

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ  
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ**



**МАТЕРІАЛИ**

**106-ї підсумкової науково-практичної конференції  
з міжнародною участю  
професорсько-викладацького колективу  
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Матеріали підсумкової 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) – Чернівці: Медуніверситет, 2025. – 450 с. іл.

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and nasal septum are being formed. In the early prenatal period, the connection of the central processes of the olfactory nerves with the olfactory bulbs, the establishment of a connection between extra- and intra-organ vessels, which serves as a significant impetus for intensive growth and differentiation of the walls of the nose, takes place.

**Garvasiuk O.V.**

## **THE STUDY OF TROPHOBLAST SURFACE ALTERATION**

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**Introduction.** Based on global research findings, it has been observed that certain disorders in the maturation of the placenta, particularly the chorionic tree, are associated with damage to the surface of the trophoblast. Our study hypothesizes that such trophoblast alteration develops through a mechanism of free radical damage.

**The aim of the study.** To determine the Pearson correlation coefficient between the R/B ratio in the trophoblast of chorionic villi and placental lactogen, as well as placental alkaline phosphatase; and between free amino groups in proteins within the trophoblast of chorionic villi and placental lactogen, as well as placental alkaline phosphatase.

**Material and methods.** The study employed computerised microspectrophotometry of histological samples stained with bromphenol blue using the Mikel Calvo method. This technique allows for the detection of various types of structural alteration associated with increased free radical activity in placental tissue. The quantitative indicator used was the spectrometric measure – R/B ratio.

**Results.** The Pearson correlation coefficient between the R/B ratio in the trophoblast of chorionic villi and the optical density of immunohistochemical staining for placental lactogen was -0.844, while the coefficient between the R/B ratio in the trophoblast of chorionic villi and the optical density of immunohistochemical staining for placental alkaline phosphatase was -0.781. These correlation coefficients indicate a strong negative relationship between the production of placental lactogen and placental alkaline phosphatase and the intensity of free radical oxidation processes in proteins.

Regarding the processes of limited proteolysis, the Pearson correlation coefficient between the optical density of histochemical staining for free amino groups in proteins within the trophoblast of chorionic villi and the optical density of immunohistochemical staining for placental lactogen was -0.806. The coefficient between the optical density of histochemical staining for free amino groups in proteins within the trophoblast of chorionic villi and the optical density of immunohistochemical staining for placental alkaline phosphatase was -0.744. Conversely, the correlation between the R/B ratio in the trophoblast of chorionic villi and the optical density of histochemical staining for free amino groups in proteins within the trophoblast was +0.912, indicating a high positive correlation.

**Conclusions.** The results of the study concerning oxidative modification of proteins, limited proteolysis, and the production of specific pregnancy-related proteins (placental lactogen, placental alkaline phosphatase) suggest that these processes are interconnected. Thus, the alteration of the trophoblast observed in disorders of chorionic tree maturation is likely driven by a mechanism of free radical damage.

**Karatieieva S.Yu.**

## **MORPHOLOGICAL CHARACTERISTICS OF THE THIGH PARAMETERS OF BUKOVYNA STUDENTS**

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**Introduction.** It is known that the factor that determines success in sports is the morphological features of the structure of the human body.

**The aim of the study** is to establish the anatomical characteristics of thigh parameters of students of Bukovyna who play football and handball, followed by modeling for sports selection.

**Material and methods.** Students of higher educational institutions of Bukovyna (n=129), of which young boys - n=69 and young girls - n=60. The subjects were divided into a main group - 89 students who improved by playing football and handball and a control group - 40 students who did not do the sports. Students of the main group, in addition to the physical activity that was included in the program of their specialty during the year, attended sports sections in football and handball during the year. Medium-intensity training took place under the control of a trainer, the frequency of training was  $3.43 \pm 1.26$  days/week (90 minutes each). Students of the control group did not do the sports. The initial survey was conducted in 2021 year, and the same students were resurveyed in 2022 year. All subjects were subjected to an anthropometric study, according to the method of P.P. Shaparenka (thigh circumference in the upper third, in the middle third and in the lower third, body weight, height).

**Results.** It was found that when comparing the first and second measurement, the thigh circumference indicators at the second measurement (in dynamics after one year) were slightly higher in students who played football (young boys and young girls) in the upper, middle and lower thirds than in students who played handball (for students who played football  $\pm 3.43$  cm, for students who played handball  $\pm 2.12$  cm). The model for predicting the circumference of the thigh in the upper third on the right:  $C_{pr} = \beta_1 + \beta_2 + 0.493w - 0.135h$ , where  $C_{pr}$  is the circumference of the thigh in the upper third (right),  $w$  is body weight,  $h$  is height,  $\beta_1 = (49.735$  for girls and  $44.489$  for young men),  $\beta_2 = (-1.391$  for the soccer group;  $-2.321$  for the handball group), on the left:  $C_{pl} = \beta_1 + \beta_2 + 0.465w$ , where  $C_{pl}$  is the circumference of the thigh in the upper third (left),  $w$  is body weight,  $\beta_1 = (25.736$  for girls and  $20.147$  for boys),  $\beta_2 = (-1.333$  for the football group;  $-0.515$  for the handball group).

The model for predicting the circumference of the thigh in the middle of the right:  $C_{mr} = \beta_1 + \beta_2 + 0.460w - 0.183h$ , where  $C_{mr}$  is the circumference of the thigh in the middle of the right,  $w$  is body weight,  $H$  is height;  $\beta_1 = (52.567$  for young girls and  $48.930$  for young boys),  $\beta_2 = (-2.235$  for the football group;  $-1.968$  for the handball group); on the left:  $C_{ml} = \beta_1 + \beta_2 + 0.449w$ , where  $C_{ml}$  is the thigh circumference in the middle of the left,  $w$  is body weight;  $\beta_1 = (20.716$  for young girls and  $20.943$  for young boys),  $\beta_2 = (-0.254$  for the football group;  $-1.405$  for the handball group). The model for predicting the circumference of the thigh in the lower third of the right:  $C_{dr} = \beta_1 + \beta_2 + 0.418w$ , where  $C_{dr}$  is the circumference of the thigh in the lower third of the right,  $w$  is body weight,  $\beta_1 = (25.560$  for young girls and  $20.165$  for young boys),  $\beta_2 = (-0.039$  for the football group;  $0.061$  for the handball group); on the left:  $C_{dl} = \beta_1 + \beta_2 + 0.387w$ , where  $C_{dl}$  is the thigh circumference in the lower third on the left,  $w$  is body weight;  $\beta_1 = (24.638$  for young girls and  $18.523$  for young boys),  $\beta_2 = (-0.379$  for the football group;  $-0.261$  for the handball group).

**Conclusions.** So, it is established that for significant predictors for predicting thigh circumference on the right in the upper and middle third are gender, sport, height and body weight, in the lower third are gender, sport and body weight, on the left are gender, sport and body weight.

**Kavun M.P.**

## **LIVER TOPOGRAPHY IN HUMAN EMBRYOS**

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**Introduction.** The study of the development and formation of the liver topography is necessary both to establish the general patterns of liver histogenesis and to identify the processes leading to the occurrence of congenital malformations of the organ.

**The aim of the study.** The purpose of the work is to establish the peculiarities of the structure and morphogenesis of the liver in the intrauterine period of development, in particular, in human embryos.

**Material and methods.** The study of the peculiarities of the liver development in the embryonic period of human ontogenesis was carried out on 20 histological preparations of human