

# **Jordanian growth references for Jordanian Children aged 3 to under 18 years compared to WHO and CDC growth Standardized National Growth Charts**

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## **Abstract**

This study aims to evaluate the validity of using the international growth standards on Jordanian children and adolescents, to create growth charts and equations customized to Jordanian children and adolescents and compare them to the international growth standards.

71,583 Jordanian children and adolescents (39.8 percent males; 60.2 percent females) aged 2-20 years were selected from the Hakeem Program database and a private school in Amman. Height-for-age, weight-for-age, and Body Mass Index (BMI)-for-age were analyzed comparatively for Jordanians against the international growth standards. The Generalized Additive Model for Location, Scale, and Shape (GAMLSS) was applied to develop Jordanian-specific growth models.

Jordanian children and adolescents showed significant deviations in their measurements

from international standards and growth reference values leading to the development of a population-specific growth chart.

The application of Jordanian growth standards will enhance the accuracy of evaluating children and adolescents' wellness and improve the assessment of their growth status.

**Keywords:** BMI-for-age, height-for-age, Jordanian children and adolescents, Jordanian growth standards, weight for age.