

Some aspects of seasonal variations of children functional state in Arctic

A.V. Enykeev (1), **O.I. Shumilov** (1), E.A. Kasatkina (1) and A.V. Chramov (2)

(1) Institute of North Industrial Ecology Problems, Kola Science Center RAS, 184209 Apatity,

(2) Baltic State Technical University, St.-Petersburg, Russia, (oleg@aprec.ru / Phone: 7-81555-79703)

The seasonal variations of functional states of 12-13 year age children living behind the Polar Circle (Kola Peninsula: 67.58N, 33.31E) were studied. Totally the experimental group consisted of 50 children. Half of them were ordinary school boys, others were the pupils having got some regular physical loadings on average 10-12 hours in a week. The experiment lasted 8 months from September to April 2004-2005. It included a number of psychophysiological tests namely Shtange probe, "individual minute" probe, test of reaction on moving object, study of heart rhythm variability, test of physical capacity of work etc. Every test was repeated ten times. It was shown that at the high-latitude region the children functional states are influenced by both meteorological and geophysical (geomagnetic disturbances) factors. As a rule, the functional state of the children having got regular physical loadings was higher compared with ordinary pupils. The functional states of the children were lower in equinoxes when one can observe enhanced level of geomagnetic disturbances and great variability of meteorological parameters. The opinion that the Polar Night period is the most unfavorable one for children living in Arctic was not confirmed by above mentioned tests.

The work was partially supported by Russian Foundation for Basic Research (grant N 05-04-97528).