

Monthly Changes in Pubertal Growth in Yucatecan Adolescents

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KEYWORDS Monthly Changes. Puberty. Yucatan. Adolescent Spurt

ABSTRACT The problem whether the pubertal spurt is a single developmental effort or series of changes with dominance of intensified increments was considered. The examinations took place in the tropical climate of Yucatan and included 49 boys and 47 girls aged 11-13 years and being of the Maya, Mestizo and Creole origin. The youths were attending two schools located in rather poor districts of Merida city (Yucatan, Mexico). The measurements started in February 2002 and were continued monthly till November 2003. The standard anthropometric methodology was applied to measure body height, weight, arm, waist, hip and calf circumferences and five subcutaneous fat folds. Bioimpedance techniques were used to measure fat mass (FM), fat free mass (FFM) and total body water (TBW). Age at menarche was detected. The results show that each individual and its variable show a different rate of changes. It suggests that the rate of development and changes of body mass and fat mass are occasional. The only regularity shows that rather short (1-3 months) periods of rapid growth (saltations) are divided by slower growth periods (stasis), but their duration and time of occurrence have a very individual character. The rate and rhythm of each body build variables are also different. These phenomena depend rather on conditions in which the development of each individual occurs, probably as well as on its genetic predispositions and ecosensitivity. The differences in onset and intensity of pubertal spurt depend on alternations between periods of saltations and stasis of growth processes and on changes in body mass. The specific monthly rate of changes of body build measures, typical for studied group of youths and/or seasonal changes according to climatic conditions (cyclic changes in nature) were not observed. The preliminary results suggested that observed changes rather depend on an adjustment to local living conditions, mostly on nutrition and mode of life (physical activity and leisure). These studies need to be repeated during a longer period of time (at least within 5-year period), in different climatic conditions and social groups.