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RECENT ISSUES IN THE PREVENTION AND TREATMENT OF SCHISTOSOMIASIS

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Schistosomiasis (Bilharziasis) is caused by blood flukes *Schistosoma haematobium*, *S. japonicum* and *S. mansoni*. Annually schistosomiasis affects almost 240 million people worldwide, and more than 700 million people live in endemic regions, it is third most devastating tropical disease in the world. Symptoms like fever, cough, abdominal pain, diarrhea, hepatosplenomegaly and eosinophilia are observed in patients with schistosomiasis. Due to such medical importance of the disease and its affects, the goal of our review was to make cases report and describe the most effective methods of its prevention and treatment.

Schistosomiasis is prevalent in tropical and subtropical areas, especially in poor communities without access to safe drinking water and adequate sanitation. More than 140 million people, 90% of who live in Africa, are infected with schistosomiasis. An estimated 700 million people are at risk of infection in 76 countries where the disease is considered endemic, as their agricultural work and daily activities expose them to infested water. Globally, 200.000 deaths are attributed to schistosomiasis annually. More than 85% of the world's cases of schistosomiasis are in Africa. Preventive measures like avoid bathing in water reservoirs in endemic regions, destruction of intermediate hosts mollusks are the most effective. Diagnostic methods include microscopic identification of eggs and antibody detection is also helpful for the patients who travel to endemic regions. For the treatment praziquantel and oxamniquine drugs are mostly used.

Thus, schistosomiasis can be eliminated through sanitary education of people, protection of water contamination and treatment of infected patients as there is no vaccine against schistosomiasis yet.

BAMBULIAK A.V.

EFFICIENCY OF BONE AUGMENTATION MATERIALS DURING DENTAL SURGERIES IN PATIENTS OF RESEARCH GROUPS

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For modern surgical dentistry and maxillofacial surgery, the urgent and at the same time difficult task is the restoration and search for optimal bone augmentation materials to fill bone defects and restore lost tissue. In recent years, there has been an active search for implant material that would match the autologous bone in its properties and characteristics. Tissue engineering technologies make it possible to

create tissue equivalents of bone tissue using autogenous stromal cells deposited on a biocompatible synthetic or biological material of tissue engineering design. Multipotent mesenchymal stromal cells (MMSCs) are optimal for use in dental practice because they have the ability to differentiate into osteogenic stem cells and significant proliferation, which in turn allows to obtain a sufficient number of cells for transplantation. The main source of MMSC is adipose tissue (AT), which has undergone osteogenic induction and promotes the activation of damaged bone regeneration.

The aim of the study was to analyze the effectiveness of bone augmentation materials in patients of the study groups during dental surgeries. Object and methods of research. 280 people aged 18 to 55 were examined in the Department of Surgical Dentistry and Maxillofacial Surgery of the Chernivtsi Regional Clinical Hospital. Depending on the diagnosis and type of surgery, patients were divided into 4 groups. Sinus lifting surgery was performed in 67 patients. At the same time, in 44.78% of people the surgery was performed using the medication “Collapan-L” (subgroup 1A); in 55.22% of individuals, surgery was accompanied by the use of the combination of MMSC-AT + “Collapan-L” + platelet-rich plasma (PRP) (subgroup 1B). Tooth extraction surgery (group 2) was performed on 85 people. At the same time, augmentation of alveolar socket with the use of “Collapan-L” – in 28.57% of people (subgroup 2A); combinations MMSC-AT + “Collapan-L” + PRP – in 46.43% of patients (subgroup 2B); wound healing under a blood clot – in 25.0% of patients (subgroup 2B). Osteosynthesis surgery (group 3) for mandibular fractures was performed in 56 patients. In 23.22% of persons the operation was performed using “Collapan-L” (subgroup 3A); in 44.64% of patients – combinations MMSC-AT + “Collapan-L” + PRP (subgroup 3B); in 32.14% of patients – by spontaneous healing (subgroup 3B). Extraction of impacted third molars (group 4) was performed in 72 patients. In this case, the augmentation of the bone defect after surgery was performed using: “Collapan-L” – in 31.94% of patients (subgroup 4A); combinations MMSC-AT + “Collapan-L” + PRP – in 41.67% of patients (subgroup 4B); and under the blood clot – in 26.39% of patients (subgroup 4B).

It was found that in patients of subgroups B of all groups of the study, where the filling of bone defects was performed using a combination of bone augmentation material “Collapan-L” with MMSC-AT + PRP, in the postoperative period there was a decrease in clinical symptoms and better bone regeneration at the surgical site in comparison with subgroups A, where augmentation was performed with the drug “Collapan-L”, and subgroups B, where healing took place under a blood clot. The use of osteoplastic materials based on MMSC-AT during dental surgeries improves the regenerative properties of bone tissue, facilitates the postoperative period and reduces the duration of inpatient treatment of patients.

SOBKO D.I., ILASHCHUK T.O., NAVCHUK I.V.
**INDICATORS OF LIPID PROFILE IN PATIENTS
WITH ARTERIAL HYPERTENSION, OSTEOARTHRITIS
AND IN THE CASE OF THEIR COMORBIDITY**

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Hypertension (AH) and osteoarthritis (OA) are among the most common diseases in the world, which not only negatively affect the quality of life of patients, but also increase the economic costs of health care. The triggers of hypertension and OA have not been definitively studied, but their risk factors, occurrence and deterioration are known, among them the leading place is occupied by disorders of lipid metabolism. The aim is to investigate the lipid profile in patients with hypertension in combination with osteoarthritis and without concomitant pathology.

In accordance with the purpose and objectives of our dissertation research, a total of 130 people of different ages and sexes with hypertension and OA were examined. Of these, hypertension combined with OA had 60 patients. AH without concomitant OA was observed in 30 patients who made up group II. Group III included 30 people with OA without concomitant hypertension. The control group consisted of 10 healthy people. All patients voluntarily agreed to participate in the study.

The lipid profile study package included the determination of cholesterol (cholesterol) (N = up to 5.2 mmol/l) by colorimetric, enzymatic methods using esterase and cholesterol oxidase; low-density lipoprotein (LDL) (N = up to 2.59 mmol/l), high-density lipoprotein (HDL) (N = 1.04–1.55 mmol/l) by the direct method of elimination of chylomicrons. All laboratory tests were performed on an automatic biochemical analyzer Accent 200. The coefficient of atherogenicity (CA) was calculated by the following formula: $CA = (\text{cholesterol} - \text{HDL cholesterol}) / \text{HDL cholesterol}$ (N = female to 3.5; male to 3.2)

The obtained data were processed by methods of variation statistics using the program Statistica 10.

Laboratory results of the study are given in table 1.

Table 1

Indicators of lipid profile in patients of the study (M±m)

Indicator	Group I AH+OA	Group II AH	Group III OA	Control
Cholesterol, mmol/l	5.89±1.34	5.61±1.28	5.52±1.11	3.76±0.83
HDL, mmol/l	1.41±0.34	1.37±0.38	1.37±0.27	1.26±1.12
LDL, mmol/	4.32±1.36	4.13± 1.24	4.19±1.17	2.12±0.22
CA	3.32±1.38	3.35±1.22	3.14±1.18	2.0±0.67

Note: * – the difference is significant compared to the figure in almost healthy individuals ($p < 0.05$).

Table 1 show that disorders of lipid metabolism are present in all four groups. It should be noted that in patients of groups I, who have a comorbidity of hypertension and OA, these indicators are worse than in patients of groups II and III, who do not have a combination of these pathologies. This confirms our hypothesis about the mutually burdened course of hypertension and OA.

The obtained indicators of the lipid profile indicate that during the comorbidity of arterial hypertension and osteoarthritis, their mutually burdened course is observed in comparison with such indicators without a combination of these pathologies. That is why it is important to find and choose the optimal treatment regimens to facilitate the above-mentioned comorbid diseases.

SIRSALKAR SHASHANK SHIRISHRAO, KUSHNIRYK OLHA
**RECENT APPROACHES IN THE TREATMENT OF LYMPHATIC
FILARIASIS (ELEPHANTIASIS)**

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Lymphatic filariasis is classified as a Neglected Tropical Disease (NTD) of humans and one of the four main worm infections. This disease causes the obstruction of lymphatic vessels in affected regions. The lymph gets accumulated due to the obstruction in the affected area, resulting in the swelling that gives the lower limb an appearance of “elephant leg” and hence it is also known as “elephantiasis”. Due to such medical importance of the disease and its affects in the immune system as of the lymphatic vessels, the goal of our review was to make cases report and describe the most effective methods of its treatment.

Lymphatic filariasis affects over 120 million people in 72 countries throughout the tropics and sub-tropics of Asia, Africa, the Western Pacific and parts of the Caribbean and South America. In American continent, only four countries are currently known to be endemic: Haiti, the Dominican Republic, Guyana and Brazil. In 2015 about 38.5 million people were infected, about 950 million people are at risk of the disease in 54 countries. More than 7.7 billion treatments have been delivered to stop the spread of infection since 2000. Treatment includes antiparasitic drugs, such as diethylcarbamazine (DEC), mectizan, and albendazole (Albenza), using good hygiene to clean the affected areas, caring for wounds, exercising based on a doctor’s directions, surgery in extreme cases, which may include reconstructive surgery to remove affected lymphatic tissue.

Thus, lymphatic filariasis can be eliminated by stopping the spread of infection through preventive chemotherapy with safe medicine combinations repeated annually. Emotional and psychological support should be also included.

STANLEY SHANE, KUSHNIRYK OLHA
BLACK FUNGUS RESURGENCE IN INDIA

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Along with COVID-19 complications, in recent news Indian doctors report cases of black fungus in post-Covid patients. Black fungus mucormycosis in India is caused by fungal species of genus *Rhizopus*, *Mucor*, namely *Apophysomyces elegance*, *Saksenaeya erythrospora* and *Cunninghamella bertholletiae*. Therefore, the goal of our review is to find out why Covid-patients in India suffer of this infection.

India has a high percentage of diabetic population and the raging Covid cases, so mainly these two are the major risk factors for mucormycosis – more than 7,200 people in India have now been reported with this disease and 219 have lost their lives. Due to the recent reports, patients with diabetes and ketoacidosis and other forms of acidosis are usually susceptible to this infection, also patients with iron toxicity have the same outcome, as the excess Fe^{2+} causes aggressive invasion of the host cells, which utilizes the iron. Treating of patients with deferoxamine is found to convert previously unusable iron into available to the fungus to use. In immune compromised patients neutrophils count is less, caused by corticosteroids or hyperglycemia and acidosis from type II diabetes. It will facilitate the infection causing a chain of attributing factors for susceptibility to infection through inhalation of spores. An administration of steroids in treatment of Covid plus the immunosuppressant drugs and a surplus of oxygen influence on the mechanisms mentioned before and oxygen is a catalyst. It can be related to the oxygen-depended biosynthesis of ergosterol, which is a key component of the fungal cell membrane.

Thus, these facts show some insight into probable reasons of mucormycosis in Covid-patients in India and this can be a stepping stone to some countermeasures and therapies for these rare but deadly cases which have a fatality of almost 50%.

SHVETS N.V.

**ADIKOPINS WITH DESEASES SUCH AS OBESITY, ARTERIAL
HYPERTENSION AND OSTEOARTHRITIS**

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Omega-3 fatty acid supplementation has potential of restoring of natural balance of adipokines (leptin, adiponectin) and mild lipid-lowering action in obese patients with arterial hypertension, osteoarthritis and their combination, so, seems to be useful in therapeutic patterns for mentioned diseases. Exact mechanisms, dosage and longer duration of therapy may be promising subject for further investigation.

Arterial hypertension, Osteoarthritis and their coincidence, as proven, may have benefit from omega-3-polyunsaturated acids implication. Adipokines (leptin and adiponectin) levels are investigated and compared depending on body mass index in patients with mentioned pathology; dynamics of values investigated under influence of omega-3-polyunsaturated acids implication. Established, that omega-3

fatty acid supplementation has potential of restoring of natural balance of adipokines (leptin, adiponectin) and mild lipid-lowering action in obese patients with arterial hypertension, osteoarthritis and their combination, so, seems to be useful in therapeutic patterns for mentioned diseases. Exact mechanisms, dosage and longer duration of therapy may be promising subject for further investigation.

Obesity is increasing in the Western society, and obesity-linked complications are under intense scrutiny. Among these, not only metabolic disorders, such as diabetes mellitus and dyslipidemia, but also cardiovascular disorders, such as hypertension and ischemic heart diseases, have been shown to be associated with obesity. More recently, also chronic diseases in which inflammation plays a role such as osteoarthritis, rheumatoid arthritis, inflammatory bowel disease, chronic obstructive pulmonary disease, and asthma have been associated with obesity.

Diseases or pathologies that are discussed as those which may have benefit from omega-3-polyunsaturated acids implication include (but are not limited by) diabetes and metabolic syndrome, nephropathy, ischemia-reperfusion injury, cardiovascular diseases and arterial hypertension in partial, pulmonary inflammation, and chronic inflammatory disorders. With the rising epidemic of obesity, more efficacious therapeutic strategies are needed to address the complex pathophysiological events that lead to metabolic syndrome.

The adipose tissue consists of adipocytes and the stromal vascular fraction, in which a variety of immune cells can be found. Among these, macrophages and T-cells are the most abundant. Expansion of the adipose tissue is accompanied by an increased infiltration of immune cells with a pro-inflammatory phenotype. The cross-talk between the infiltrating cells and the tissue-resident adipocytes leads to secretion of adipokines, cytokines, chemokines, and lipids with a predominant pro-inflammatory character. Moreover, the levels of various adipokines and cytokines are altered in obese individuals compared to lean ones (e.g., leptin, adiponectin, IL-6). So it seems so that one of therapeutic strategies must be directed to normalization of not clinical values only but for correction of mentioned molecular interplay.

ZABRODSKA O.S., SLOBODIAN O.M., PROTSAK T.V.

ANATOMICAL FEATURES OF THE PANCREAS STRUCTURE

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In recent years, there has been a clear increase in the prevalence of pancreatic pathology in young people. The pancreas is a part of the hepatopancreatoduodenal complex and often in case of dysfunction of one of its components, the pancreas (P) is also involved in the pathological process.

The pancreas is a mixed gland, in which there are exocrine structures, make up 98% of its total mass and secrete digestive enzymes that enter the duodenal lumen

through the excretory ducts, and endocrine, consisting of several groups of cells that form islets of Langerhans, producing a number of hormones.

On the anterior abdominal wall, the pancreas is projected in the middle of the distance between the xiphoid process of the sternum and the navel. Its longitudinal axis is directed obliquely from right to left and from bottom to top.

The head of the pancreas is defined to the right of the midline at the inner part of the Shoffard triangle. Its sides are: the right costal arch, the midline and the horizontal line passing through the navel. The body and tail are placed to the left of the midline. The head of the pancreas is projected along the bisector of the angle between the median and horizontal lines.

The head is at level I - III of the lumbar vertebrae. On three sides it is surrounded by a duodenum. The upper border is pars superior duodeni, outside - pars descendens, below - pars horizontalis (inferior).

