

SOMATIC DEVELOPMENT OF MONGOLIAN AND KALMYKIAN CHILDREN AND ADOLESCENTS

Godina Elena¹, Khomyakova Irina¹, Zadorozhnaya Ludmila¹, Lkhagvasuren Gundegmaa²,
Burlykov Vladimir³

¹*Research Institute and Museum of Anthropology, Lomonosov Moscow State University, Moscow, Russia*

²*Mongolian National Institute of Physical Education, Ulaanabaatar, Mongolia*

³*Kalmykian State University, Elista, Russia*

The aim of the study is to compare growth characteristics of Mongolian and Kalmykian children and adolescents. The materials were collected by the authors in 2007-2008 and in 2010–2011 as a result of anthropological investigations in the cities of Elista (Republic of Kalmykia, Russian Federation) and Ulaanbaatar (Mongolia). Total number of the investigated children from 9 to 17 years of age was about 2,000. The program included standard anthropometric measurements (Bunak, 1941), hand grip strength, somatotype evaluation according to Shtefko-Ostrovsky method. A number of indices were calculated including Body Mass Index (BMI), absolute and relative fat mass (Slaughther et. al., 1988). Statistical analysis, performed with the software "Statistica 8.0", included descriptive statistics, normalization procedure, one-way ANOVA with Scheffe's test for multiple comparisons. The results show significant differences between Kalmykian and Mongolian children in most of the measurements: stature and weight, chest, waist, hip and arm circumferences, body diameters are bigger in Kalmykian schoolchildren and the differences are stronger in boys. During the whole age period Kalmyks are taller than their Mongolian peers. At the age of 17 Kalmykian boys' stature is 173.89 cm, while for Mongolians it is 168.34 cm ($p < 0.001$); for the girls the corresponding figures are 161.8 and 159.42 cm ($p < 0.05$). Mongolian boys at almost all age groups have smaller values of chest circumference and BMI but surpass Kalmykians in chest depth. Mongolian girls after the age of 13 have slightly bigger values of chest circumference and BMI, as well as bone diameters. Mongolian boys and girls have significantly smaller values of skinfold thickness and fat mass. In both ethnic groups the accumulation of fat layer is bigger on the trunk, particularly in the abdomen area. There were no differences between Kalmykian and Mongolian adolescents in maturation rates evaluated by the development of secondary sex characteristics. As both groups have similar ethnic origins, it can be concluded that the revealed differences are the results of the influence of socioeconomic factors.

Key words: *growth, physical development, biological age, Kalmykian schoolchildren, Mongolian schoolchildren, auxology, anthropology*

Contact information: Godina Elena, e-mail: godina@antropos.msu.ru,
Khomyakova Irina, e-mail: Irina-khomyakova@yandex.ru,
Zadorozhnaya Ludmila, e-mail: mumla@rambler.ru,
Lkhagvasuren Gundegmaa, e-mail: mongol_gunde@mail.ru,
Burlykov Vladimir, e-mail: burlykob@mail.ru.