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APPLICATION OF ATOMIC ABSORPTION SPECTROMETRY IN THE ELEMENTS AND HEAVY METALS DETERMINATION IN BIOLOGICAL MEDIA – HUMAN HAIR

ABSTRACT *Hair analysis is used in assessment of the body mineral status, and environmental or occupational exposures. This study was undertaken to compare the elements concentrations [calcium (Ca), magnesium (Mg), zinc (Zn), copper (Cu), iron (Fe), lead (Pb), and cadmium (Cd)] in hair from 995 persons taken in the years 2007-2010. The measurements were performed by atomic absorption spectrometry (AAS). The average values for concentrations were as follows (in $\mu\text{g/g}$): Ca – 414, Mg – 19, Zn – 160, Cu – 13, Fe – 10, Pb – 1.0, Cd – 0.07. The contents of Ca, Mg, Zn, Cu were statistically higher in the hair of females in comparison with males and the concentrations of Pb and Cd were lower. Significant correlations were found to exist between age of volunteers and the amounts of Ca, Mg, Zn, Fe and Pb. Both in case of correlations between age and elements contents and the correlating metals pairs, the variations between females and males hair were stated.*

Keywords: *atomic absorption spectrometry, hair, gender, elements, human health*