The connected apparatus of the pancreas is represented by: the gastro-pancreatic ligament (lig. Gastropancreaticum), the portal-pancreas ligament (lig. Pyloricopancreaticum), the pancreas-splenic ligament (lig. Pancreaticosplenicum).

Violations in the system of its blood supply is one of the main causes of partial atrophy of the organ parenchyma. Due to the development of atherosclerosis of the vessels feeding the gland, sclerotic, atrophic, dystrophic processes and lipomatosis deteriorate, the release of amylase, lipase decreases, the activity of glycolysis and pentose shunt enzymes is suppressed, and hyperglycemia develops.

According to the sources of blood supply in P, three regions are distinguished: hepatic, splenic and superior mesenteric. But the allocation of vascular regions does not allow developing the limits of budgetary, anatomical resections of P, due to the presence of significant areas of vascular layers

So, the variability of the number of vessels of an organ is due to the variant features of the development of the gland. Features of the blood supply to the pancreas with the inclusion of its sequential spatio-temporal transformations require further anatomical research.

ZABRODSKA O.S., SLOBODIAN O.M., PROTSAK T.V.
**ANATOMICAL AND FUNCTIONAL CHANGES IN THE STRUCTURE
OF THE LIVER IN ACCORDANCE WITH ONTOGENETIC
FEATURES**

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The biological basis of involutive processes consists, first of all, in a significant decrease in the energy potential of cellular structures, in disruption of

lipid peroxidation processes with the accumulation of excess free oxygen radicals in cells and intercellular space, in a decrease in the number of mitochondria and a decrease in their oxidative ability due to weakening tissue respiration. The liver is a biochemical laboratory of the body. Macroscopically distinguish: two surfaces (diaphragm and visceral), edges (lower and back), two parts (left and right). Connections of the diaphragmatic surface: crescent (lig. falciforme hepatis), coronary (lig. coronarium hepatis), triangular left and right (lig. triangularia sinistrum et dextrum) connections of the internal surface: round (lig. teres hepatis), venous (lig. venosum). The ligamentous apparatus of the liver is represented by the hepato-renal ligament (lig. hepatorenale), the hepato-gastric (lig. hepatogastricum), hepato-duodenal (lig. hepatoduodenale) ligament. Features of the blood vessels of the liver are that, in addition to arterial blood, it receives venous blood. Through the gateway, the liver's substance enters the liver's own artery and the portal hepatic vein, which carries blood from the unpaired organs of the abdominal cavity, which, entering the liver's gate, branches into small branches located between the lobules - interlobular veins. The latter are accompanied by the arteries of the same name (branches of their own hepatic artery) and interlobular ducts. The hepatic veins have fixators at the confluence of the central veins. Hepatic veins in the amount of 3-4 large and several small come out of the liver on its posterior surface and flow into the inferior vena cava. The most common cause of diffuse changes in the liver parenchyma in elderly patients is excessive fatty infiltration resulting from ultrastructural disorders of the mitochondrial apparatus. So, functional mitochondrial insufficiency develops, which is the main regulator of fat in the liver.

Thus, the systematic implementation of preventive measures allows older people to maintain good health and working ability for many years, and most importantly, to prevent the occurrence of relapses of the disease. It is worth noting that liver health is the health of the whole organism. In particular, in old age, the rate of synthesis of proteins by the liver decreases by 30%, its participation in fat, carbohydrate, pigment, water-electrolyte metabolism decreases, antitoxic, vitamin synthesizing and other functions are suppressed. Environmental factors, poor nutrition, the amount of drugs used to treat concomitant age-related diseases accelerate the aging process.

LAVRIV L.P., *STOLIAR D.B., KASHPERUK-KARPIUK I.S., RAK R.O.

MORPHO-ANATOMICAL FEATURES OF THE PAROTID GLAND

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A study of the development and formation of the topography of the parotid gland during the prenatal period of human ontogenesis is of great importance for an integral understanding of the structural and functional organization of the salivary

apparatus and the oral cavity as a whole. The scientific sources report different data concerning the features of parotid gland morphogenesis and the formation of topography components of the parotid-masticatory area in human embryogenesis.

To study the morphological features of parotid gland bud in the prefetal period of prenatal human ontogenesis.

29 human prefetuses were involved in the study (14,0-79,0 mm of parietococcygeal length). The study used the methods of microscopy of serial histological sections, histochemistry, morphometry, graphic and plastic reconstruction of macro- and microphotography.

At the beginning of the prefetal period of human ontogenesis (14.0 mm PCL), the rudiment of the parotid gland is greatly increased in size and takes the form of a solid epithelial cord composed of a large number of epithelial cuboidal cells. The growth of the epithelial rudiment of the parotid gland in the prefetal period is directed to the outer ear. Changing the thickened distal part of the rudiment in prefetuses 23.0 mm PCL is a progressive step in its formation, and we define it as the beginning of the "budding" (branching) of the epithelial rudiment of the gland with subsequent formation of epithelial cords of the second order. This change occurs with the emergence of a constriction on the distal epithelial thickening, and it divides the latter into two parts which grow separately out of the common base consequently. The study of syntopy and morphogenesis of the parotid gland with surrounding structures in the prefetal period of prenatal ontogenesis emphasized the importance of the effect of mesenchymal-epithelial cell interactions and relationships on the overall process of their formation. During the prefetal period mesenchyme of the mouth and its derivatives developed unevenly. In general, the investigated structures are characterized by a classical sequence chart of mesenchymal differentiation: mesenchymal cells get condensed (aggregated), then the argyrophilic fibers appear, and after them - the collagen fibers. The parotid bud undergoes a series of consecutive changes during the prefetal period: formation of numerous epithelial cords of the 2nd, 3rd and 4th order (branches from the main bud); formation of a cavity (lumen) in the main bud and its offshoots of the II-IV orders; formation of mesenchymal part of the parotid gland with its clear demarcation from surrounding tissue. Mechanisms of the complexity of carbohydrate metabolism are similar for all examined organs: the biosynthesis of glycogen, which is energy and plastic material, with increasing age of the fetus increases and then is replaced by the biosynthesis of more complex compounds. The ability of mesenchymal cells of the maxillary processes, of the tongue and parotid gland to complicate the biosynthetic processes and actively secrete components of the basic substance of connective tissue - glycosaminoglycans - marks its transformation into young fibroblasts and the beginning of the embryonic connective tissue formation.

The time of the branching of the primordial of the gland and the forming of the lumen excretory duct has been established. Close interrelations between the mesenchymal and epithelial components of the primordial organs and their role in the processes of form-building have been detected. The obtained and systematized results of the study can be used in the laboratories for screening morphological material in order to estimate the degree of maturing, for predicting a body's vital capacity as well as diagnosing abnormalities in normal development with suggestions as to their correction.

KARATIEIEVA S.YU., SLOBODIAN O.M., HONCHAR H.I.

**THE VALUE OF INDICATORS THE TOTAL AND PARTIAL BODY
SIZE AT FORECASTING PROSPECTS IN SPORTS**

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The main problem in training athletes is adequate selection and sports affiliation. Solving the problems of selection involves the creation of a model of the athlete of this sport, a certain set of characteristics that determine athletic performance.

This requires anthropometric assessment, morphometric and biometric data to track physical and physiological parameters, information to assess performance and recovery in sports, modification of training regimes to prevent injuries, provide guidance on regulating the use of technologies that used in professional sports, as well as to research and make recommendations for the proper collection, storage and exchange of the health information.

So, the analysis of literature by scientists, it can be becomes clear that highly productive athletes are extraordinary people who experience high physical and psychological stress during their professional lives.

However, to now prognostic value and dominance of indicators of total and partial body size, morphometric and somatotypological characteristics in predicting the prospects for achieving high results in sports have not been established.

Also, we can conclude that modern professional sports requires loads that are close to the maximum, and sometimes are such or exceed them, it is the establishment of these maximum allowable loads and the study of patterns of their development is a very promising area.

This will allow timely selection of athletes for a particular sport, to carry out preventive and curative measures to improve their structural and functional condition.

KARATIEIEVA S.YU., SLOBODIAN O.M., HOI R.S.

COMPARISON OF THE OBJECTIVITY AND EFFICIENCY OF MORPHOMETRIC DATA IN SPORTS

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One of the important problems of modern morphology is the study of changes that occur at the body that to influence of various factors. This problem has become especially important in connection with the development of the sports.

The high sports performance, associated with a significant load on the athlete's body, encourages scientists, doctors, coaches to search for physiological reserves of the body and search for optimal training regimes. From this point of view, the study of changes that occur in individual organs, systems and in the body as a whole, under the influence of physical activity of varying intensity and nature is relevant and of great practical importance.

This studies have shown changes in basic physiological and biochemical parameters in athletes, such as adaptation of the muscular, cardiovascular, respiratory systems, the nature of muscle energy supply, tissue metabolism. There are also scientific papers that reflect the structural changes that occur in the body under the influence of exercise.

The level of results in modern sports is so great that to achieve them, athletes need to have the appropriate morphological and functional data, as well as excellent physical and mental abilities.

Therefore, the main problem in training athletes is adequate selection and sports oriented. Solving the problems of selection involves the creation of the model of athlete by this specialization, is a certain set of characteristics that determine athletic performance. In sports selection, such morphological features as total body size, body proportions, body weight composition are taken into account. The set of features and the order of their enumeration differs for the different sports.

SAPUNKOV O.D., KOSAKOVSKYI A.L., SAPUNKOVA S.S.

THE TASK OF PEDIATRIC OTOLARINGOLOGISTS IN TREATMENT OF RECURRENT RESPIRATORY DISEASES

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Respiratory tract infections are one of the most common reasons for doctor visits and hospitalizations in children. Pediatric otolaryngologists often face the symptoms of respiratory tract infections as they are one of the main otolaryngological complaints - difficulty in nasal breathing and coughing.

Upper respiratory tract infections are common in children. Their relapses are a serious problem for pediatric otolaryngologists and pediatricians. Children with recurrent respiratory infections present a difficult diagnostic challenge. The problem is that it is necessary to distinguish children with a common cause of symptoms, such as recurrent viral infections, from children with more serious pathology, such

as bronchiectasis or immune dysfunction. Indeed, in this way, many different diseases are manifested, including cystic fibrosis, various immunodeficiency syndromes and congenital anomalies of the respiratory tract. It is known from epidemiological studies that ENT infections are the most common pathology in children aged 6 months to 6 years. Their main cause is viral agents.

It follows that the task of pediatric otolaryngologists is to distinguish normal children with a high frequency of respiratory infections associated with increased exposure to environmental risk factors from children affected by other pathological conditions (immunological or not) that predispose to infectious respiratory diseases. After all, the role of doctors has now expanded from simple treatment of diseases to the implementation of measures to maintain health and prevent diseases.

SAPUNKOV O.D., KOSAKOVSKYI A.L., SAPUNKOVA S.S.
**FEATURES OF RECURRENT RESPIRATORY DISEASES IN
CHILDREN'S OTOLARYNGOLOGY**

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Respiratory infections of the upper respiratory tract in children are one of the main reasons for doctor visits and hospitalizations. They often recur and this is a serious problem for pediatric otolaryngologists and pediatricians. In clinical practice, the majority of children (70-90%) suffer from recurrent upper respiratory tract infections (RURTI). They have their own characteristics.

In an isolated course, RURTI cannot indicate the underlying disease. Their clinical picture (features, severity and duration) is the same as in children with a "normal" frequency of respiratory infections. Typically, these children do not have recurrent infections of other systems (gastrointestinal tract, central nervous system, urinary tract, or skin).

It is important to recognize a child with an underlying primary immunodeficiency, and to evaluate and treat, rather than over-examining, normal children. RURTI is a common problem in preschool age due to unfavorable environmental conditions, early socialization, as well as the immaturity and inexperience of the immune system. If there is a history of chronic or recurrent pneumonia with or without chronic sputum production, this indicates a more serious pathology. Initially, RURTI occurs as a viral infection of the respiratory tract, but bacterial growth occurs in 60% of patients with symptoms of an upper respiratory tract infection lasting at least 10 days. Children with long-term or recurrent respiratory illness are more likely to have a series of infections rather than a chronic infection with a single strain of the virus. With a positive history of immunodeficiency, a detailed immunological examination is necessary. In other children, immunologic testing should be done after ruling out other more common causes of RURTI, such as gastroesophageal reflux, allergies, or focal ENT infection (adenoid hypertrophy).

Treatment and prevention of these infections should consist of early, targeted antibiotic therapy of acute infection, prolonged and appropriate recovery, elimination of all possible foci and sources of infection, and a complete study of the child's immune status. The correct appointment and use of each means of immunomodulation should be carried out only in the indicated cases with an individual approach to each child, taking into account all the rules of immunomodulatory therapy.

TOVKACH YU.V.

INNOVATIVE TECHNOLOGIES IN TRAINING

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Innovative learning is a process organized for the future, focused on training professionals to work in new conditions. The word "innovation", which translated from English "innovation" means innovation, comes from the Latin "innovation" - "renewal", "update", "change". In the educational context, "innovation" means the creation of new approaches and technologies based on the rethinking of previous experience and the introduction of new achievements and their integrated use.

Some researchers attribute innovative technologies to personality-oriented learning technologies, which involve interactive learning, in the process of which learners become active participants in the learning process. According to UNESCO, learning technology is a systematic method of creating, applying and defining the process of teaching and learning, taking into account technical and human resources, as well as their interaction, which aims to optimize forms of education. This can be an important reason for improving the educational material base of an educational institution that trains future physical education teachers. In such a situation, the process of academic and professional training acquires diversity and a focused approach to learning, and in the educational process contributes to the individualization and differentiation of practical and theoretical training.

According to the results of scientific observations, the use of innovative technologies involves the inclusion in the curriculum of new teaching methods, techniques, methods, planning and organization, control, adjustment and evaluation of educational activities, which allows students to form a culture of educational work.

Therefore, in our opinion, the use of innovative technologies in the educational and pedagogical process of training physical education teachers creates new opportunities to improve learning, enhance thinking, various forms and means of learning.

SAPUNKOV O.D., KOSAKOVSKYI A.L., SAPUNKOVA S.S.
THE USE OF DECONGESTANTS AND ANTI-HISTAMINE
PREPARATIONS IN CHILDREN

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Upper respiratory tract infections are common and serious. They are rarely fatal, but they are a source of serious illness and medicine has a significant economic burden from them. The common cold, although usually a minor illness, leads to significant absenteeism and complications such as secondary bacterial infection. The common cold is caused by one of over 200 types of viruses and sometimes other infectious agents. There are numerous treatments for colds and one of them is the use of decongestants and antihistamines.

Decongestants and antihistamines, alone or in combination, are widely used in children with cold symptoms. Almost 40% of preschool children received them. Several studies of combined antihistamines / decongestants have not shown any effect on cold symptoms in the preschool age group, although their sedation may be perceived by parents as desirable for young children with colds. First generation antihistamines alone have shown beneficial effects on nasal symptoms in adult studies, but this has not been replicated in children. Nasal decongestants improve cold symptoms in adults and increase nasal patency in children, but their potential side effects, such as rebound obstruction and drying out of the nasal epithelium, mean they are not recommended in children. The use of such drugs should be questioned because they do not appear to provide protection against otitis media, side effects are common, and accidental ingestion may occur.

