

The Mineral Profile of Children Living in the East of Ukraine

Tetyana Frolova*, I Siniaieva, I Tereshchenkova, N Stenkova and O Atamanova
Kharkiv National Medical University, Ukraine

A comparative analysis of the mineral profile (MP) in hair in a practically healthy children of school age (6-18 years old), who are residents of different regions of East Ukraine was monitored. 235 children who live in ecologically unfavorable areas (group I) and 201 children living in relatively ecologically favorable regions (group II) of East Ukraine were examined.

MP of children of the 1st group was characterized by significant reduction of essential microelements (ME): Ca, Zn, I and Mn, against a background of higher levels of potentially toxic ME: Ni, Cr, Cd and Rb and toxic ME - Pb, Sr and As. The analysis of second group showed an imbalance of the essential elements with decreasing of Ca, Zn, Mg, P and significant decreasing of essential ME - Fe.

It has been also shown evidenced deterioration of the mineral profile in children aged 6-11 owing to a higher level of potentially toxic ME in contrast to children of the older age group.

During a past decade, children of the East Ukraine developed reduction of Zn, Mn, and Ca and elevations in the levels of Pb, Al, Sr, Ni, Cd and this is explained by the state of the ecological environment of a large industrial region. There is no doubt that an unfavorable state of the environment creates a specific mineral profile and causes the mineral imbalance even in conditionally healthy children, which in turn may become the basis for the formation and development of chronic pathology in children.

Biography:

Dr. Tetyana Frolova has been graduated Pediatric faculty of the Kharkiv Medical Institute in 1991 with the speciality Pediatrics. Since 2004 – till now- Head of the department of Propaedeutics of Pediatrics No.1 of Kharkiv National Medical University. Since 2005 she is the head of the Regional Medical Diagnostic Center of metabolic disorders of bone tissue in children. In 2007- defended a dissertation for the degree of a doctor of medical sciences. In 2008, she received the title of professor at the Department of Propedeutics of Pediatrics No.1 of Kharkiv National Medical University.