

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



## **МАТЕРІАЛИ**

**105-ї підсумкової науково-практичної конференції  
з міжнародною участю  
професорсько-викладацького персоналу  
БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ  
присвяченої 80-річчю БДМУ  
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Матеріали підсумкової 105-ї науково-практичної конференції з міжнародною участю професорсько-викладацького персоналу Буковинського державного медичного університету, присвяченої 80-річчю БДМУ (м. Чернівці, 05, 07, 12 лютого 2024 р.) – Чернівці: Медуніверситет, 2024. – 477 с. іл.

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У збірнику представлені матеріали 105-ї підсумкової науково-практичної конференції з міжнародною участю професорсько-викладацького персоналу Буковинського державного медичного університету, присвяченої 80-річчю БДМУ (м. Чернівці, 05, 07, 12 лютого 2024 р.) із стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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**Conclusions.** Football players have a lower body weight ( $\pm 2.54$  kg), in contrast to the studied control group, taking into account the fact that the height in both groups is almost the same. It was established that the upper limbs of football players are longer on the right by  $\pm 2.22$  cm, on the left by  $\pm 2.42$  cm, than the upper limbs of representatives of the control group. The right lower limbs are longer by  $\pm 4.5$  cm, the left by  $\pm 4.35$  cm. The circumference of the thigh in the upper third of football players on the right prevails by  $\pm 2.22$  cm, on the left by  $\pm 5.00$  cm; the thigh circumference in the middle on the right is greater by  $\pm 4.56$  cm, on the left there is almost no difference; the thigh circumference in the lower third is greater on the right by  $\pm 1.12$  cm, on the left by  $1.6$  cm.

**Kavun M.P.**

## **STRUCTURE OF THE LIVER IN HUMAN EMBRYOS**

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**Introduction.** The study of the development and formation of the topography of the liver is necessary both to establish the general patterns of liver histogenesis and to identify the processes that lead 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 development of the liver in the embryonic period of human ontogenesis was carried out on 20 histological preparations of human embryos (embryos 4.0-13.0 mm long) by the methods of histological examination, production of graphic reconstructions and morphometry.

**Results.** It has been established that in the fourth week of embryonic development (embryos 4.0-6.0 mm long), the beginning of the liver is already well formed. It is represented by a conglomerate of epithelial cords that grow into a transverse septum that surrounds the duodenum and the transverse bay on three sides. In the above-mentioned conglomerate, two parts can already be well separated: the cranial part, the liver beginning, and the caudal part, the gallbladder beginning. At this stage of development, the liver is supplied with blood by two venous systems: umbilical veins (right and left), as well as yolk-mesenteric veins, which pass from the yolk sac to the body of the embryo. In embryos 5.0 mm long, the number of epithelial cords that form the beginning of the liver increases markedly, and the size of the liver during this period reaches: cranio-caudal -  $420 \mu\text{m}$ , dorso-ventral -  $320 \mu\text{m}$ , and transverse -  $280 \mu\text{m}$ . In the fifth week of intrauterine development (embryos 7.0-8.0 mm long), the beginning of the liver significantly increases in size. It occupies the cranio-ventral part of the abdominal cavity, its transverse size in an embryo 7.5 mm long is  $1.4$  mm. The right lobe of the liver is much larger than the left and reaches the back wall of the abdominal cavity, but is not fixed to it. The liver surrounds the beginning of the stomach on three sides. In embryos 9.0 mm long (the beginning of the sixth week of intrauterine development), the liver, which is intensively increasing in volume, occupies not only the cranio-ventral, but also the middle part of the abdominal cavity. The transverse size of the liver is  $2.0$  mm. At the end of the embryonic period (embryos 11.0–13.0 mm long), the liver continues to increase in size. Its cross-sectional size in an embryo 13.5 mm long is  $2.3$  mm. The liver occupies the cranio-ventral and middle parts of the abdominal cavity of the embryo. The right part continues to grow ahead of the left part of the organ. At this stage of development, the spleen is already fully formed. In addition, the embryos of this age group are forming the cecum, the ascending, transverse and descending parts of the colon.

**Conclusions.** So, on the basis of the conducted set of morphological research methods, it was established that during the embryonic period of human intrauterine development, the liver is laid down and its intensive development takes place. It was not possible to determine certain regularity in the growth of the liver parenchyma, as well as in the formation of lobules. The

structure of the liver is created as a result of the complex correlative relationships of vessels, mesenchyme, and cell bundles of beams.

**Komar T.V.**

## **STRUCTURAL ORGANIZATION OF SUBCUTANEOUS ADIPOSE TISSUE OF THE SHIN IN HUMAN FETUSES**

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**Introduction.** Every year, the prevalence of metabolic disorders among the population of different ages is increasing. A few decades ago, obesity was a disease of adults, but today, society is facing the problem of the metabolic disorders frequency increasing in children. That is why the interest of researchers in the peculiarities of the formation of adipose tissue has increased. Recent studies have proved the existence of three types of fat cells in humans: white, beige and brown adipocytes.

**The aim of the study.** The aim of the study is to investigate the adipose tissue formation features of the shin in human fetuses of 5-6 months.

**Material and methods.** A microscopic examination of preparations of the upper, middle, and lower thirds of the lower leg of 12 human fetuses with a parietal-coccygeal length (PCL) of 136.0-230.0 mm was carried out. Staining of histological sections with hematoxylin and eosin was used. A histochemical study of the protein with bromophenol blue according to Mikel Calvo' method was used for a better contrast of the protein elements of the structures. The percentage of multilocular cells was calculated on digital copies of optical images in the environment of the computer program ImageJ 1.53t (2022) with subsequent statistical processing of quantitative data using the open software "PAST" (Paleontological statistics, version 4.9 2022).

**Results.** During the microscopic examination of the structures of the shin in human fetuses of 5-6 months, structure features and adipose tissue location were revealed. In 5-month-old human fetuses, the adipose tissue of the upper third of the shin is represented by single cells, which are mainly localized around blood vessels and nerves. It is interesting that in fetuses of this age, the majority of adipocytes was found at the level of the lower third of shin, which formed flat plaque-like clusters of single and multilocular cells, and in most cases they were localized near blood vessels. Such adipocytes clusters are clearly separated from neighboring structures by the loose connective tissue. The percentage of multilocular adipocytes is  $85.3 \pm 0.92\%$  (confidence interval 70.8-94.4% at  $p=0.05$ ). In 6-month-old fetuses, the subcutaneous tissue of the shin has the appearance of elongated flat plaque-like clusters located in one row. The adipose tissue is well vascularized and clearly separated from neighboring structures. Multilocular adipocytes prevail quantitatively,  $93 \pm 0.12\%$  (confidence interval 88.7-96.0%,  $p=0.05$ ).

**Conclusions.** Subcutaneous adipose tissue in human fetuses of 5-6 months is heterogeneous and is represented by single and multilocular cells. During the fetal stage, the number and proportion of fat cells types changes. In 5-month-old human fetuses, adipocytes are located singly, with a predominance in the lower third of the shin; in 6-month-old fetuses, they already form elongated clusters.

**Lavriv L.P.**

## **ANATOMY OF THE PAROTID GLAND**

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**Introduction.** Formation of the organs is a very complicated process which is not definitively studied nowadays. It is very important to study the structure of the organs and systems in association with the basic processes of morphogenesis on the basis of the findings of embryogenesis. The study of the development and forming of the topography of the parotid gland during the prenatal period human ontogenesis is of great importance for integral understanding of the structural – functional organization of the salivary apparatus and the oral cavity on the whole.