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ANATOMICAL FEATURES OF THE UPPER JAW INJURY

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The share of maxillofacial lesions is 21-40%, which indicates further study of this problem. While electron microscopic study in the ultrastructural organization osteoblasts were observed degenerative changes of cell membrane destruction and internal cell structures. After 14 days after injury jaw rats electron microscopic study of the ultrastructure of osteoblasts kept condensation of chromatin in the nucleus and its enlightenment matrix. The nuclear membrane had foci of destruction. Mitochondria had a clearly contoured outer membrane and cristae. The mitochondrial matrix acquired a finely granular structure. However, there are often foci of destruction of both membranes and crystals.

The cisterns of the granular endoplasmic reticulum are dilated, their contents are electronically transparent from the cell of lysis of its membranes.

The number of ribosomes bound to the membranes of the endoplasmic reticulum, as well as ribosomes and polysomes, which are freely located in the

cytoplasm of cells, is much larger than in the previous observation period. In the cytoplasm of osteoblasts there is hyperplasia of the granular endoplasmic reticulum.

Numerous ribosomes with a typical structure were localized on the membranes of the granular endoplasmic reticulum. Compared to the previous term, the number of free ribosomes and polysomes increases

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USE OF ANTIBIOTICS FOR COLD IN CHILDREN

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Upper respiratory tract infections are among those diseases that are most common in the practice of a pediatric otolaryngologist. Their clinical manifestations do not allow one to accurately predict whether an infection is viral or bacterial, although this does not significantly change the practice of prescribing drugs, especially antibiotics. Regular use of antibiotics for upper respiratory tract infections builds parental confidence in their effectiveness and increases the likelihood of future doctor visits, even for minor infections.

There is no evidence that antimicrobials change the course or outcome of the common cold, and their use is not an effective strategy for preventing complications such as lower respiratory infections. Frequent use of antibiotics is potentially harmful due to a significant increase in side effects and an increase in colonization by resistant organisms. This increases the risk that any subsequent invasive infection will not respond to standard antibiotic regimens. Moreover, it is known that the likelihood of cultivating a resistant strain of pneumococcus from the nasopharynx increases if the patient has recently received a course of antibiotics. We know that mucopurulent rhinitis often accompanies a cold and can persist for at least 2 weeks, but antibiotics do not work on it. Despite this, up to 44% of children with cold symptoms receive antimicrobial drugs. The mentality of parents who insist on using antibiotics to treat their child's cold symptoms is that they are more likely to report severe symptoms and believe in symptomatic treatment for a cold, or are confident they know how to treat a cold. In such cases, parenting education is needed to reduce the use of antibiotics in primary care.

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COLD TREATMENT OPTIONS FOR CHILDREN AND ADULTS

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There are many medical treatment options for the common cold. This indicates the controversy of their effectiveness. Research on the treatment of the common cold includes symptomatic treatment, pharmacological and antiviral agents performed for natural or experimentally induced infections. Most of these studies

were conducted in adults and were based on a subjective assessment of the severity of symptoms or objective measures that require significant cooperation from the subject. In children, for whom assessing symptoms and obtaining objective results is more problematic, this can lead to an inability to demonstrate differences in treatment.

Ascorbic acid is often used to treat and prevent colds. While there is no evidence that daily high doses of vitamin C prevent colds, people with established cold symptoms appear to experience a modest (8-9%) reduction in symptomatic days, with larger doses having greater benefit.

Zinc is also known to have antiviral properties in vitro, and zinc lozenges have been suggested to treat the common cold. But, studies in adults have shown mixed results on the effect on the duration and severity of cold symptoms, which does not allow us to confidently speak of evidence of the benefits of these drugs. A study in school-aged children showed that zinc tablets are ineffective in reducing symptoms or speeding up resolution of a common cold.

Echinacea plant extracts are widely used in parts of Europe and the United States to treat upper respiratory tract infections. Most of the studies available have been conducted in adults and report positive results in both the prevention and treatment of upper respiratory tract infections. However, there are significant differences in echinacea formulations and in the methodological quality of the trial data, which make the evidence for their efficacy inconclusive.

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COUGH IN CHILDREN

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Cough is a very common symptom in children. It occurs acutely in 83% of cases within the first 48 hours after the onset of cold symptoms and goes away on its own. It is also important that there is no evidence of the usefulness of the widespread use of over-the-counter drugs for acute cough in acute respiratory infection. Likewise, antibiotics are no more effective than placebo in treating acute cough in children. Parents of children with recurrent coughing attacks often seek medical help from pediatric otolaryngologists and pediatricians, as this symptom is alarming and negatively affects the quality of life of both the child and his parents. It should be noted that persistent wet or productive coughs require evaluation, and an isolated nonproductive cough in the absence of signs of airway obstruction or other signs of systemic disease is quite normal. However, clinicians often consider nonspecific cough as a consequence of postnasal leakage, gastroesophageal reflux and cough asthma. There is evidence to suggest that persistent cough in children is more likely to be associated with indoor or outdoor pollution than with atopy.

At the same time, if earlier cough was underestimated as a symptom of asthma, now asthma in children is increasingly diagnosed on the basis of cough in the absence of wheezing, which contributes to the observed increased prevalence of asthma. However, it should be noted that there are difficulties in diagnosing asthma based on cough alone. This is due to the low repeatability of parental reports on the frequency of coughing, especially at night, in the child and inaccuracy in comparison with objective indicators. Obviously, some children with asthma may have a cough and it can be a significant symptom of an exacerbation of asthma, but a recurring cough in the absence of wheezing differs in important aspects from asthma. Although there may be a common trigger, the mechanisms of cough and bronchospasm are different and can be suppressed separately.

It follows that when coughing, inhaled steroids should not be used for prolonged periods and such treatment should be discontinued if it does not work.

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USE OF ANTIBIOTICS FOR THROAT PAIN IN CHILDREN

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Diagnosis and optimal treatment for pharyngitis or tonsillitis are controversial. Sore throat is the most common symptom of these diseases and is the reason for absenteeism from school and loss of income for parents, as well as a high percentage of doctor visits.

The type of clinical manifestations of sore throat does not reliably predict the etiological agent. Despite the fact that a number of methods have been developed that combine clinical and epidemiological data to distinguish between bacterial and viral etiology, the results are inconsistent. Throat culture is also neither sensitive nor specific for serologically confirmed infection. Throat culture results correlate poorly with clinical symptoms, while the high incidence of asymptomatic carriage of up to 40% in the general population makes interpretation difficult.

Most children with acute sore throat require only symptomatic treatment with simple pain relief. Most of them have a viral etiology, especially in children under 3 years of age; therefore, it is not advisable to treat all acute sore throats with antibiotics. The rationale for antibiotic treatment of angina is hypothesized to be based on the premise that rapid elimination of group A β haemolytic Streptococcus is effective in preventing acute rheumatic fever and suppurative complications, and also results in faster resolution of symptoms and prevention of infection spread.

Although antibiotics have the advantage of improving symptoms in children with severe sore throat symptoms, they are not recommended for routine symptom relief in all cases of acute sore throat in children. Regular antibiotic use strengthens patients' belief in the omnipotence of antibiotics and increases re-attendance for

possible future mild and self-limiting illnesses. They are also ineffective in the case of viral etiology of diseases of the pharynx.

KAVUN M.P.

DYNAMICS OF AGE-RELATED CHANGES IN THE INTERLOBULAR VESSELS OF THE LIVER IN EMBRYOGENESIS

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The study was carried out on serial sections of the liver of human embryos, pre-fetuses and fetuses using general histological methods.

It was established that in embryos up to 8 weeks of development, the walls of the interlobular arteries and branches of the portal vein have a pronounced structural and histological similarity. They are represented by a layer of endothelial cells surrounded by a mesenchyme. Starting from 12 - 13 weeks in the thickness of the mesenchyme elastic elements appear.

Comparison of the sizes of interlobular arteries and intrahepatic branches of the portal vein of the liver indicates that starting from 8-9 weeks of fetal development; the diameters of both vessels are approximately equal and amount to 130-150 microns. The thickness of the walls of the above vessels is insignificant, as indicated by the diameter of their lumen, which is 80 - 90% of the total diameter of the arteries and veins.

Intrahepatic bile ducts were found by us in 8-week-old embryos. At this stage of intrauterine development, the common hepatic, right and left hepatic bile ducts are located in the thickness of the mesenchyme, which surrounds the branches of the portal vein.

The ratio of arterial and portal blood flow in the hepatic lobule is not the same at different stages of intrauterine development.

The ratio of arterial and venous vessels in the hepatic lobule is 1:4 in the early stages of embryos and pre-fetuses. It is 1:2 in the later stages of development and in newborns.

The increase in arterial blood flow in the hepatic lobule with age is associated with the metabolic activity of the liver, which requires higher tissue oxygenation.

KAVUN M.P.

TOPOGRAPHY OF THE ELEMENTS OF THE BILIARY AND PORTAL SYSTEMS DURING THE PRENATAL ONTOGENESIS OF HUMAN

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The development and relationships of the bile ducts and branches of the portal vein of the liver have been studied by the methods of macro- and microscopy, histotopography and corrosion in order to clarify the morphological prerequisites for the development of the different variants and possible defects of these formations.

Intrahepatic bile ducts were found by us at the beginning of the pre-fetal period (the eighth week of intrauterine development). During this period, the common hepatic, right and left hepatic bile ducts are located in the thickness of the mesenchyme, which surrounds the branches of the portal vein of the liver. As shown by the study of histological sections, the subsequent branching of the ducts is determined by the branching of the portal vein of the liver, the branches of which are surrounded by an abundant layer of connective tissue.

If in a ten-week-old pre-fetus, the periportal biliary tract is well developed, especially in the mesenchyme of the hepatic hilum; then in a three-month-old fetus, they already cover the entire organ. They branch after the branches of the liver portal vein, which is the starting point for their formation and are never found along the branches of the umbilical or hepatic veins. The development of the ducts is due to the transformation of the periportal hepatic trabeculae, the cells of which lose their glandular character and turn into epithelial elements of the ducts. The formed tubules are constantly isolated from the parenchyma by connective tissue and become the main interlobular ducts.

The fact that the bile ducts are absent along the branches of the umbilical and hepatic veins indicates that the periportal connective tissue has a formative effect on the transformation of hepatocytes into the epithelium of the bile ducts.

KAVUN M.P.

VARIANTS OF CORRELATION BETWEEN THE INTRAORGANIC BRANCHES OF THE PROPER HEPATIC ARTERY AND THE HEPATIC PORTAL VEIN

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On the corrosive preparations, the branches of the proper hepatic artery of the second order are located along the branching of the portal vein of the liver and bile ducts. Closer to the periphery of the liver parenchyma, one branch of the own hepatic artery is divided into two or three (less often) branches that accompany one of the branches of the hepatic portal vein. In the course of the study, it was also found that

on many preparations, the branches of the hepatic artery surrounded the branches of the portal vein of the liver for a significant extent.

At the same time, anastomoses were found between the arterial trunks, and even the arterial plexuses, between which the branch of the portal vein of the liver is located. As a variant, on some preparations, the arterial branches of the first and second orders accompany the branches of the portal vein of the liver for no more than 3 - 4 cm, after which they are dichotomously divided into branches of the next order.

Subsequently arterial branches repeated spiral course around venous trunks in an amount of from two to four anastomoses that are arranged in the transverse direction. Such transverse anastomosis along the branches of the portal vein of the liver are repeated every 0.5 - 1.0 cm.

From the foregoing, it can be assumed that the portal venous tone is under direct influence of arterial trunks that surrounded the branch of the portal vein of the liver in the form clamp. With the overflow of the branches of the portal hepatic vein, the last turn out to be squeezed by the branches of their own hepatic artery.

YEMELYANENKO N.R., BANUL B.U.

MORPHOLOGICAL FEATURES OF THE DEVELOPMENT OF THE NASAL SEPTUM OF THE FETUS IN THE SIXTH MONTH OF FETAL DEVELOPMENT

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When studying the fetuses of the sixth month of development (length 186.0-228.0 mm) it was found that the outer nose has a less flattened shape.

The nasal septum is represented by cartilaginous and bony structures and lined with mucous membrane. In the cartilaginous part, the boundary between the cartilage of the septum and the perpendicular plate of the ethmoid bone is not detected. The vomer does not differ in shape and structure from those of the fetuses of the previous stage of development. It only increases in size (anteroposterior - from 14.0 to 16.5 mm, and its vertical size increases from 3.3 to 3.5 mm).

The anteroposterior size of the nasal septum increases from 17.0 to 21.0 mm, the most vertical - from 11.5 to 13.0 mm. The thickness of the cartilaginous plate is 1.2-1.3 mm, and the height with the mucous membrane is 2.4-3.0 mm. The anteroposterior size of the lattice plate reaches 13.0 ± 1.0 mm, and the transverse - 3.0 ± 0.5 mm.

The mucous membrane lining the nasal cavity has a thickness of 0.2-0.25 mm, in the area of the lower nasal cavity, the free edge of the middle nasal cavity - 0.5-0.6 mm and near the anterior lower edge of the nasal septum - 0.8- 0.9 mm. The thickness of the epithelium reaches 44.0 ± 2.0 μ m.

The blood supply to the nasal mucosa was studied in fetuses on 8 objects. Anterior and posterior ethmoidal arteries with a diameter of 0.09-0.2 mm pass through the same holes in the thickness of the connective tissue of the upper wall of the nasal cavity, where they dichotomously divide into branches of the second order (Fig. 66) - lateral and medial. The first with a diameter of 0.08-0.1 mm goes down the side wall of the nasal cavity closer to its bone base. The second with a diameter of 0.06-0.08 mm goes to the nasal septum almost horizontally, while intersecting with the trunks of the olfactory nerves and then also goes in a downward direction. Each of these branches in the upper third of the side wall and nasal septum is divided into third-order branches, which anastomose with each other, forming loops that form a fairly dense arterial network.

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MORPHOLOGICAL FEATURES OF THE DEVELOPMENT OF THE NASAL SEPTUM OF THE EMBRYO IN THE FOURTH MONTH OF FETAL DEVELOPMENT

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Most of the nasal septum in the fetus of the fourth month (81.0-130.0 mm of parietal-coccygeal length) is represented by cartilaginous tissue and only the posterior part by the bone. It is covered with a mucous membrane from the side of the nasal cavity. The cartilaginous part of the nasal septum is a plate that forms its movable part, which corresponds to the perpendicular lamella of the ethmoid bone. The boundary between these formations is absent and they merge to form a continuous lamella. The bone part of the nasal septum is a vomer, consisting of two lamelles fused at the lower edge of the septum that is diverged to the top (pic. 56). Their upper edge has an arched shape. The largest vertical size of the plates increases from 2.5 mm (for fetus with length 78.0 mm) to 3.0 mm (for fetus with length 130.0 mm), of anteroposterior one - from 10.0 to 12.0 mm. The posterior edges of the plates are adjacent to the body by the sphenoid bone.

