

# **Women during postnatal ontogenesis: somatometric index of bone mass and its interrelations with physical development**

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## **Introduction**

The human body mass bone component (BMBC) may change dynamically at the stages of postnatal ontogenesis under the impact of various coefficients. In addition, considering the certain ethnic and socio-cultural features of nutrition, the prevalence of the phenomenon of deceleration in some countries, as well as in Ukrainian regions, no percentile scales are developed to assess the body mass index.

## **Aim**

Study systemic interrelations between somatometric indexes and physical development of women during postnatal stages

## **Materials and methods**

The research of peculiarities of bone mass formation among girls of different age was done at population level with use of classic somatometry (height, weight of the body, height weight index, girth of the chest, girth of the head), ultrasound bone densitometry. Results of anthropometry were the material of the research, which were done according to special program among 635 women, stratified during ontogenetic period.

## **Results**

Peculiarities of body strength index in girls were investigated among children of different age; during height and development body strength index ranges between  $85,5 \pm 0,9$  and  $103,6 \pm 2,0$ . The analysis between BSI (Bone Strength Indexes) and height-weight index of girls is characterized by state densitometry (Bone Strength Indexes and height-weight index is  $0,856 \pm 0,002$  and  $0,933 \pm 0,002$ ), testifies strength of bone tissue and bone mass is determined by membranous bone component, and the accumulation of bone mass in girls by mineral substances in membranous zone of tubular bones. At the same time, reducing somatometric gradient strength in girls at the age of 11-12 testifies to the relative decrease in the accumulation of minerals and increasing mineralization in proper trabecular bone tissue. Study the relationship between indicators of physical development of schoolgirls and bone tissue indicators allowed to find out that BSI is characterized by a strong direct correlative relationship with indicators of height ( $r_{XY} = +0,985$ ), body weight (BW;  $r_{XY} = +0,984$ ) and girl's head girth ( $r_{XY} = +0,978$ ).

## **Conclusions**

The issue of assessing somatometric gradient strength of bone has been decided in an innovative way and regional variety of this indicator for women has been demonstrated. Some correlative relationships between somatometric and densitometrical indexes and backbone coefficients of each indicator of physical development.