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Geomagnetic deprivation– Modeling, prognosis, prevention

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Abstract

According to the data of some geophysicists from the end of XX century, the full vector of the magnetic field of the Earth, following jerks, periodic secular excursions, is gradually weakening. Accordingly to the buffering properties of the Earth magnetosphere, which protects biosystems from excess solar proton-electron beams, are decreasing. Using modeled weakening of the geomagnetic field we had to answer the question: what are the possible biotropic consequences of further development of heliophysical pressing for a man?

Prognostic evaluation of the possible genetically conditioned polyfunctional human reactions at repeated weakening of the Earth's magnetic field and if necessary, the development of preventive non-medicinal technologies.

Objectives: To study the effects of periodic short-term weakening of the full vector of the geomagnetic field on neurophysiological and other human parameters controlled by genes D4, B1 and TNF, and to develop and test a way for non-medicinal prevention of excess heliomagnetotropic human reactions.

Tools and Techniques: Included the use of large-and small-sized installations, weakening the magnetic field of the Earth in 300 - 500 times, genotyping of examinees on the length of the alleles of gene D4, the dynamic registration of electroencephalographic, psycho physiological, hemodynamic and other parameters and the application of heliogeomagnetoprotective mean - drinking water, manufactured under license in Novosibirsk by the name "AquaHelios".

Contingent: Healthy male volunteers (n = 39) aged 18 -20 years.

Design of the study envisaged the scheme of "double-blind method", in which the examinees in the experimental and control groups passed the courses of geomagnetic deprivation (or its simulation), consisting of 12 weekly sessions of 30 minutes during 3 months.

Results. Significant differences ($P<0.05$) between volunteers in the experimental and control groups on the dynamics of electric, psycho physiological and other parameters, coupled with the appropriate genetic markers and intensity of heliophysical factors at different stages of ontogeny of the examinees and their parents were showed (1). The phenomenon of "heliophysical expression of genes ", manifested at the modeling of short-term, prolonged geomagnetic deprivation, was opened (2). It is shown, that drinking water "AkvaHelios" has helioprotective properties and contributes to significant positive inversion of the functional dependence of many human functional systems on heliogeophysical impacts, increasing at geomagnetic deprivation (3). The necessity for creation of a global system of geoecological life supporting of a man in conditions of spreading heliogeophysical changes is scientifically substantiated (4).

Biography

Alexander Trofimov has completed his MD (Doctor of Medicine) in 1998 from Siberian Branch of Russian Academy of Medical Sciences. During many years he was (until 2010) chief of laboratory of Helio-climatopathology of Scientific Center of Clinical and Experimental Medicine (SB RAMS, Novosibirsk). From 1994 and now he is the Director of International Scientific-Research Institute of Cosmic Anthropoecology (Russia, Novosibirsk). He has 7 patents, published 5 monographs and more than 60 papers in reputed journals such as Arctic Medicine, Journal of Circumpolar Health and many others.