

Nationwide Survey of 19-year old adult Polish men: Intergenerational changes of biological traits in relation to socio-economic development in the second half of the 20th century and at the beginning of the 21st century in Poland.

Some biological features are highly sensitive to changes in socio-economic and political conditions, and their intergenerational variations are known as secular trends. Among the features commonly used for these purposes are body height, as a cumulative trait that reflects the effect of all factors regulating the growth process throughout childhood and puberty, and body weight (expressed as relative body mass [kg/m^2]), reflecting the current state of nutritional status. Both features are considered to be important public health indicators, reflecting the biological condition of a given population. Periodic, nationwide surveys of 19-year-old adult Polish men, mandatorily examined due to their qualification for military service (conscripts commissions), are a particularly good opportunity to conduct anthropological and sociological research, aimed at monitoring the direction and intensity of secular trends, the biological effects of economic social stratification, and the biological condition of young men's population.

We propose to conduct, in Spring 2022, a survey of 10% of all 19-year-old adult men born in 2003. The obtained results will allow for comparisons with the results of similar examinations carried out in 1965, 1986, 1995, 2001 and 2010 by the Department of Anthropology PAS (currently belonging to the Hirszfeld Institute of Immunology and Experimental Therapy Polish Academy of Sciences in Wrocław). The use of the same research methodology, including every tenth man in all medical commissions, will allow to obtain reliable comparisons with previous results and eliminate systematic methodological errors, as well as ensure that the research is representative of all regions of Poland and social environments distinguished on the basis of urbanization level and socio-economic status of a family.

Compiled results of all surveys will allow presenting the current, average body height of young Polish men, to follow the directions and intensity of secular changes of this feature, to identify differences between individual social groups and, moreover, they will help answer the question: do social differences in Poland with respect to this feature are decreasing, levelling off, or increasing? On the basis of the obtained results, we will receive information on the intensity of changes towards increasing the prevalence of overweight and obesity in Poland, along with the progressing economic development related to significant civilization epidemiological threats in the societies of developed countries. The above information will allow us to determine the directions of the analysed changes taking place in Poland in comparison with other worldwide populations.

The compilation of biological and socio-economic data will allow for a detailed description of the biological manifestations of social inequalities, and thus the biological effects of economic stratification in Poland and changes in its size over time, which are extremely important from a sociological point of view. The observed biological effects of social inequalities seem to be more informative than economic indicators *per se*. The description of this phenomenon becomes particularly important in the era of intensive economic changes taking place in Poland. Considering the numerous reports on the adverse impact of social inequalities on the biological condition of societies, the proposed continuation of the research on 19-year-old adult men is particularly important from the point of view of the development of science, civilization and society.