The anteroposterior size of the nasal septum increases from 7.5 to 12.5 mm, the largest vertical size - from 5.9 to 8.5 mm. The thickness of the cartilaginous plate is 0.6-0.05 mm, and with the mucous membrane - 1.2-0.5 mm. The mucous membrane lining the nasal septum is 200 ± 20.0 mcm thick and covered with a high multilayered cylindrical epithelium with cilia. In the respiratory area of the nucleus of epithelial cells form 3-4 rows, and in the olfactory - 4-6. The thickness of the epithelium, respectively, is 16 ± 2.0 and 36 ± 3.0 mcm.

The blood supply of the mucous membrane of the nose is done due to the anterior and posterior sphenoid arteries (0.072-0.082 mm in diameter), which through the same holes penetrate into the thickness of the upper wall of the nose,

where each of them is dichotomously divided into branches of the second order - lateral and medial.

The study of olfactory nerves was carried out by the method of macro microscopic examination - dissection. It was found out that olfactory nerves are represented by numerous thin nerve fibers in the one third of upper mucous membrane of the side wall and nasal septum, which are connected into 10-15 trunks with a diameter of 0.07-0.1 mm, and go to the lattice plate, penetrating into cranial cavity.

The topographic and anatomical relationship between nerves and blood vessels is following: the surface is a shallow network of vessels, nerves and vessels of medium caliber and the deepest trunks of vessels.

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MORPHOLOGICAL FEATURES OF THE DEVELOPMENT OF THE NASAL SEPTUM OF THE EMBRYO IN THE FIFTH MONTH OF FETAL DEVELOPMENT

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As a result of the study of fetal nasal preparations with a length of 140.0 to 185.0 mm (fifth month of the fetal development) it was found out that the outer nose is still quite wide. It should be noted that, starting with the fetus 160.0 mm long, there is a gradual resorption of the epithelial "plug" that closes the nasal holes, and by the end of the 5th month it is usually completely resorbed.

The nasal septum is represented by a cartilaginous lamella and a vomer. The vomer consists of two plates that are connected at the lower edge of a septum. Their vertical size increases from 3.1 to 3.3 mm, and anteroposterior size - from 12.0 to 14.0 mm. The cribriform plate still has a cartilaginous structure. Its anteroposterior size reaches 11.0 mm, and transverse - 2.6 mm.

The anteroposterior size of the nasal cavity increases from 8.0 to 13.0 mm, and the vertical *вншря* - from 9.0 to 11.0 mm.

The mucous membrane lining the nasal cavity has a thickness of 0.2-0.25 mm, its free surface is covered with a high multi-row ciliated epithelium, 28-40 μ m thick. The greatest thickness of the mucous membrane is in the area of the anterior-lower edge of the septum (0.75-0.8 mm) and the anterior edge of the lower nasal cavity (0.34-0.4 mm).

YEMELYANENKO N.R., BANUL B.U.

**BLOOD SUPPLY AND INNERVATION OF THE NASAL SEPTUM IN
THE FETUSES OF THE FIFTH AND SIXTH MONTHS OF FETAL
DEVELOPMENT**

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Arterial vessels of the walls of the nasal cavity were studied in the area with a length of 140.0 to 185.0 mm (after a month of fetal development). It is established that the diameter of the anterior and posterior lattice part of the artery decreases from 0.08 to 0.1 mm. The number of branches of the first order - 2 (lateral and middle), branches of the third in size from 5 to 8, their diameter is 0.03-0.06 mm. The wedge-palatine artery in 3 observations removes three, in 2 - four back lateral nasal branches. Their diameter varies from 0.06 to 0.08 mm.

The anterior and posterior lattices of the artery with a diameter of 0.09-0.2 mm pass through single holes in this connective tissue of the upper wall of the nasal cavity, where they dichotomously divide into branches in a different order - lateral and middle. The first diameter of 0.08-0.1 mm directly makes low through the sidewall of the nasal cavity closer to its bone base. The second diameter of 0.06-0.08 mm is straight to the nasal septum almost horizontally, while intersecting with the trunks of the olfactory nerves, and then also goes in a downward direction. Each of these branches in the upper part of the white wall and the nasal septum is divided into branches of the third side, which anastomose with each other, creating loops that form the necessary dense arterial network.

From the wedge-palatine artery originate three posterior lateral nasal branches, which go to the mucous membrane of the lateral wall. From the last almost at right angles vessels depart to an epithelial lining of nasal sinks.

When studying the corpses of fruits of the sixth month of development (length 186.0-228.0 mm) it was found that the posterior artery of the nasal septum (diameter 0.18-0.2 mm) is divided into two branches in a different order. In 5 cases, its lower branch (diameter 0.13-0.15 mm) is a continuation of the posterior artery of the nasal septum, the upper smaller diameter (0.06-0.09 mm). In three cases, both branches have the same diameter and, straight forward and downward, remove many side branches that connect, creating five different shapes and sizes. In addition, these branches are also anastomosed with branches of the anterior and posterior lattice arteries. Cleaning of thin trunks, which penetrate the thickness of the mucous membrane almost at right angles, reaches its epithelial lining, and connects, creating a dense network. The highest concentration of arterial networks is observed in the anterior part of the nasal septum, where the branches branch mainly in front of the

rest of the artery. In this area, they create anastomoses with branches of the posterior lattice and posterior arteries of the nasal septum. In the study of the olfactory nerves of the fetus of 6-month fetal development, it was found that creates olfactory fibres that separate in thin trunks for a subsequent diameter of 0.1-0.15 mm. In addition, they are not 0.5-1.0 mm to the lattice plate connecting, create the main trunks of the olfactory nerves (by other order), with a diameter of 0.15-0.3 mm, which then penetrate the cranial cavity. The number of trunks of the first for each age is 18-22, and the second - 10-15.

Topographically, as in the fetuses of 5 months, most of the superficial glands, which are more pronounced than in the previously described fetuses, and a small network of vessels, then nerves and vessels of medium calibre and the deepest are large vascular trunks.

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BLOOD SUPPLY TO THE NASAL AREA IN THE FETUS OF THE FOURTH MONTH OF FETAL DEVELOPMENT

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The blood supply to the nasal mucosa is due to the anterior and posterior lattice arteries (diameter 0.072-0.082 mm), which through the same holes penetrate into the thickness of the upper wall of the nose, where each is dichotomously divided into branches of the second-order - lateral and medial. The first with a diameter of 0.032-0.036 mm goes in a descending direction along the sidewall of the nasal cavity closer to its cartilaginous base. The second with a diameter of 0.036-0.044 mm goes to the nasal septum while intersecting with the olfactory nerves, then also goes in a downward direction. Each of these branches in the upper third of the sidewall and nasal septum is located (on the placer type) on 5-6 branches of the third order. The latter gives several lateral branches, which anastomose, form loops of different shapes and sizes. Most loops have an elongated shape ranging in size from 0.4 x 0.8 mm to 0.5 x 1.0 mm. They supply blood mainly to the upper part of the sidewall and nasal septum.

Wedge-palatine artery with a diameter of 0.08 mm enters the nasal cavity through the hole of the same name and gives 2-3 branches up to 0.06 mm in diameter to the sidewall (posterior lateral nasal branches), go forward and supply blood to the mucous membrane of the posterior side wall of the nasal cavity. These branches are located closer to their cartilaginous base. Almost at right angles to them depart branches leading to the epithelial lining. In addition, the wedge-palatal artery sends

one branch - the posterior artery of the nasal septum with a diameter of 0.06 mm, the latter is often divided dichotomously into branches of the second order. They go forward and down, giving the lateral branches that anastomose with each other and form loops.

The greatest concentration of vessels is in the anterior lower part of the nose, where branches branch mainly of the anterior lattice and posterior arteries of the nasal septum. The wall of arterial vessels (up to and including branches of the second order) consists of three membranes: inner (endothelial), middle and outer. The middle shell is formed by elongated cells with elongated nuclei, the outer-connective tissue fibres with a circular orientation. In a wall of branches of the third-order two covers are defined, and in their branches - only endothelium.

BANUL B.Y., EMELIANENKO N.R., SHAKHIN N.M.

FORMATION OF THREE CEREBRAL VESICLES IN EMBRYOS OF THE 4TH WEEK OF FETAL DEVELOPMENT

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In a 4.5 mm long PCL embryo, three convex dilatations can be observed in the main part of the nervous system - three cerebral vesicles: anterior, middle and posterior. There is no clear line between these bubbles, which is a consequence of their uneven growth rate and the presence of bends. Two curves are well defined: cervical and midbrain. The cervical is located within the transition of the hindbrain to the rudiment of the spinal cord. Both bends are open in the ventral direction. You can see the curve, which begins to form in the area of the rhomboid brain, and its convexity is directed ventrally.

On histological sections you can see that the anterior cerebral bladder is located below other departments. Its cavity in the areas of the cerebral bladder expands slightly, and in the area of the middle bladder the shape does not change.

In a 5.0 mm PCL embryo, the cerebral vesicles have clear contours. The main end of the neural tube forms an arc that covers the oral part of the embryo. The anterior cerebral bladder occupies the lowest position, its end part is at the level of the rudiment of the heart. The midbrain is the highest, part of its lumen remains narrow. The tubular shape of the lumen of the anterior cerebral bladder undergoes changes: there are two expansions - cavities.

The structure of the walls of the vesicles at this stage of development is poorly differentiated. They are formed by the accumulation of three layers of different cells: the inner is formed by densely spaced cells in several rows; intermediate - lighter and contains few cellular elements, it is the future nuclear layer; the outer layer is in contact with the mesenchyme of the embryo head.

BANUL B.Y., EMELIANENKO N.R., SHAKHIN N.M.
DEVELOPMENT OF THE CENTRAL NERVOUS SYSTEM IN
EMBRYOS 9.0-12.5 MM PCL

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On the frontal sections of the embryos of 9.0 mm PCL there are cavities of the rudiments of the lateral ventricles, which have the shape of hemispheres. They continue to grow. We can select the top, side and inferior walls, which smoothly merge into each other. The walls of the ventricles are formed by three layers of cell clusters. In the lateral and upper parts there is some thickening of the matrix layer, due to the increase in the number of rows of cells. Enlargement of both vesicles in the craniodorsal direction leads to greater certainty of the median position of the diencephalon and at the same time to the appearance of a small furrow, which is located between the vesicles sagittally and separates them from each other.

A protrusion appears in the ventral wall of the lateral ventricles due to the thickening of the second intermediate layer, namely the nuclear layer. This thickening forms the initial spherical shape of the cavity, narrowing it. At the same time, there is an intussusception of the ependymal layer in the roof of the forebrain, which is the beginning of the formation of the vascular plexus.

There is a clear division of the cranial part of the brain tube into five cerebral vesicles. You can see the beginning of the differentiation of the forebrain into the final and diencephalon.

The initial joint cavity of the forebrain, due to the allocation of parts, is also represented by three departments: the rudiments of the lateral and third ventricles.

BANUL B.Y., EMELIANENKO N.R., SHAKHIN N.M.
CHANGES IN THE COMMENCEMENTS OF THE BRAIN (7TH
WEEK OF FETAL DEVELOPMENT)

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In fetuses of 14.0-16.0 mm PCL is determined by a further intense increase in all parts of the rudiment of the brain. Its configuration remains curved in the form of an arc. The parietal hump, which corresponds to the rudiment of the midbrain, is the highest structure of this arch. The forebrain approached the rhomboid in such a way that only a narrow slit 180 mm wide and up to 1.0 mm deep remained between them.

At the same time, there is some straightening of the embryo, which leads to the location of the final brain near the heart hump at the top. Telencephalic vesicles increase intensively in the upper-posterior direction and slightly approach the medial and posterior parts of the forebrain. On the basal surface of the final brain, due to the evagination of the telencephalic bladder cavity, the olfactory brain is formed.

The study of the cavity of the lateral ventricles on histological sections made in different planes, gives the opportunity to see their configuration. Due to the growth of the hemispheres, the ventricles lose their spherical shape and become elongated.

The greatest length of ventricles at this stage of development reaches 1800 microns, and width - 320 microns. The walls of the ventricles are quite clearly defined. You can see three walls: the middle, upper and lower side. The middle and upper walls are formed by a mantle that is in the process of formation. In the lower part of the medial wall, thickenings of the hippocampal formation are determined, below which the wall thins and protrudes together with the choroid into the ventricular cavity, which has the form of the rudiments of the vascular plexus.

BANUL B.Y., EMELIANENKO N.R., SHAKHIN N.M.

**FORMATION OF SOME BASAL NUCLEI AND CHANGES IN THE
STRUCTURE OF THE VASCULAR PLEXUS IN PRENATAL 18.0-
20.0 MM PCL (7TH WEEK OF FETAL DEVELOPMENT)**

*Department of human anatomy named after M.G. Turkevych
Bukovinian State Medical University
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At the beginning of the prenatal period, the thickening of the ventral wall of the lateral ventricle becomes more formal, it is defined as a protrusion not only of the lower but also partially of the lateral wall. This protrusion is the beginning of the formation of a striped body, which is divided by a shallow longitudinal furrow into a medial and lateral part.

Later, a caudate nucleus is formed from the medial part, and a lenticular nucleus is formed from the lateral part. In front, the medial part of the striated body is rounded, protruding into the anterior part of the lateral ventricle. In appearance it resembles the definitive head of the caudate nucleus. This formation causes the formation of the configuration of the anterior part of the lateral ventricle in the form of an anterior horn. Its length is from 340 to 400 microns, and width - from 180 to 200 microns.

The beginning of the vascular plexus becomes more developed. It is an intussusception of the upper medial wall of the lateral ventricle and has the form of a fold, which is located in the dorsal direction from the level of the interventricular orifice. The root of the fold is quite wide. On the periphery of the folds there are single protrusions, which are the beginning of the branching of the plexus. The

length of the fold is 800-950 mm, and the width is 80-90 mm. The epithelium covering the folds on the outside is single-layered.

There is a further increase in the final brain, its hemispheres are almost equal in mass with the midbrain and hindbrain. Part of the diencephalon decreases in size and gradually covers the back of the hemispheres.

BANUL B.Y., SHAKHIN N.M.

**PRACTICAL SKILLS AS AN INTEGRAL PART OF KNOWLEDGE OF
HUMAN ANATOMY FOR MEDICAL STUDENTS**

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The study of human anatomy is impossible without achieving a sufficient level of students' mastery of both theoretical knowledge and practical skills. For better assimilation of the material it is necessary to work with wet preparations and models. This happens during practical classes under the supervision of a teacher. Wet preparations are used by students both during training and to illustrate the oral response as a result of the learned material. To better master the theoretical material, students are involved in the manufacture of educational preparations. This happens during independent work in free time and while working in scientific clubs.

At the Department of Human Anatomy, students are provided with cadaver material, medical instruments, fixing solutions, tables, models, as well as illustrations in electronic form. The result of the acquired knowledge can be demonstrated not only in practical classes, but also during computer testing.

An anatomical museum has been created on the basis of the department, which allows students to expand their knowledge and use original visual aids. One of the types of better mastering of material and practical skills is hand-made educational and museum preparations, tables, wet preparations.

The created methodical instructions for independent work of students, educational and methodical manuals from various sections of anatomy, the bank of electronic images of original anatomical preparations, the sufficient quantity of damp preparations of different age groups are prepared help in it. Theoretical knowledge must be supported by knowledge of practical skills. Only in this way will we be able to achieve deep knowledge of students and, in the future, highly professional specialists.

