

## **Changeability dynamics of basic anthropometric indexes of newborn children from regions with different ecological situations**

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We have carried out the research on revealing of changeability of main morph - functional indexes of newborn children in dependence on ecological situation in regions of their mothers living from 1973 to 2004. Statistical analysis of morph - functional indexes of newborn children by individual traits in dependence on ecological situation in regions of their birth and their mothers living has shown that body dimensions of newborn boys from regions with critical ecological situations (ESC) have no accident greater mean values as compared with newborn boys from regions with satisfactory ecological situations (ESS). Their body mass is greater by 90 grams ( $p<0,001$ ), head circumference - by 0,33 centimeter ( $p<0,001$ ), chest circumference - by 0,46 centimeter ( $p<0,001$ ). These children give in insignificantly to newborn boys from regions with tense ecological situation (EST) in erythrocytes level. Other traits have not given any essential differences. The results of dispersion analyses of some morph - functional traits of newborn girls in dependence on ecological situation testify to no accident character of differences in indexes of circumferences of head and chest, and in level of Apgar trait. So, average levels of head circumference of newborn girls from ESC regions are greater by 0,25 centimeter as compared with newborn girls from EST regions ( $p<0,01$ ). These children have greater average levels of chest circumference as compared with children from EST and ESS regions by 0,26 centimeter accordingly ( $p=0,001$ ). Average level of their functional condition on Apgar scale is lower (by 0,25 points) as compared with children from ESS regions, but this index doesn't deviate from the framework of normal value ( $p<0,01$ ). Degree of multidimensional differences of children's groups from regions with various ecological situations by complexes of traits has been measured with the help of distances of Mahalanobis with calculation for them value of F-criterion. The results of investigations have shown that during the period from 1973 to 2004 the dynamics of intergroup changeability of basic anthropometric indexes of newborn children is characterized by insignificant increase of their mean values in regions with critical ecological situation in an interval from 1973 to 1985. By the end of XX century mean values of these characteristics of newborn children from regions with various ecological situations have become smooth. This fact can be explained by reduction of anthropogenic loading in a period from 1985 to 2000 in connection with common economic fall of production.

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## **The morphology of immune competent organs in neonatal productive animals**

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The birth of animals with low viability occur in contemporary conditions that is conformed by their diseases with frequent lethal result, on their first days of life. The prenatal underdevelopment, owing to breach placental barrier, is the basic cause of lowering of the natural resistance in neonatal animals (Vodel 1977; Хрусталева 1995; Левченко, Надточій 1998; Грабчак 2000; Даньків 2002). The aim of our researches is to determine the morphology peculiarities of immune competent organs in neonatal calves and piglets. We had investigated immune competent structures (the organs of universal hemo-and-immunopoiesis and also lymphocytopoiesis) in one day old calves ( $n=15$ ) and piglets ( $n=15$ ), using the complex of methods: anatomical preparation, X-ray method, microscopy of hystological preparations and statistic. The result of our research is following. The immune competent organs were determined on the anatomical level in neonatal animals. Diaphysal and epiphysal hearths of ossification were exposed into the organs of universal hemo-and-immunopoiesis (bone organs) by X-ray method in both