childhood somatotypes significantly differ in the results of the Philippine test only at the age of 7 years, when children have positive and negative values. Complete replacement of milk teeth with the permanent ones occurs in girl of type D at 10 years, of type M – at 11 years, of types T and A – at 12 years. In boys constitutional differences in teeth replacement are more pronounced before 11 years, while at the final stage (up to 13 years) they develop more synchronously. Variations of the loss of primary teeth in the representatives of different somatotypes are stronger than in the eruption of the permanent dentition. Secondary sexual characteristics in girls are accelerated in the types as follows: A<T<M<D, and in boys - A<T<D<M, which coincides with the secretion of estrogens for females, and androgens for males in the pubertal period.

Key words: *children, somatotypes, different criteria of biological age*

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SECULAR CHANGES OF ADIPOSITY AND PHYSICAL FITNESS DURING EARLY GROWTH

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Secular changes of somatic growth, body composition and functional capacity has concerned not only school children and adolescents, but also preschool age children. Highest level of spontaneous physical activity (PA) was found in Czech preschool children, with its following significant decrease in school and adult age. This means that the reduction of PA can have a more serious consequences in the following life. Since the 1950‘3-70‘s up to the first decade of this millenium, significant increase of adiposity, especially on the trunk (evaluated by skinfold thickness measurements) was revealed in Czech preschool children. Increased adiposity was accompanied by significant deterioration of motor developement (evaluated by motor tests – broad jump and ball throw, as markers of the adaptation to exercise) which has been considered as the result of PA reduction along last decades. Changes of lifestyle concerning nutrition and PA have therefore negatively influenced Czech growing population especially during the period of adiposity rebound (AR), which has been also occurring at a significantly lower age as compared to previous decades: Earlier start of AR, accompanied by increasing adiposity is considered especially as an increased risk with regard to later development of obesity and health prognosis. Global epidemy of obesity has concerned during recent decades also children and adolescents not only in the industrially developed, but also in transition countries, or in selected social strata of developing countries. - An adequately increased physical activity tended to reduce adiposity, improved cardiorespiratory efficiency in spite of an increased food intake, and significantly increased serum level of high density lipoproteins (HDL) in Czech preschool children. Percent of body fat correlated significantly with total cholesterol and triglycerides serum levels (TG and TC) already at preschool age, which indicates a significant role of PA in health development. Organized physical education for preschool children (physical education classes for preschooler with one of the parents, or any other caretaker), or special physical education regime introduced in selected Czech kindergartens improved significantly motor development already at preschool age. As follows, aimed intervention in lifestyle including PA regime has to start in children as early as possible.

Key words: *secular changes, preschool children, adiposity,motor development*

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