

The work is focused on the study of variability in concentration and determination of reference values of selected toxic trace elements and beneficial in the human organism, which are monitored within the CZ-HBM (cadmium, lead, mercury, copper, selenium and zinc). The results shown here are based on concentrations of selected trace elements in blood and urine of adults and children from the locality Benešov, Plzeň, Ústí nad Labem and Žďár nad Sázavou for the period 1996 - 2003. These data were processed by descriptive statistics annually. The aim was to undergo a detailed statistical analysis, taking account of indications of donors and children received a questionnaire (age, gender, location, smoking), to assess the development of long-term time series and to establish reference values valid for population groups in the period of time.