Predictors of indicators of body adiposity by chronological and biological age in children and adolescents residing in southern Chile [Predictores de los indicadores de adiposidad corporal por edad cronológica y biológica en niños y adolescentes que residen en el sur de Chile]

Alvear F.

Gomez-Campos R.

Urra-Albornoz C.

Pacheco-Carrillo J.

Cossio-Bolaños M.A.

Introduction: The aims of this study were to identify the skin folds that predict the indicators of body adiposity (Body Mass Index [BMI] and waist circumference [CC]), as well as to analyze if the indicators of body adiposity should be evaluated by chronological and/or biological age. Material and Methods: 131 children and adolescents (76 men and 55 women) were studied. The age range ranged between 6.0 and 14.9 years. Weight, standing height, sitting height, waist circumference were evaluated. The BMI and the peak growth rate years were calculated. The nutritional status categories were determined by BMI and CC according to the cut-off points of the CDC-2012. Results: The four folds used (tricipital, bicipital, suprailiac and calf) explained the BMI from 38 to 58% in men and women from 38 to 72%. The power of explanation for CC in men was 30 to 56% and in women from 27 to 53%. The chronological age explained the BMI and CC in men from 0.08 to 37% and in women from 15 to 17%. The biological age explained BMI and CC in men from 11 to 44% and in women from 21 to 24%. Conclusions: The suprailiac fold appears as the best predictor of BMI and CC in both sexes. The analysis of both indicators must be carried out by biological age rather than by chronological age.

Adiposity

Adolescent

Child

Growth

adolescent

adolescent obesity

age

Article

biceps brachii muscle

body height

body mass

body weight

child

childhood obesity

female

gastrocnemius muscle

growth rate

human

major clinical study

male

nutritional status

sitting

skinfold

standing

triceps brachii muscle

waist circumference