BANUL B.Y., SHAKHIN. N.M.

FEATURES OF PSYCHOLOGICAL ASPECTS OF TRAINING FUTURE DOCTORS

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The future doctor should act as a subject who actively learns about the world around him. He must independently find ways to solve specific didactic tasks, to show unconventional thinking, to make original decisions in various life situations.

The main task facing teachers of medical universities is to provide conditions for effective training of the future highly qualified physician as a subject of educational and cognitive activities. In modern conditions, the role of the teacher in the formation of positive traits of character and behavior of students, his worldview and purpose.

It is necessary to teach students to plan their work. During the educational process it is necessary to concretely and clearly formulate the purpose of the medical student, to use the most appropriate methods of didactic work and the achievements of modern science. An important task of teachers is to teach students to engage independently, skillfully manage their emotions, possess themselves, their thoughts and actions to maintain the proper level of their physical and mental condition, to have their own schedule of creative and most active work.

At the current stage of training doctors, a medical university teacher must be a person who inspires students to activities aimed at in-depth analysis of the content of the material, to generalize the principles of certain processes occurring in the human body and society. As a result, a basis is formed for the development of abilities and certain qualities of character needed by the future doctor, who will embark on the path of acquiring high professionalism.

BANUL B.Y., EMELIANENKO N.R., SHAKHIN N.M.

FEATURES OF THE FORMATION OF CEREBRAL VESICLES IN EMBRYOS AT THE BEGINNING OF THE 5TH WEEK HUMAN ONTOGENESIS

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In embryos with a length of 6.0 mm PCL in the area of the main end of the commencement of the central nervous system there are significant changes. Histological sections show rapid development of the external configuration of these areas and their cavities.

The forebrain noticeably enlarges, and small protrusions appear on its lateral surfaces, which gradually expand forward, upward, and slightly backward. Subsequently, they form a relief in the form of two vesicles. These protrusions are called telecephalic vesicles. They are the initial stage of formation of the hemispheres of the final brain. A shallow sulcus appears between the vesicles, separating the caudal portion of the forebrain from the telencephalic vesicles.

In addition to this furrow, there are eye bladder. These processes begin the differentiation of the anterior cerebral bladder into the rudiments of the terminal and diencephalon. The posterior cerebral bladder, by a bridge bend, is divided into a vinculum of a cerebellum, a bridge and a medulla oblongata.

External changes complicate the system of brain cavities. Expansion towards the cranial part of the forebrain cavity in the form of telencephalic vesicles that form the final brain, makes it possible to interpret these extensions as the beginning of the formation of lateral ventricles. The caudal part of the forebrain cavity, which is located behind the eye bladder, becomes the cavity of the diencephalon - the third ventricle.

The division of the forebrain cavity into lateral and third ventricles at this stage of development is quite conditional, because the connection between the above formations remains very wide.

YAKOVETS K.I., DENECHKO A.V., VOLOSHUN V.L.
**IMPLEMENTATION OF MEDIA DIGITAL TECHNOLOGY IN THE
EDUCATIONAL PROCESS OF BUKOVYNIAN STATE MEDICAL
UNIVERSITY**

Bukovinian State Medical University

The Covid-19 pandemic affects all spheres of human social life, while making new demands on the educational process. Research and teaching staff have new challenges, which determines the search and implementation of modern educational innovations, forms, methods and teaching aids. Increasing the training requirements for health professionals in higher education institutions encourages teachers to be able to interest students in their subject so that they do not just watch through monitor screens, but memorize, absorb knowledge and motivate to learn.

The vector of this study is: determining the effectiveness of digital media technologies using mobile messengers / programs as a method of pedagogical storytelling, in the formation of professional competencies and strengthening motivation to learn.

In the process of research, teachers and students of Bukovynian State Medical University during 2020/2021 academic year. used media technologies in the educational process: storytelling (live broadcasts and webinars with invited leading

experts in the field, online workshops and video presentations of algorithms for practical skills, health lessons, insta-tours by university departments, online conferences); storytelling (publications on social networks of the university); communication, through the mobile application Telegram for the exchange of information materials. Methods of observation, online survey, expert assessments with subsequent statistical processing of the obtained results were used.

At the end of the semester, we conducted an online survey of study participants. To the question "Do you think it is effective to use digital media technologies in the educational process?" 100% of respondents answered "Yes"; to the question "Do you think that the use of digital media technologies in education has improved your theoretical preparation for the lesson?" 78% of students answered "Yes".

The results of the study show that digital media technologies in the training of future health professionals help to increase the level of professional competences, increase motivation to learn, develop professionally important and personal qualities of both students and teachers.

SHVETS N.V.

EFFECT OF MELATONIN ON ACTIVITY OF MAIN ENZYMES OF CORY CYCLE IN RATS WITH ALLOXAN DIABETES

Bukovinian State Medical University

Definition the influence of melatonin on basal levels of glucose (BG) in blood, activities of glucose-6-phosphatase (G-6-Ph, EC 3.1.3.9) in liver, pyruvate kinase (PK, EC 2.7.1.40) in muscles of alloxan diabetic rats. Diabetes was induced in male Wistar rats by single i.p. injection of alloxan (170 mg/kg). Four days after diabetes induction, rats were divided into diabetic (untreated) and melatonindiabetic group (10 mg/kg «Sigma» USA, daily and orally for 42 days starting from 5th day). Rats with diabetes mellitus (DM1T) characterize by $BG \geq 8.0$ mmol/l. Animals were sacrificed at 49th day from the beginning of the experiment accordance with the ethical treatment of animals. The rectus femoris muscle tissue and liver were quickly removed, rinsed in saline, blotted, weighed and homogenized. Determinations of the enzymes activities were by standard methods. Statistical analysis was performed using Statistica 10 StatSoft Inc. Melatonin injections caused a sharp decrease by 70% (on 49th day) means normalization in the elevated serum glucose level in DM1T group of rats compared with BG level before treatment. Accordance to results obtained in liver of diabetic rats the activity of G-6-Ph-ase was increased in average by 165% compared with control value. Reduced activity of G-6-Ph-ase in alloxan diabetic rats under melatonin action is probably due to the fact that melatonin is in the physiological counteraction with cortisone and catecholamines. We have established reduction of pyruvate kinase activity in skeleton muscles of diabetic animals in average by 58% compared with the control. According to our research, 6

week daily administration of melatonin to diabetic rats at 10 mg/kg of b.w. resulted in normalization of pyruvate kinase activity. The improvement of Cory cycle by melatonin probably mediated by improved of glucose utilization due to increased capture of tissues. These findings suggest that melatonin reverses the catabolic consequences of total lack of insulin, potentially by decreasing of basal glucose level in the blood, activating of pyruvate kinase activity in skeleton muscles and suppressing of glucose-6-phosphatase activity in liver of alloxan diabetic rats.

KASHPERUK-KARPIUK I.S., YANA VERBOVA

THE IMPACT OF USING FACE MASKS ON THE MICROFLORA OF THE ORAL CAVITY.

**Bukovinian State Medical University
Chernivtsi, Ukraine**

With the expansion of Covid-19 wearing face masks has become commonplace throughout the world as it has been proven one of the efficacious tools to impede virus transmission. Although face masks are keeping us safe from Covid-19 and other contagious diseases, they are starting to cause a detrimental effect on our oral health today.

The research paper aims to provide a solid evidence base for the significance of wearing face masks in the era of Covid-19 as well as investigate some of the negative consequences on our health, namely oral cavity.

The paper elucidates such research materials as facts and surveys conducted among regional dentists and students of BSMU, implementing such methods as social polls, case studies and research articles. Additionally, the comparative research fostered the thorough analysis of wearing face masks and their adverse impact on the health condition of the oral cavity.

Research results indicate a clear connection between using face masks and the increase of mouth dryness which helps bacteria and viruses propagate and thus trigger tooth decay, inflamed gums, bad breath and gum disease. Besides, microbiological analysis of mask surfaces revealed the considerable presence of Staphylococci (27%), Pseudomonas (18%) and Streptococci bacteria (16%),etc. which cause the above-mentioned oral cavity diseases.

Despite some of the harmful effects emerging from wearing masks, people must gain a profound insight into the implementation of some preventative measures, such as oral hygiene, nutritious consumption of food and drinks and maintaining a healthy lifestyle, which can smoothen and decrease the symptoms under discussion. The importance of using masks in the time of pandemic is paramount since it slows of the virus and helps protect the vulnerable in the community from catching and spreading contagious diseases.

KASHPERUK-KARPIUK I.S., ANASTASIA-TERESA TYMCHIIY

ANOMALIES OF THE TONGUE

Bukovinian State Medical University

Chernivtsi, Ukraine

The tongue is a complex muscular organ situated in the oral cavity and involved in multiple functions including mastication, taste sensation, articulation and the maintenance of oral health. Although the gross embryological contributions to tongue formation have been known for many years, it is only relatively recently that the molecular pathways regulating these processes have begun to be discovered. In particular, there is now evidence that the Hedgehog, TGF-Beta, All play an important role in mediating appropriate signaling interactions between the epithelial, cranial neural crest and mesodermal cell populations that are required to form the tongue. In humans, a number of congenital abnormalities that affect gross morphology of the tongue have also been described, occurring in isolation or as part of a developmental syndrome, which can greatly impact on the health and well-being of affected individuals. These anomalies can range from an absence of tongue formation (aglossia) through to diminutive (microglossia), enlarged (macroglossia) or bifid tongue. Here, we present an overview of the gross anatomy and embryology of mammalian tongue development, focusing on the molecular processes underlying formation of the musculature and connective tissues within this organ. We also survey the clinical presentation of tongue anomalies seen in human populations, whilst considering their developmental and genetic etiology.

The tongue is a very important organ, as it plays an important role in deglutition and a cardinal role in articulation of speech. Bilobed or incomplete bifid tongue is not a well-known congenital anomaly for otolaryngologists. Bifid tongue involving the anterior two thirds has been reported before while no cases reported to have bifid (complete or incomplete) posterior third. A case of 5 years old girl with bilobed posterior third of her tongue is presented. According to literature search this appears to be the first case published on such lesion.

KASHPERUK-KARPIUK I.S., TETIANA TSARYNNA

ABNORMALITIES IN THE DEVELOPMENT OF INDIVIDUAL TEETH

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The article investigates the classification of anomalies in the development of individual teeth, the causes of their occurrence and methods of treatment. Anomaly in the development of individual teeth is a very common pathology that causes a number of problems. According to the literature, in Ukraine this pathology occurs in 12-22% of cases among all dental anomalies and deformations.

There are two types of classification. The first one is classification of non-carious lesions of the teeth. Anomalies in the number of teeth: hyperdontia, hypodontia. These are congenital anomalies. Tooth size anomalies (microdontia or

macrodontia, merger, splicing). Such anomalies are hereditary. Anomalies of the enamel structure (imperfect amelogenesis, enamel hypoplasia associated with external factors, local hypoplasia of enamel, hypocalcification of enamel). Anomalies of dentin structure (imperfect dentinogenesis, dentin dysplasia, regional odontodysplasia). Anomalies in the structure of cement. Tooth color abnormalities.

The second one is classification of non-caribou's lesions of the hard tissues of the health. Anomalies caused by external factors: Systemic hypoplasia of the enamel; Aplasia of the enamel of deciduous teeth of premature infants; Local hypoplasia of the enamel due to injury; Fluorosis, "Tetracycline teeth". Anomalies that are inherited and due to imperfections in the structure of the hard tissues of the tooth: Imperfect amelogenesis; Imperfect dentinogenesis; Stainton-Capdepon syndrome. Quantity anomalies, size and shape of teeth, genetically determined by heredity: Type – autosomal dominant. Structural abnormalities and malformations of tooth tissues that occur due to systemic pathology in the child's body: Hutchinson's teeth in hereditary syphilis; "Amber" teeth with imperfect osteogenesis; Gray-blue and brown teeth with hemolytic syndrome.

Treatment consists of:

- resealing of canals and tooth, and then chemical bleaching solutions;
- whitening of intact teeth with ultraviolet rays.

Orthopedic treatment that is dental prosthetics is most often used.

All in all, these categories of anomalies are mostly congenital or caused by external damage.

TOVKACH YU.V., KUZIK F.V., AMELIN P.M.

FEATURES HEART DISEASE

Bukovinian State Medical University

Chernivtsi, Ukraine

In recent years, statistics shows disappointing data: the number of detection of the pathologies associated with the heart, has significantly grown. According to the data of the world health organization for 2019 Ukraine takes the first place in Europe and the second in the world as to mortality from cardiovascular diseases. The mortality of people with this diagnosis constitutes 68% of all deaths in Ukraine. Children are also included to this group. Congenital heart malformations are the most common anomalies and occur in approximately 0.8% of the newborns. The structure of congenital heart diseases is very diverse, the most common of them are: ventricular septal defect (40 %), atrial septal defect (14 %), transposition of the great vessels (5,7 %), and Fallot's trilogy (6,2 %), open aortic duct, hypoplasia of the left ventricle, stenosis of the pulmonary artery. Risk factors for having a child congenital heart disease are: maternal age, endocrine disorder in parents, toxicosis in the 1st half of pregnancy and risk of abortion, dead born history, the presence of other children with congenital malformations, taking by a woman of the endocrine drugs to

maintain pregnancy. According to the data of the Ministry of health, about 40 thousand children with congenital cardiovascular diseases before the age of 14 years are registered in Ukraine. Early detection of abnormalities contributes to the prevention of complications. Congenital heart defects are characterized by abnormal development of the heart and great vessels as a result of embryogenesis damage in the period of 2-8 weeks of pregnancy against a background of hereditary (polygenic) predisposition under the influence of unfavorable external factors (viruses, toxic substances) and internal (products of the altered metabolism) environment. Congenital heart disease is a group concept that combines the anomalies of the position and the morphological structure of the heart and great vessels. A number of more severe, combined heart diseases with frequent adverse outcomes increases already in the first months of life. Even in the countries such as the US and Britain in case of a natural clinical course of the disease until the end of the 1st year of life more than 70 % of children die. In North America, congenital heart disease is the cause of death in 37 % of infants, in Western Europe it is 45%.

In 1997 congenital heart disease was diagnosed in 04% per 1000 of alive newborns in Ukraine, in 2000 - 0.5% and in 2005 - 0,85% per 1000. According to the Ministry of Health of Ukraine, in 2005 the total number of patients with congenital heart malformations before the age of 14 years constituted 37 588 people, at the age of 14-18 years - 8708 people. Annually according to I. M. Yemets data about 5-6 thousand of infants are born in Ukraine. Nearly 1.5 thousand of them need urgent cardiac surgery. This does not include deep preterm infants and antenatal deaths, among whom CHD (congenital heart disease) is much more common. Thus, according to A.I. Kim and co-authors the incidence among the low-birth-weight newborns is 1.73%.

According to G.V. Knyshova, N.M. Rudenko et al., 90% of patients with CHD without surgical correction die at the age of 1 year. In addition to that, 52% of infants with CHD die in the neonatal period. At the same time, as noted by M.F. Zinkovsky et al., 20% of children with CHD without surgical correction become completely or relatively inoperable by the end of the 1st year of life due to irreversible changes in the organs and systems. Only 10-15% of patients with heart defects without pronounced hemodynamic disorders reach adolescence without surgical correction. Children who have survived the first year of life without surgical treatment, usually die later because of various complications. In addition to that, the mortality of such children under the age of 14 constitutes 42-42,3%.

