

Physical growth in young Chilean football players: Proposal of percentiles based on chronological and biological age

López S.C.

Gómez-Campos R.

Cornejo J.M.

Magister L.M.

Urra-Albornoz C.

Cossio-Bolaños M.

Objectives. a) To compare physical growth to the 2012 American standard from the Centers for Disease Control and Prevention (CDC); b) to analyze physical growth by chronological and biological age; c) to propose physical growth charts based on chronological and biological age.

Methodology. A descriptive (cross-sectional) study was conducted in young Chilean football players based on weight, standing height, and sitting height. These were compared to the CDC-2012 standard. Percentiles were developed using the LMS method. **Results:** A total of 642 young Chilean football players aged 13.0-18.9 years were studied. Their body weight was lower than that of the CDC standard from 13.0 to 18.9 years old ($p < 0.05$), whereas their height showed no significant differences in the initial age categories (13.0-13.9 and 14.0-14.9 years). Differences started to be observed as of 15.0 years old up to 18.9 years old ($p < 0.05$). In relation to chronological age, weight explained 31%; standing height, 16%; and sitting height, 0.09%, whereas in relation to biological age, weight explained 51%; standing height, 40%; and sitting height, 54%. Percentiles were developed based on chronological and biological age. **Conclusion.** These youth showed different physical growth patterns compared to the CDC-2012 standard. Their assessment reflects better explanatory percentages for biological age than for chronological age. The proposed percentiles may be an alternative to keep track of the physical growth patterns of young football players in sports settings in the short, medium, and long term. © 2018 Sociedad Argentina de Pediatría. All rights reserved.

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