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THE CHARACTERISTIC OF FUNCTIONAL RESERVES AND GUSTATORY SENSITIVITY AT DIFFERENT ETHNOS, LIVING IN REPUBLIC SAKHA (YAKUTIA)

The functional reserves of cardiorespiratory system are investigated in different ethnic groups of Yakutia.. At research of human gustatory sensitivity ethnic dependence of gustatory senses is established.

Keywords: cardiorespiratory system, gustatory sensitivity.

Introduction. The negative anthropogenous factors influence not only ecological systems, but also promote decrease of reserves of health on individual and populations levels, increase of a degree psychophysiological and genetic pressure, growth of a specific pathology and occurrence of the new forms of ecological illnesses, and in some regions and increase of the phenomena depopulation.

In conditions of Far North on the man render influence of the extreme factors - low temperatures, specific photoperiodicity, factors of an electromagnetic nature, heavy oxygen and carbon modes. For radical ethnos of Far North the extremeness conditions of climate is much lower, than for the visitant of the population, in connection with inclusion in adaptive process of genetic mechanisms of adaptation [1, 6]. However, transition to the new forms of labour activity, fast change (in historical prospect) of nomadic life to settled, radical changes of household conditions, character of a feed and other changes of ability to live could affect on system of human homeostasis of the radical inhabitants [2, 3, 5]. In this connection, the significant interest represents study of reserve opportunities at different ethnic groups of the population of republic.

In extreme conditions the man tests maximal temperature, psychological and emotional of loading, is in a condition of a constant pressure. In this connection adequate feed is a means for simplification, simplification of transition from one metabolic of a condition in another. In turn, an inadequate feed breaks adaptation mechanisms of reorganization of an exchange of substances and character of interaction enzymes. So, carbohydrates the type of a feed at the radical inhabitants of North promotes decrease of activity lipase in intestine; further it results in increase in blood lipoproteins of low and very low density [4].

Hence, lipoproteins the type of a feed of the man in North can be considered as original antistress a means for preservation of stability organism [9]. The study of changes of gustatory sensitivity of the man in North, in turn, is not less urgent, than equation of a feed of the man in extreme climatic conditions.

Materials and methods of research. A general characteristic, volume and the methods of research are submitted in the table 1. Two groups of a quota surveyed were generated: 1 group - surveyed - europeoids, 2 groups - inhabitants of a radical nationality.

Results and discussion. The comparative analysis of the characteristics of anthropological from the inhabitants of Republic Sakha (Yakutia) has shown, that on some

parameters they differ among themselves (tab. 2). So, length and the area of a surface of a body, authentically is higher ($p < 0,05$) at surveyed - europeoids, and index Kettle and Rorers - at the inhabitants of a radical nationality. The index Kettle is important physiological parameter describing constitutional features of the man, degree of its physical development and level of its power exchange.

One of major functions determining serviceability organism, is the function of breath. The parameters of respiratory function can be divided into two components: the characteristics of the actually respiratory device and parameters of gas changes in easy, reflecting transport of gases by blood, work of heart and condition of fabric breath.

The comparative analysis of importance VPC and MVB at surveyed has shown authentic increase of these parameters in a years season in comparison with winter ($p < 0,05$). Thus at europeoids of importance VPC and MVB authentically is higher, than at the radical inhabitants ($p < 0,05$). The seasonal changes VPC have made 2,4 % and 3,9 %, accordingly. Is characteristic to note, that the decrease of the attitude VPC from DVPC was observed in the winter period of year. At the representatives europeoids at this time of year higher importance of MVB are revealed, at the expense of increase of frequency of breath. The observable changes of frequency - volumetric of pulmonary ventilation in the party of relative prevalence of frequency of breath can specify decrease of functional reserves of external breath. At surveyed - europeoids seasonal changes BV and MVB have made 14,3 and 8,4 %, and at the radical inhabitants - 16,4 and 7,7 %, accordingly ($p < 0,05$).

The study tracheobronchial of passableness has shown, that DVPC at surveyed both groups exceeds european age norms on 3-12 of %, is especial in the summer (all parameters are given in percentage of due meanings on Knutson). In the winter period the authentic decrease of passableness bronchus irrespective of an ethnic accessory ($p < 0,05$) was observed.

The passableness of various parts of tracheobronchial systems lower is established, that at the radical inhabitants, than at europeoids. It, apparently, is adaptive a structurally functional component carrying out function of protection of a fabric easy from overcooling and reflecting physiological mechanisms thermoregulation through respiratory ways. At the same time narrowing bronchus increases loading on intimate - сосудистую system [1, 3, 5, 7].

Results of the statistical analysis of seasonal changes of parameters is cardiovascular systems at surveyed essentially differed in contrast seasons of year. So, the frequency of intimate reductions in rest authentically is higher in winter time and at europeoids, and minute volume blood pressure - in years and at the radical inhabitants ($p < 0,05$). The seasonal changes MVBP at europeoids have made 3,3 %, and at the radical inhabitants - 4,4 %. The given shifts specify moderate prevalence of sympathetic nervous system, that in conditions of cold stress can promote a premature exhaustion of functional human reserves. At the same time, the parameters of blood pressure at healthy surveyed had no authentic distinctions in contrast seasons of year, that testifies to more expressed inertness and stability of these parameters.