Therefore, the literature data indicate the diagnostics significance of cardiac heart defects in children as early as the 1st year of life to provide timely cardiac surgery and reduce mortality rates. However, the cardiac surgery coverage for children of 1 year of life with congenital heart malformations in Ukraine does not currently exceed 10-12%.

ANDRIYETS M.M., ANDRIYETS V.I.

SPORT AND HEALTH

*Bukovinian State Medical University
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Sports and health of man from ancient times are the subject of many scientific discussions. He unites people, acquaints them among themselves, sports strengthens the health, character and even the mental abilities of people who engage in them, develops in them such skills as speed, agility, reaction, coordination, endurance, patience and strength. Sport makes people more resistant to negative environmental factors. The latter include active athletes, trainers, doctors, directors of various sports associations, sports fans, and others. And each of them contributes to the development of sport on our planet.

However, sports are not only health. Any physical activity is also required for the activity of thinking. Famous ancient scholars and philosophers considered exercise to be the best rest for the mind. In particular, it is definitely known that some mathematicians, if they could not solve a problem, left him and walked for a walk.

And even sports make you feel the joy of your own achievements. It did not happen to you at one time and roll the ball through the grid, and now - you take prize places in the competitions! And you understand the price of the hard work and work on yourself. And besides, you realize that perseverance helps you to achieve any goals.

ANDRIYETS M.M., ANDRIYETS V.I.

LIFE AND STERT

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Life and longevity are inextricably linked to health, which is influenced by many factors. The impact of sport on human health is enormous. However, sports are not only health. Any physical activity is also required for the activity of thinking. Famous ancient scholars and philosophers considered exercise to be the best rest for the mind. In particular, it is definitely known that some mathematicians, if they could not solve a problem, left him and walked for a walk. And during these walks, the answer itself came to their head, and they did not think about it at all.

Accordingly, the role of sport in human life is the most important attribute in the way of life of people who are looking for health and want to preserve their beauty and attractiveness of the body for many years. The result of long-term sports is not only a slim and beautiful figure, but also enormous health.

It's not necessary to be a professional athlete to enjoy and enjoy sports. Many people run, someone is walking on aerobics and fitness, someone playing football or doing karate. The main thing is to like it. At the same time, it makes you physically

strong and self-confident, and also gives you the opportunity to get to know many interesting people.

ANDRIYETS M.M., ANDRIYETS V.I.
SPORTS PLEDGE OF STUDENTS HEALTH
Bukovinian State Medical University
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Physical culture is the key to a healthy lifestyle. Strengthening and maintaining health is a priority area of the main legislative acts and normative legal documents on physical culture. It is also worth paying attention to the fact that students are always in a stressful state, because mental activity is associated with emotional stress, especially during the session. However, not all people are well informed about a healthy lifestyle, and some are deliberately neglected by them. Numerous studies show the beneficial effects of regular physical exercise on the health and physical condition of a person of any age. At different ages, these classes have different goals. In student's classes, classes are especially important: they are aimed at improving physical fitness, physical development and physical performance, and preventing diseases that may occur at an older age. For normal functioning of the student's body, a certain amount of motor activity is required, which is embodied in physical exercises.

Regular physical activity leads the body to a state of *trenirovannost*, which is based on the process of adaptation, that is, the adaptation of the functions of different organs to the new conditions of their activities.

ANDRIYETS M.M., ANDRIYETS V.I.
HEALTH AND THE PRESENT
(PANDEMIC)
Bukovinian State Medical University
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Drug addiction, smoking, alcohol use, substance abuse - this is often seen as a better leisure activity among a certain part of boys and girls. Young people are extremely illiterate in the issue of healthy lifestyles.

Work on the formation of a healthy lifestyle should be conducted in accordance with the conditions that dictate our present. And for this purpose it is expedient to study, rethink and rebuild various sections of cultural and educational work, to introduce domestic innovative ideas, world experience. And most of this work falls on the teachers of teachers of physical education. Taking into account the foregoing, it becomes clear that there is an urgent need to create a comprehensive model aimed at improving the health of children and young people in Ukraine and that such a model should be based on the principles and principles of the theory and practice of the formation of a healthy lifestyle recognized by the world community.

This situation can be improved by applying a new approach to healthy lifestyles, based on a modern health-care approach, which takes into account all aspects of it. And according to Lozovytsky's study of a healthy way of life should be systemic and should contribute to the harmonious development of psychophysical abilities of youth. It is not limited to a periodic focus on the realization of a healthy lifestyle as a collective value.

ANDRIYETS M.M., ANDRIYETS V.I.
LIFESTYLE DURING A PANDEMIC
Bukovinian State Medical University
Chernivtsi, Ukraine

During the pandemic, the formation of a healthy lifestyle should be carried out in accordance with the conditions that today dictates to us. And for this it is advisable to study, rethink and rebuild various areas of cultural and educational work, to introduce domestic innovative ideas, world experience. And most of this work falls on teachers of physical education teachers.

Taking into account the foreable, it becomes clear that there is an urgent need to create a comprehensive model aimed at improving the health of Ukraine's children and youth, and that such a model should be based on the principles and principles of the theory and practice of forming a healthy lifestyle recognized by the world community.

The above problems exist in Ukrainian society not the first year. Ukrainian youth of the 21st century socialized in an independent democratic state - it is more independent, independent, uncompromising. She has the ability to independently solve their problems. At the same time, society, like many years ago, tries to take care of the youth and to impose its ways of solving the problems of the youth environment.

GORODINSKY S.I.
PHYSICAL EDUCATION AND LIFE OF STUDENTS
Bukovinian State Medical University
Chernivtsi, Ukraine

It is physical culture and sports throughout life that shapes young people's endurance, liberty, aesthetic tastes, feelings of strength, benefits and justice. However, due to lack of attention, physical education in educational institutions passes into an elective or hobby category.

However, it should be remembered that exercise has a healing effect only when properly selected according to the disease and their correct dosage. It is also necessary to take into account age, sex, physical fitness and efficiency, functional

capabilities of the body, severity of the disease and so on. An important feature of the system of physical education is the preparation of people for highly productive work and protection of the Motherland. It determines the practical role of physical education in society.

All this hinders the implementation of educational strategies for young people in terms of physical perfection. This problem is especially relevant for students because at their age the foundations of a healthy lifestyle are formed and laid, and physical education is not always a priority.

GORODINSKY S.I.

PHYSICAL EDUCATION TEACHERS AS COORDINATORS DURING A PANDEMIC

*Bukovinian State Medical University
Chernivtsi, Ukraine*

According to the results of research ES Wilczkowski and BM More than half of teachers do not have a modern method of improving motor skills and do not link their development with the acquisition of exercise techniques. Of particular concern is the poor arsenal of forms and methods of physical education that are cultivated in most schools, the inability of teachers to apply new innovative technologies in practice.

According to LP Sergienko, still leaves many gaps in the training of specialists in physical culture, both in theoretical and practical aspects. Thus, one of the little-studied areas of professional training of physical education teachers is the formation of professional knowledge, skills and abilities in the teaching of sports and pedagogical disciplines. Despite the fact that the technology of using innovative learning as a subject of research was considered in almost all scientific works concerning the formation of professional skills of future physical education teachers, in most studies only certain components of skills were singled out and the process of their development was insufficiently studied. specific forms, methods and means of teaching.

GORODINSKY S.I.

FOOTBALL SECTIONS IN HIGHER EDUCATIONAL INSTITUTIONS

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Speed and strength training as a factor in the formation of sportsmanship. The effectiveness of sports movements associated with the active interaction of athletes with the objects of the external environment is determined mainly by the nature of the forces developing in this case, as well as the direction and speed of movement. In particular, when performing various techniques in football, associated with

overcoming significant resistance of the opponent, the improvement of the working effect is mainly due to the increase in the value of the maximum effort in a certain range of time.

The rapid development of women's football necessitates the development of scientific bases for training football players, who on the one hand can rely on the experience gained in men's football, on the other hand, must take into account the specific physiological reactions of women to training and competitive loads.

As practice shows, speed indicators begin to grow actively from 15-16 years, while the indicators of maximum strength are approaching the level of adults at 17-18 years of age. Therefore, the age of 17-18 years is favorable for the development of speed and strength qualities in football players.

The results of the analysis of various aspects of strength and special speed and strength training in football allow us to identify the following important factors in the structure of physical fitness of athletes:

- 1) special physical fitness on the basis of a high level of development of speed and power qualities;
- 2) strength training taking into account anthropometric indicators;
- 3) strength endurance on the basis of technical skill;
- 4) speed abilities.

It should be borne in mind that the strength of some muscles should be developed and improved mainly in the direction of speed and force (leg muscles), while other muscles - mainly in the direction of the actual force (back muscles).

VOLOSHUN V.L.

SPORT AND HEALTH

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Sport and physical culture are not only a healthy way of life - it is a normal and healthy life in general, which opens more and more opportunities for the realization of strength and talents. This is the path he enters with common sense, so that the life lived would be fruitful, bring joy to himself and others. The progressive rhythm of life requires increasing physical activity and preparedness. All the increasing loads that fall on our shoulders throughout life require higher physical perfection, which must be achieved through physical education.

The importance of physical culture in the process of forming a personality is huge - a clear example of this is the proverb - "In a healthy body - a healthy spirit." Analyzing scientific research, we can say that there is a direct dependence of the demographic, and hence the economic situation in the country on the level of physical culture of the population. To study the influence of physical culture on the process of personality formation and the choice of professional activity, it is necessary to take into account both permanent and temporary conditions that set

before a person, the task of improving their physical condition and health. However, we should not forget about the importance of assessing physical culture throughout life. Health is the greatest wealth, no matter how you buy or receive it as a gift. Everyone needs to do everything to preserve it and support it.

TOVKACH YU.V.

ATROPHY OF THE BONE TISSUE OF THE JAW IS ITS RECOVERY

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Chernivtsi, Ukraine*

The bone tissue of any tooth can undergo dystrophic processes. Clinically, it can not manifest itself. In some cases, the presence of an atrophy of the jaw appears with any doctor's interventions conducted directly in the oral cavity.

But there are occasions when young people with the help of which young jaw atrophy becomes noticeable in connection with an early dropout of teeth and their long absence in the mouth. External signs of bone destruction can be pronounced. In patients there are wrinkles in the area of missing teeth, there is a tingling of cheeks. This is because the facial muscles that attach directly to the bones are also exposed to adverse factors in the oral cavity. Many patients complain of difficult chewing food. Some have a tongue change. Often, at the atrophy of the jaw there is an outcrop of the necks and distortion of the remaining teeth, which, in turn, can lead to the development of severe periodontal disease.

You can restore the required bone tissue both upper and lower jaw in various ways. For these purposes, specific preparations of phosphorus and calcium can be used, as well as specially prepared and prepared bones of some animals or their own resources. In this case, bone tissue in most cases is taken from the area of the chin of the patient, where after some time the most complete regeneration of the structure of the jaw bone occurs. The new bone is formed within six months after the performed osteoplasty. Despite the length of the process, osteoplasty is popular among patients due to the small number of side effects and its high performance.

GORODINSKY S.I.

COVID-19 AND THE DEVELOPMENT OF PHYSICAL CULTURE IN UKRAINE

*Bukovinian State Medical University
Chernivtsi, Ukraine*

The formation of future specialists of the chosen specialty is the last stage in independent life, and this imposes a great responsibility on them for the state of health and the level of physical preparedness of students. The present of higher education is focused on effective learning, effective improvement of the chosen

profession. This problem, to a large extent, depends on the student's ability to work. However, the increase of students' ability to work is possible through the introduction of various forms of recreation, leisure and physical education into the educational process.

The number of students of city, regional and all-Ukrainian sports competitions (team and individual) increases every year. The increase does not happen at the expense of the same athletes, but annually students take an initiative to certain types of sports and continue the training which had begun even from school years.

Consequently, the planning and organization of competitions is carried out by a sport club of in close cooperation with student self-government.

PRONIAIEV D.V.

ANALYSIS OF THE MORPHOMETRIC PARAMETERS OF THE UTERUS

*Bukovinian State Medical University
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A comprehensive statistical analysis of the morphometric parameters of the internal female reproductive organs between the objects of the study remote in time was conducted for the first time (I group – 35 specimens of fetuses deceased during 2017-2019; II group – 105 specimens of fetuses from the Museum of M.G.Turkevych Department of Anatomy, Clinical Anatomy and Operative Surgery, Bukovinian State Medical University, collected in the period 1995-2000). Differences of their fetal anatomy under a probable influence of constantly changing environmental conditions were found. For the first time differences in the structure of the internal female reproductive organs in fetuses of various terms between the groups of morphological investigation remote in time were found.

Perinatal changes of the uterine shape are observed, a certain shape of the uterine fundus at every stage of the perinatal development is determined. The relief of the uterine fundus is confirmed to differ by its greatest variability. It can be vallecuate, tuberculous, flat and convex. Physiological disappearance of the channel on the uterus is followed. It is confirmed by the determined reliable reverse correlations of average force between the width of the uterine fundus which parameters range from $6,0\pm 0,21$ mm to $6,4\pm 1,60$ mm, and parietal-calcaneal length (PCL) of the fetus.

PRONIAIEV D.V., KRYVETSKIY V.V.

ANALYSIS OF THE MORPHOMETRIC PARAMETERS OF THE OVARIES

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New, unknown earlier data concerning chronological succession of topographic-anatomical interrelations of the internal female reproductive organs between themselves and adjacent organs and structures during the perinatal period of human ontogenesis were obtained by means of current and classical methods of investigation. Perinatal normative anatomical standards of the internal female reproductive organs are determined for the first time. On the basis of the results obtained the stages of a definite structure formation of the internal female reproductive organs are determined in dynamics of their development as well as the mechanisms of occurrence of their structural variants and possible CDD. It will enable to understand better the course of pathological processes, prevent possible complications, and form an anatomical basis for development of new methods of their surgical correction in fetuses and neonates.

During caudal transition of the ovaries their morphometric parameters increase relatively slow (5-8-month fetuses), which is evidenced by the determined reliable correlations of an average force between the ovarian width and PCL of the fetus. Morphometric parameters of the right ovary width in the fetuses during this term of development range from $3,4\pm 0,82$ mm to $4,1\pm 0,64$ mm, and the left one – from $3,2\pm 0,59$ mm to $3,7\pm 0,25$ mm. During the fetal period certain changes in the microscopic organization of the ovarian parenchyma are found which is manifested in gradual migration of the medullary substance and cortical cords from the center with their gradual disappearance in the portal portion in 8-month fetuses and their simultaneous substitution by the blood vessels. The differences found in the anatomical structure of the ovaries in fetuses of various terms differ totally from those in the postnatal period of human ontogenesis. Considering prevailing triangular shape of the ovaries in 4-6-month fetuses (87 % of cases), and the fact that one of its borders is directed to the uterine tube and is the point of attachment of its mesentery, we suggest to term it “tubular border” of the ovary.

