searches were conducted using these databases: Cochrane Controlled Trials Register, Joanna Briggs Institute, MEDLINE, CINAHL, EMBASE, and ERIC. Additional studies and alternative literature were identified through the mining of article reference lists, contact with experts in the field, anthropometric and endocrinology textbooks, and informal discovery. Secondary searches were performed throughout the project to identify gaps in the literature, and near the completion of the guideline to identify any new literature that had been published during the course of the project.

**Conclusions:** Systematic methods were used to identify evidence to answer focused clinical questions about linear growth measurement. A multidisciplinary team of health professionals critically appraised and synthesized the evidence to develop explicit clinical practice recommendations using an evidence-based practice rating scheme. Data analyses from internal reviews, external expert reviews, and a pilot study were used to improve the guideline's clarity, applicability, and feasibility, while demonstrating its validity and reliability. The completed guideline includes clinical practice recommendations for growth measurement instruments, techniques, diurnal variation, use of less expensive instruments, calibration of instruments, and replicate measurements.

**Implications for Practice:** Adoption of the clinical practice guideline will improve the accuracy and reliability of growth measurements in children, thereby facilitating appropriate clinical assessments and decision making. This should improve the timely recognition of growth disorders and reduce inappropriate and costly referrals in children with normal growth, which will ultimately improve child health outcomes. Widespread dissemination and adoption of the guideline can have a significant and positive impact on growth assessment and child health care around the globe.