The very important parameter describing function of cardiovascular system, is the double product (DP), which reflects a level of hemodynamic loading on cardiovascular system. The analysis has shown, that the highest meanings of DP were observed in group of the men - europeoids in the winter, basically at the expense of increase a SBP, and low at the radical inhabitants - summer, that testifies to more economic functioning of cardiovascular system in this period.

The stability of blood pressure optimizes microcirculation and transcapillar an exchange in fabrics, keeping a steady level metabolism, that testifies to more high level adaptation of the man to conditions of Republic Sakha (Yakutia).

In northern conditions at the man is formed lipoproteins a type of a feed appropriate phenogenotypical to properties of the radical inhabitants of North. Opposite, in areas with a warm climate at the inhabitants prevails a lipocarbohydrates type.

However, first of all, the lipoproteins type of a feed answers a condition of metabolism to the man in North testing on long enough influence of the extreme factors of an environment, irrespective of his ethnic accessory.

At alien of the population of North (European) in a condition of a long pressure there is switching a power exchange with carbohydrates such as on lipids. The radical inhabitants of North use for these purposes exogenous fat, whereas alien - endogenous stocks of fat [9].

The received results specify that the average threshold of gustatory sensitivity (TGS) to salty, sour and bitter at the people living in Yakutia, irrespective of ethnos, was authentically below, than at the persons living in others climatic zones (a fig. 1).

Average TGS to sour ($0,054 \pm 0,002$ %) at surveyed in 12 time are lower, than at the persons living in the Central European region of Russia, to salty ($0,073 \pm 0,003$ %) - in 2,7 times, to bitter ($0,00087 \pm 0,00003$ %) - in 1,8 times, to sweet ($0,75 \pm 0,03$ %) - practically does not differ.

The so significant difference in size average TGS to sour, probably, is caused by decrease of need of the man living in conditions of Yakutia, in sour products. In North mens the displacement of acid-alkaline balance in the party metabolic acidosis is marked, is especial in winter time [8].

It is known, that the contents of ions sodium in blood at the persons living in North, in 1,4 times is lower in comparison with the one who lives in a moderate climate [5]. In turn, the size TGS of North native salty stimulus confirms lower need in sodium chloridum.

Lower TGS to bitter can be explained by the character, established during evolution, of a feed of the peoples of North, in particular, of Yakuts. In a diet North native practically there were no products with bitter taste, the food of an animal origin prevailed.

Carried out one-dimensional dispersion the analysis of dependence TGS from ethnos from 95 % by probability has shown, that at the Yakuts TGS to sour makes ($0,059 \pm 0,002$) %, that 20 % is higher, than at Russian. For radical Russian, on the contrary, higher is observed (on 15 %) TGS to sweet (tab. 3). Most negative connection with ethnos was established for the Yakuts in relation to an acid citric ($r = -0,34$; $p = 0,000$), and also to glucose ($r = -0,22$; $p = 0,002$). Correlation connection between ethnos and average TGS to sodium chloridum ($r = -0,01$; $p = 0,903$) and quinine ($r = -0,07$; $p = 0,325$) was revealed not.

Probably, in a basis of the given distinctions of gustatory sensations the features of a feed and exchange of substances various ethnos lay. The Yakuts used in food proteins and fatty food, thus the share carbohydrates and flour food in a diet was insignificant. The reduced need at the radical peoples in sweet is explained evolution usual by a lipoproteins type of a feed more economically favourable for human organism, living in extreme conditions.

The conclusion.

The set marked climatic and ecological characteristics of Republic Sakha shows the critical requirements for existence of the man, that, certainly, results in a pressure of mechanisms of regulation of all systems human organism and first of all cardiovascular and respiratory systems. At research of gustatory sensitivity of the man the ethnic dependence of gustatory sensations is established.

Thus, the results of eco-physiological researches testify to necessity of the complex approach at an estimation of a condition of health and level of functional reserves in various regions of Republic Sakha (Yakutia).

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Influence of the element status on weight of a body of Extreme North residents

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The resume: Results of one-stage researches of unorganized of Yamal residents at the age of 20-59 years are presented. Influence of chemical elements on an index of weight of a body in the conditions of high widths is presented. The chemical elements influencing formation of superfluous weight of a body and adiposity are defined.

Keywords: chemical elements, unorganized population, the Extreme North, index of weight of a body.

Introduction. Adiposity is a superfluous adjournment of fat in an organism, meets at 20-40 % of the population of the developed countries. Along with it there is almost same group of persons, having excess weight, but yet not reached degree of adiposity [14,15].

This problem is actual for the Extreme North residents. In the conditions of high a latitude etiological factors of development of infringement of a metabolism can become both exogenous and endogenous to feature. To exogenous to factors of superfluous weight of a body and adiposity at of Yamal residents, probably, residing in biogeochemical is province. The high maintenance in iron water (23 maximum concentration limits) and manganese (6 MCL) [2,5] depends on the nature. Besides it, the element structure of environment in district changes at the expense of technogenic influence of the oil and gas industry. For oil presence at it of such metals as vanadium and nickel is typical. All components of oil can contain on the surface of the water. There is a probability of their receipt in fresh underground waters [7].