PRONIAIEV D.V., KRYVETSKIY V.V.

ANALYSIS OF THE MORPHOMETRIC PARAMETERS OF THE UTERINE TUBE

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As the result of morphometric examination of the internal female reproductive organs at every stage of the perinatal period appropriate variation series are formed. The distribution for them was evaluated, arithmetic mean with standard quadratic deviation and percentile scale of values were calculated. Reliability of difference between independent quantitative values was determined by means of Mann-Whitney U-criterion. Spearman statistical test was applied to analyze correlations of the results obtained. By means of the applied methods of examination combined, the individual and age anatomical variability and spatial-temporal perinatal transformations of the internal female reproductive organs with the following determination of critical periods were determined for the first time. It is of great importance for finding morphological preconditions promoting occurrence of congenital developmental defects (CDD). Peculiarities of the structural organization of the internal female reproductive organs in fetuses of different term groups are determined.

Morphometric parameters of the right uterine tube length in the period from 7 to 10 months of the intrauterine development were found to increase from $14,5\pm 3,77$ mm to $22,4\pm 3,38$ mm, and the left uterine tube – from $12,9\pm 3,78$ mm to $21,0\pm 3,38$ mm. The stages of the uterine tube formation are determined – from curved (at the beginning of the fetal period), zigzag and spiraled (in the middle of the fetal period) to the curved spiraled shape (at the end of the fetal period and in neonates). The regularities found are evidenced by the analysis of morphometric parameters of the uterine tubes by means of Mann-Whitney U-criterion, and they are indicative of a reliable difference in their parameters ($p<0,05$) in 8-month fetuses ($16,0\pm 0,79$ mm – of the right uterine tube, $14,9\pm 1,34$ mm – of the left one) and in 9-month fetuses ($22,6\pm 1,51$ mm – of the right uterine tube, $20,8\pm 1,83$ mm – of the left one).

PRONIAIEV D.V.

**INTERRELATIONS BETWEEN PERINATAL MORPHOLOGICAL
TRANSFORMATIONS OF THE INTERNAL FEMALE
REPRODUCTIVE ORGANS**

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Close interrelations between perinatal morphological transformations of the internal female reproductive organs and the processes of their histogenesis are determined. The periods of an intensive growth of hollow structures of the internal female reproductive organs are found to coincide with the periods of an intensive growth of their intra-parietal vessels and muscular layers. At the beginning of the fetal period (4-5 month) the circular muscle fibers of the uterine tubes begin to grow to the center from the ampulla to the isthmus (diameters of these parts correlate as

1:3) with appropriate gradual increase of their diameter to the end of the 10th month of the intrauterine development. At the end of the perinatal period of human ontogenesis the circular muscle fibers of a part of the uterine tubes develop evenly. Intensive periods of ovarian growth coincide with accelerated enlargement in the size of the glandular parenchyma cells without considerable increase of their amount.

Thus, the anatomical study conducted has solved an urgent issue of modern morphology – to determine morphological regularities of organs and structures of the female reproductive system. It forms the foundation to develop preventive, diagnostic and therapeutic methods concerning their perinatal pathology.

PRONIAIEV D.V.

CRITICAL PERIODS OF THE INTERNAL FEMALE REPRODUCTIVE ORGANS

*Bukovinian State Medical University,
Chernivtsi, Ukraine*

As the result of morphometric examination of the internal female reproductive organs at every stage of the perinatal period appropriate variation series are formed. The distribution for them was evaluated, arithmetic mean with standard quadratic deviation and percentile scale of values were calculated. Reliability of difference between independent quantitative values was determined by means of Mann-Whitney U-criterion.

On the basis of regularities found in the morphogenesis of the internal female reproductive organs their critical periods and morphological preconditions of occurring variant and congenital developmental defects were determined. Critical periods coincide with the period of an intensive enlargement of morphometric parameters of the internal female reproductive organs: uterus – 4-5 month, ovaries – 5-6 and 9-10 month, uterine tubes – 5-6 and 8-9 month, vagina – 4-5 and 7-9 month. Certain nonsynchronous descending of the right and left uterine tubes into the minor pelvic cavity is found. Topographic changes of the uterine tubes are found to coincide with that of the ovaries, which is stipulated by their close syntopogenous relations.

GORODINSKY S.I.

FEATURES OF THE ORGANIZATION OF TREGGING

*Bukovinian State Medical University
Chernivtsi, Ukraine*

Improving the system of training athletes is impossible without finding new approaches and methodological solutions in the organization of training, as well as

the use of modern achievements of sports science in the practical work of coaches. The analysis of works of domestic and foreign experts convincingly proves that for high mastering of technical - tactical skill and effective competitive activity in football the high level of speed and power qualities is necessary.

In the process of strength training it is necessary to solve the following tasks:

a) to ensure the general development of the main muscle groups in order to create the conditions for specific manifestations of strength in the chosen sport and the successful mastering of general-preparatory, special-preparatory and competitive exercises (general strength training);

b) to ensure the development of specific for the selected sport physical abilities (strength, speed-strength, strength endurance, etc.) necessary for the successful assimilation of motor actions, which is the basis of competitive activity in this sport.

Thus, the work on improving new approaches in the organization of training of future physical education teachers made it possible to establish that the introduction of innovative technologies is preceded by a conscious and well-thought-out program of action.

PALICHUK YURII

PRESENT AND PHYSICAL EDUCATION TEACHER

Bukovinian State Medical University

Chernivtsi, Ukraine

The problem of ensuring the connection of education in educational institutions with future professional activity, including in the field of formation of professional skills of future physical education teachers, has not been fully resolved. Based on the above, we can conclude that the professional education of future teachers of physical education should provide their high professionalism, conditions for self-realization, flexibility, variability of learning.

The regularities of formation of professional skills of future physical education teachers, their connection with the peculiarities of means, methods and organizational forms of teaching in pedagogical educational institutions, and pedagogical conditions that determine the effectiveness of the educational process remain insufficiently studied. Improving the professional training of future physical education teachers at the present stage requires more effective ways of organizing the educational and pedagogical process, raising it to the modern technological level using an innovative approach to learning.

Therefore, taking into account the above and the results of practical work, professional education of physical culture specialists should be based on the methodological principles of advanced ideas of domestic and foreign scientists, the Constitution of Ukraine, legal documents of Ukraine on physical culture. Work on

improving the professional skills of future physical education teachers made it possible to establish that the introduction of innovative technologies is preceded by a conscious and well-thought-out program of action for the organization of educational process and vocational training, which became the basis for further development of our new technological models.

PALICHUK YURII
PERSONALITY AND UPBRINGING
Bukovinian State Medical University
Chernivtsi, Ukraine

From an early age, parents, educators, the media - radio and television - try to explain to the child the unique benefits of physical activity and encourage children to play sports. It is difficult to overstate the importance of physical culture and sports for human health, development and general condition. At this age, sports are usually under the supervision of experienced coaches and professionals who monitor the proper and harmonious development of the growing body. Physical education teachers at school are important at school age.

Gymnastic performances, sports competitions, mass sports festivals, demonstrations, sports parades and other sports and entertainment events have a particularly great effect on the development of aesthetic education. aesthetic tastes, ideals, the need for their implementation in everyday life.

In addition, physical culture and sports give a person not only a sense of physical perfection, but also give him strength and shape the spirit, raises the level of moral qualities, which is so necessary for today's society., Stimulating a new approach to life and work, new achievements. In order to consciously come to the conclusion and the importance of physical culture and sports, a person must understand its role in his life. And it is very good if he realizes it not too late, in order to start leading a healthy lifestyle. Physical culture and sports are effective means for education of comprehensively harmonious development of the personality which combine educational, improving, educational and other links.

So you need to do everything to save it until it's too late. Usually, due to the wrong way of life, a person develops nervous disorders, various diseases, problems at work and at home. After all, often trips to the doctor can be avoided if you build your lifestyle properly.

YAKOVETS K.I.
ANALYSIS OF DATA ON SKIN CANCER IN THE WORLD
Bukovinian State Medical University
Chernivtsi, Ukraine

The incidence of melanoma remains one of the fastest growing among all types of cancer worldwide. This explains the increased attention of doctors of all specialties to skin tumors. Melanoma of the skin - in the structure of all malignant

neoplasms of the skin is about 10% of the proportion, but it accounts for more than 80% of mortality in this group (Lemekhov VG, 2001). The number of newly registered cases of melanoma is growing every year. According to the WHO, more than 200,000 cases of skin melanoma and approximately 65,000 melanoma-related deaths are reported worldwide each year (Jemal A. et al., 2007; Thiers B., 2011). In Europe, Singapore, Canada, and the United States, the incidence continues to rise, especially among light-skinned races, by 3–7% per year (Linos E. et al., 2009). The highest incidence rates are observed among men of Caucasian age 65 years and older (120.6 per 100 thousand population), followed by women over 65 years (46.9 per 100 thousand population) (Darre Il S. Rigel et al., 2012).

In 2017 in Ukraine were registered more than 3 thousand new cases of melanoma and about 1 thousand deaths due to this tumor. On average, in Ukraine the incidence of melanoma is 6.18 cases per 100 thousand population. In Australia, where UV radiation is one of the highest on the planet in connection with the depletion of the ozone layer, the frequency of basal cell carcinoma is approximately 788 per 100 thousand persons (R. Tung, 2009). The proportion of malignant skin tumors detected during preventive examinations, is 30% of all detected at prophylactic examinations of tumors (SI Korovin et al., 2010) for 80 years it has grown to 395 times. Most people have melacytic nevi (acquired), the number of which ranges from one to several hundred. Primarily they appear during childhood, then their number is actively growing in puberty. People with a large number of nevi (100 or more) are at risk. Causes of malignant degeneration of melanocyte nevi can be:

- excessive exposure to UV radiation, including artificial Solarium;
- chronic photodermatitis;
- frequent injury of the skin in the area of moles (friction, shaving, chemical irritation factors);
- self-treatment (with the use of irritating drugs);
- hormonal disorders;
- primary and secondary immunodeficiency states.

Risk factors include exogenous and endogenous factors. One of them includes some biological characteristics of the organism, the presence of which increases the risk of melanoma. Another group is formed by predecessors of the melanoma, i.e. pathological changes of the skin that have a greater likelihood of malignant transformation. Signs of malignant transformation of melanocyte nevi are: their rapid increase in size, the appearance of unpleasant sensations: pain, itching, tingling, rapid discoloration of the mole, the acquisition of black or blue color; surface change: elevation above the skin, appearance of bumps, intense hair growth, change in the shape of the spot when its contours become less clear, the spot or mole begins to get wet constantly, or there are periodic bleeding, appearance on the surface of the peeling skin, etc.

Thus, contradictory and unsystematized data from the literature; late diagnosis of malignant forms, lack of proper cancer prevention in both doctors and the public regarding skin cancer necessitate further study of this issue.

TOVKACH YU.V.

FEATURES OF THE MAXILLOFACIAL AREA

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Gunfire fractures are characterized by significant destruction of bone and tissue surrounding it. Muscle gaps are often accompanied by damage to large vessels and nerves. These fractures are mostly multicellular, often causing significant bone defects. Fractures of the bones of the skull are often complicated by damage to the internal organs. Types of displacement of the chips are related to the mechanism of injury and muscle contraction. The number of fractures are single and multiple. To solve the main problems in treating patients with fractures of the maxillofacial area, it is necessary to carry out the following main measures: repositioning – comparing or moving the chips to the correct position; immobilization - fixing the chips in the correct position for the period necessary for their consolidation (consolidation) with the help of conservative and operational methods; drug treatment is aimed at preventing complications during treatment; Physical methods of treatment - to improve tissue trophism and prevent complications. There are two types of regeneration: physiological and reparative. Physiological regeneration refers to the restoration of tissue structures of a healthy organism as they age and die. A clear example of this is the skin - a permanent detachment and removal of the epidermis. Physiological regeneration is a constant and very slow process that does not cause a stressful situation in the body. Reparative regeneration is the recovery of damaged or lost tissue. The degree and quality of the regenerative process in different tissues are different. The higher the differentiation of the tissue (nervous, muscular), the less it has the ability to restore its structure. Therefore, anatomical repair of the damaged area occurs due to replacement of the defect with the connective tissue - a scar. Damaged bone tissue is able to pass through a number of stages of the reparative process and relate its anatomical form, histological structure and functional suitability.

TOVKACH YU.V.

FEATURES OF BONE TISSUE IMPRESSION

*Bukovinian State Medical University,
Chernivtsi, Ukraine*

The bone tissue of any tooth can undergo dystrophic processes. Clinically, it can not manifest itself. In some cases, the presence of an atrophy of the jaw appears with any doctor's interventions conducted directly in the oral cavity. But there are occasions when young people with the help of which young jaw atrophy becomes

noticeable in connection with an early dropout of teeth and their long absence in the mouth. External signs of bone destruction can be pronounced.

Often, at the atrophy of the jaw there is an outcrop of the necks and distortion of the remaining teeth, which, in turn, can lead to the development of severe periodontal disease. In patients there are wrinkles in the area of missing teeth, there is a tingling of cheeks. This is because the facial muscles that attach directly to the bones are also exposed to adverse factors in the oral cavity. Many patients complain of difficult chewing food. Some have a tongue change.

You can restore the required bone tissue both upper and lower jaw in various ways. For these purposes, specific preparations of phosphorus and calcium can be used, as well as specially prepared and prepared bones of some animals or their own resources. In this case, bone tissue in most cases is taken from the area of the chin of the patient, where after some time the most complete regeneration of the structure of the jaw bone occurs. The new bone is formed within six months after the performed osteoplasty. Despite the length of the process, osteoplasty is popular among patients due to the small number of side effects and its high performance.

WOLF I.I., MAXIMOV O.O., CHEPYSHKO S.I.

USE OF HYDROXIDE-BASED PREPARATIONS CALCIUM WITH IODOFORM FOR TEMPORARY OBTURATION OF TEETH

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Chronic periodontitis in permanent teeth is usually asymptomatic. Many patients are treated at the onset of painful symptoms, which indicates an exacerbation of the process. To prevent complications of post-endodontic treatment and improve the effectiveness of therapy, it is recommended to use products that have good aseptic and regenerative properties.

Materials and methods. The study was conducted on the basis of the Educational and Medical Center "University Clinic" Bukovynian State Medical University of Chernivtsi. It was attended by 20 patients who went to the clinic with complaints of constant aching pain, aggravated by biting. All patients were diagnosed with exacerbation of chronic periodontitis. Pastes based on calcium hydroxide with iodoform were used as a temporary treatment for obturation.

Object. Analysis of the use of temporary obturation of the root canal with a paste based on calcium hydroxide with iodoform.

Results. The main tasks of temporary obturation are antiseptic effect on the root canal system of the tooth; local anti-inflammatory effect on the affected periodontium; stimulation of regenerative activity of periodontal tissues and adjacent bone of the alveolar process.

Preparations based on calcium hydroxide fully meet these requirements. Due to the high alkaline pH level (about 12), calcium eliminates the activity of pathogenic

microorganisms, improves the phagocytic activity of cells, provides bone regeneration, is biocompatible with the human body.

