

Author: Camila Mazzeti

Co Author: Jéssica CUMPIAN SILVA (São Paulo University), Ana Elisa Rinaldi (Federal University of Uberlandia), Wolney Lisboa Conde (São Paulo University)

Topic: Capacity development for public health nutrition

Title: INTERNACIONAL ALLOMETRIC SCALING FOR WEIGHT AND HEIGHT IN CHILDREN AND ADOLESCENTS IN 3 MULTIETHNIC COUNTRIES

Presentation Type: Poster

Introduction: The adjustment of the weight-height ratio to body mass is important to obtain a body mass index independent of height and to increase the association between body mass and fat.

Objective: To analyze international allometric scaling of body mass to height for children and adolescents.

Methods: Data came from national surveys from USA(1999-2013), Brazil(1989) and Mexico(2006), including subjects under 20 years. The exponents “p”, specific for sex and age, were estimated by linear regression, using weight and height values in log. The extreme values of weight or height (below or above 1.9 SD(z) of the residue of the regression of weight and height) were excluded. The p mean was modeled by spline (5 knots). Correlation between body mass index and height was estimated by Pearson’s correlation.

Results: The exponent p to adjust the weight-height ratio has a value of 2 at birth and reaches maximum values at 10-11 years in boys and 9-10 in girls. After, p regresses to 2 around 16 years in boys and 15 in girls. The correlation values between height and body mass estimated after using p exponents are near to zero for every ages.

Conclusion: The allometric scaling showed different values than isometric one. . The exclusion of extreme values is important to make exponents “p” more constant through the ages. The value of correlation between body mass-height in allometric scaling near to zero express that isometric scaling is not achieved through in isometric scaling.