

Predictive, Preventive and personalized Medicine & Molecular Diagnostics

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Multielement profiling as an effective tool of predictive, preventive and personalized medicine

Based on the database containing more than 500,000 cases from Russia and more than 40 countries since 2000 we have developed a medical technology for detection and correction of impaired mineral homeostasis. The basis of the technology is personalized diagnosis of trace element profile of the organism with subsequent correction using monoelement supplements and efficiency control. In contrast, it has been demonstrated that the use of vitamin-mineral complex has low efficiency due to: i) Simultaneous administration of numerous minerals and trace elements, that may result in competition and ultimately, reduced bioavailability of one of the components (e.g. iron, copper, zinc); ii) The absence of personalized approach, as the patients obtain a standard commercial complexes of minerals and vitamins irrespectively of their real requirements; iii) Problems with assessment of the vitamin-mineral complex efficiency. Therefore, the developed technology significantly improved correction of trace element status of the organism using the principles of personalized medicine. The current technology was successfully used in treatment of trace element disturbances in patients with neuropsychiatric (e.g., Autism Spectrum Disorders), metabolic (e.g. diabetes) disorders, etc. The technology was also used in prophylaxis in persons with extreme lifestyle (soldiers, elite sportsmen, liquidators of nuclear explosion consequences in Chernobyl). Finally, personalized assessment of trace element status allows to reveal the targets for population health policies. In particular, it has been demonstrated that disturbances of trace element status are associated with demographic parameters and morbidity at the population-wide level, being indicative of the possible 'macro' effects of 'micro' elements.

Biography

Anatoly V Skalny has completed his PhD and DSc. He is the Vice-President of Trace Element Institute for UNESCO, Head of Medical Elementology Chair of RUDN University, President of ANO Centre for Biotic Medicine, Vice-President of Federation of European Societies on Trace Elements and Minerals, Chairman of Russian Society of Trace Elements in Medicine, Editor-in-chief of Trace Elements in Medicine (Russia). He is also Member of Editorial Boards of "Journal of Trace Elements in Medicine and Biology" (Elsevier), and "Biological Trace Element Research" (Springer). He has published more than 400 papers, h-index 27 (RU).

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