As an additional tool used iodoform - iodine-containing antiseptic drug with a broad spectrum of action. The mechanism of action on the body is related to the cleavage of the iodine molecule. The formed free iodine delays reproduction of pathogenic microflora, carries out destruction of bacterial toxins and organic substances which are allocated by the affected fabrics.

Positive results in the treatment of periodontitis after temporary introduction of the paste into the root canals of the tooth were obtained by all patients. The paste was applied for 1 month to diffuse drugs into the impassable part of the root canal. The analysis of radiographs performed after 14 days shows a positive dynamics of the process in the periapical area of the teeth in all patients, and 6 months after permanent filling of the root canals with epoxy resin paste was the restoration of bone tissue in the area of destruction and its complete ossification in all 20 patients.

Conclusion. Temporary obstruction of root canals with pastes based on calcium hydroxide with iodoform is appropriate in the treatment of exacerbation of chronic periodontitis of permanent teeth. This procedure gives positive results, ensuring the elimination of the inflammatory process and the restoration of the affected periapical tissues of the diseased tooth.

BATIG V.M., GLUSHCHENKO T.A.

**ACID-ALKALINE BALANCE OF ORAL LIQUID IN PERSONS FROM
PERIODONTAL DISEASES ON THE BACKGROUND OF
METABOLIC SYNDROME**

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Oral fluid plays a leading role in the proper functioning and maintenance of homeostasis of the entire periodontal tissue complex, is a mediator of the combination of its structures with the environment and an important nutrient substrate for the microflora of the oral cavity. Oral homeostasis is maintained due to acid-base balance, the main indicator of which is the pH of oral fluid.

The aim of the study. Investigate the acid-base balance in periodontal disease on the background of metabolic syndrome.

Materials and methods of research. 2 groups were formed for research: basic and comparative. The main group included 30 people with inflammatory-dystrophic lesions of the periodontium on the background of metabolic syndrome, the comparison group consisted of 30 people with periodontal disease without endocrinological pathology.

Determination of the pH of the oral fluid was performed using the Saliva Check test. Patients spat oral fluid into penicillin bottles for 5 minutes. Test strips from the Saliva Check laboratory test for pH determination were immersed in a

container with oral fluid for 10 seconds, and then compared the color of the test strips with the table from the kit.

Results and discussion. Normally, the number of hydrogen ions in the oral fluid is 5.8 - 7.4. The average oral pH of persons with periodontal disease on the background of metabolic syndrome was 5.61 ± 1.37 , which indicated acidosis, and was 1.2 times lower than this figure in persons with periodontal disease, not burdened with somatic pathology, which is not exceeded the reference values (5.97 ± 1.50 , $p < 0.01$). In patients of the main group, a shift of the number of hydrogen ions to the acidic side was observed in all age categories.

Dynamics of oral pH in individuals of the survey groups depending on age

Indexes	Age (роки)	Main group (n = 30) M±m	Comparison group (n=30) M±m
pH	25-34	5,73±1,42	6,10±1,54**
	35-44	5,62±1,36	5,98±1,49**
	45-54	5,49±1,33	5,84±1,47*
Average value		5,61±1,37	5,97±1,50*

Note: * $p < 0,01$; ** $p < 0,05$ – significant difference between the values of the main and comparative groups.

In the comparison group, a decrease in pH with age was also observed, but the trend was more moderate.

Conclusion. The predominance of acidosis in the oral cavity and the decrease in the protective properties of saliva becomes an important factor in creating a periodontal situation in the oral cavity.

ALAI J.S., MAKSIMOV O.O., CHEPYSHKO S.I

INFLUENCE OF COVID-19 DISEASE ON DENTAL POPULATION HEALTH

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In December 2019, a new coronavirus (SARS-CoV-2) was recorded, causing COVID-19. In March 2021, the World Health Organization called the COVID-19 outbreak a pandemic. Doctors and scientists around the world are actively working to solve it and alleviate the effects of this disease on the human body.

Many viral infections affect the condition of the oral cavity, and can cause various dental diseases, COVID -19 is no exception. Observations show that a large number of dental patients with COVID-19 of mild to moderate severity complained of gingivitis (gingivitis), exacerbation of chronic processes and tooth loss.

Materials and methods. Dental patients who applied to the Training and Treatment Center "University Clinic", and in the past suffered COVID -19 of varying severity.

The purpose of our work is the analysis of complaints of dental patients with a history of COVID -19, and the identification of dental diseases that he caused.

Results. During 2020-2021, 44 patients applied to the University Clinic, with complaints of deterioration of the general condition of the oral cavity, after the transfer of COVID-19 of varying severity.

Almost all patients complained of bleeding and gingivitis. Some noted painless loosening of teeth, and later their loss. Hypersensitivity of the teeth was in 60% of patients; complaints of bleeding gums were identified in 40% of patients; exacerbation of chronic processes was detected in 15% of patients.

In our opinion, these symptoms are associated with damage to blood vessels by the virus, including gums, the use of a large number of oral medications, decreased body resistance, and so on.

All patients received symptomatic treatment and recommendations.

Conclusions. COVID -19 adversely affects the condition of the human body in general, and the oral cavity in particular. For the period of illness and rehabilitation, it is necessary to ensure full oral hygiene, because this is the place where the virus first appears. It will take more than a decade to fully explore its effects on the oral cavity. It is recommended to replace the toothbrush more often than usual, because the villi are a source of various bacteria. Also during rehabilitation to carry out routine examinations at the dentist to monitor the development of the slightest negative processes in the oral cavity.

DROZDA I.I.

COMPARISON OF SALIVARY RATE AND VISCOSITY OF ORAL LIQUID IN ADOLESCENTS 15-18 YEARS OLD WITH CARIES, WHO LEARN IN DIFFERENT DIFFERENT

*Bukovinian State Medical University,
Chernivtsi, Ukraine*

The rate of saliva secretion and its viscosity have a significant effect on the development of hard tissue pathology. Deterioration of these indicators contributes to the rapid formation of dental plaque and changes in its microbial composition, which, in turn, leads to demineralization of enamel. Therefore, the study of the rate of salivation and viscosity of oral fluid in adolescents with caries is an important issue for further planning of preventive measures in them.

Under our supervision there were 540 teenagers who studied at school (107 people), college (317 people), university (116 people) in the city of Chernivtsi. The age of the subjects is from 15 to 18 years.

Studies of the rate of salivation show that among 15- and 16-year-olds attending school, the rate was higher among schoolchildren compared to college attendees ($p>0.01$), which can be explained by their better dental status: children enrolled the school had a compensated degree of caries activity, and college visitors - compensated, subcompensated and decompensated. The rate of salivation in schoolchildren improves from 15 to 16 years ($p>0.01$), and in college adolescents remains almost the same ($p>0.05$).

University students aged 17 and 18 had a rate of salivation rate that was normal and did not have a significant difference at different ages, but had a

significant difference compared to college visitors. The rate of salivation in college students decreased with age and had the worst result at 18 years.

The results of our study indicate the presence of a pronounced cariogenic situation in the oral cavity of adolescents who are studying in college, which is expressed in a decrease in the rate of salivation and increased viscosity of oral fluid. The indicators studied deteriorate depending on the age and degree of caries activity and reach their maximum in 18-year-old college students. Both salivation rate and oral viscosity were worst in adolescents with decompensated caries activity. The obtained results should be directed to the development of preventive measures in this contingent in order to increase the resistance of the hard tissues of the teeth to prevent the occurrence and development of caries in them.

TOVKACH Y.V., MOISIUK V.D.

GUNSHOT WOUNDS TO THE MAXIL-FACIAL AREA

*Bukovinian State Medical University
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Injury of maxillofacial, moreover, arises as a result of accidents on the hunt, at careless and despite the handling of firearms, suicide attempts, etc. For the past 1.5 year in Ukraine is marked by a sharp rise in the number of gunshot wounds during the revolutionary events in January-February 2014, the military action in the East of the country and as a result of the increase in the number of firearms (mostly illegal) at the hands of the people. The prevalence of maxillofacial injuries in today's world is connected with the criminalization community, the terrorist threats, the growing number of local military conflicts and civil unrest.

Injury of maxillofacial areas occur when shots with all types of firearms, oppositional parliamentary forces ammunition and various explosives and are characterized by significant injuries of tissues and organs, surgical treatment complexity and high risk of complications that threaten patient and caused his disability . Having first come across this kind of injury in the 14th century, the surgeons explained the special nature of the damage, their hard course of trend towards the development of complications with the presence of specific gases of toxic substances. An admitted method of treating such "poisoned" wounds was to sew hot iron and wounds pouring boiling oil. This incorrect practice was stopped only by the famous French surgeon Ambruz Paray, who published the first book on the "method of treating wounds caused by firearms in 1545.

So, in the years of the second world war, the share of maxillofacial surgery damage in the structure of health losses was 3.5-5%, during the war in Afghanistan and Chechnya is 8.5-9%. In the conflict in the East of Ukraine, the frequency of lesions of the head and neck is marked at level 39 - 40%, and in the fighting in Palestine and Lebanon, carried out special operations forces of the Israeli army, more than 54% . Timely, balanced and high-quality provision of surgical care is one of the basic conditions of life and the prevention of serious complications in wounded terms of conducting warfare. Terms of engagement, especially firearms, which are used in the East of Ukraine, radically different from such prominent gun conflicts. The frequency of the gunshot wounds of the head during the Great Patriotic War was 5.2 - 7%, during the warfare of today it is almost 19%.

Therefore, the primary surgical treatment of firearm wounds in the maxillofacial section, what should be the final volume and nature of intervention is seen as a sophisticated operation with deep checkup not only damaged tissues and organs, including the bones of the facial the skull, but also neighboring areas that were hit and shake the great force. The authors indicate that early aggressive surgical tactics with primary reconstruction provides the best aesthetic and functional results, and the level of infectious complications in terms of application of modern antibacterial drugs for remote and immediate recovery after gunshot wounds will probably not differ.

TOVKACH YU.V. MOISIUK V.D.
CONSEQUENCES OF JAW ATROPHY
Bukovinian State Medical University
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The bone tissue of any tooth can undergo dystrophic processes. Clinically, it can not manifest itself. In some cases, the presence of an atrophy of the jaw appears with any doctor's interventions conducted directly in the oral cavity.

But there are occasions when young people with the help of which young jaw atrophy becomes noticeable in connection with an early dropout of teeth and their long absence in the mouth. External signs of bone destruction can be pronounced. In patients there are wrinkles in the area of missing teeth, there is a tingling of cheeks. This is because the facial muscles that attach directly to the bones are also exposed to adverse factors in the oral cavity. Many patients complain of difficult chewing food. Some have a tongue change. Often, at the atrophy of the jaw there is an outcrop of the necks and distortion of the remaining teeth, which, in turn, can lead to the development of severe periodontal disease.

You can restore the required bone tissue both upper and lower jaw in various ways. For these purposes, specific preparations of phosphorus and calcium can be used, as well as specially prepared and prepared bones of some animals or their own resources. In this case, bone tissue in most cases is taken from the area of the chin of the patient, where after some time the most complete regeneration of the structure of the jaw bone occurs. The new bone is formed within six months after the performed osteoplasty. Despite the length of the process, osteoplasty is popular among patients due to the small number of side effects and its high performance.

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PROBLEMS OF NATIONAL MEDICAL INSTITUTIONS
MANAGEMENT IN THE COVID-19 PANDEMIC CONDITIONS
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Over the past two years, all health care facilities in Ukraine have been in crisis. The crisis in the management of medical institutions is caused mainly by a combination of two objective factors of uncertainty - the COVID-19 pandemic and the failure to complete medical reform. Managers at all levels of the national health

care system are in a difficult situation of urgent change in the vectors of management strategy. It should be noted that the inconsistency of the defined management strategy of medical institutions to the conditions of uncertainty increases the risk of losing the quality of medical services to consumers and the level of anxiety of medical staff and patients. According to the statistics of the Ministry of Health of Ukraine during the pandemic as of October 29, 2021. in Ukraine: 2,878,674 people fell ill with COVID-19, 2,421,495 people were cured, and 66,852 people died. Despite the fact that the number of deaths in Ukraine (2% of the number of patients with COVID-19) is not higher than the average mortality rate in the world, it does not allow managers at all levels of health care in Ukraine to calm down in search of effective strategic solutions in the fight against the pandemic and, in general - to improve the quality of the full range of medical services [1].

The analysis of recent publications of scientists allows us to identify problems in the management of national medical institutions, which have exacerbated the pandemic [2, 3]:

- Lack of certainty of quantitative parameters of needs in medical services, medical staff and other resources;

- Incompleteness of the first stage of the reform led to insufficient separation between the levels of outpatient care;

- The emergence of a large number of sources of funding for medical care;

- Unwillingness to manage change (there are additional financial risks and costs due to changes in the profile of patients, changes in funding models, changes in suppliers of medicines, medical devices);

- Insufficient possession of management competencies by heads of medical institutions;

- Lack of a clear division of regulatory functions in the management of the quality of medical services;

- Lack of new mechanisms for managing the "internal climate" of a medical institution: fatigue, physical and emotional exhaustion, stress from caring for dying patients, own illness, loss of relatives and friends have become a daily challenge for medical staff.

As management theorist Peter F. Drucker put it: "No matter where a manager works - in a private company, in a hospital, in a government body or in a trade union, at a university or in the army - he is expected to achieve exactly the results he needs. And this just means that it is expected to be effective "[4].

Thus, the global challenges of the pandemic, the deepening of the processes of informatization and technology, the socio-economic crisis and the need for change in the medical sphere of Ukraine raises a sharp question: how to carry out the strategic development of the hospital in such conditions? We believe that only the introduction of a strategic approach to the management of institutions allows to radically change the situation by improving the quality of medical services.

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ZAVOLICHNA TETYANA, NEDOBOY MYKOLA, CHORNEY DMITRO
STRATEGIC PLANNING OF MEDICAL INSTITUTIONS
IN THE UNCERTAINTY CONDITIONS

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In modern conditions of development of autonomy of medical institutions strategic planning is actual. According to Peter Drucker, it is a continuous process of making systematic decisions, taking into account the forecast of their impact on the future of the organization, carrying out systematic measures to implement these decisions and tracking the results of measures by organizing systematic feedback [1]. The strategic plan of the organization includes the following components:

mission - the meaning of existence and purpose of the organization;

vision - the desired future of the organization in 3 years (optimal planning horizon), reflects not only the internal state, but also changes in the environment in terms of successful implementation of the mission;

strategy - ways to implement the vision, taking into account the current strengths and weaknesses of the organization, as well as the characteristics of the environment;

strategic goals - ways to measure the implementation of strategies, because what we do not measure, we cannot control (axiom of management);

organizational structure - the reflection of the main structural units and positions in the organization, tied to the strategy;

plan - a plan for 3 years is created, where the implementation of strategic initiatives is signed (planning step - year), as well as a more detailed plan for the next year (planning step - month);

budget - derived from the plan for the year is the development budget, together with the budget of operating costs forms the annual budget of the organization.

On the positive side, the Ministry of Health is currently changing the system of financing medical services to change the system of providing them. This will

focus the planning of the health care system on the patient. However, according to experts, there are currently such "pitfalls" of autonomy of medical institutions as [2]:

- The State cannot influence the system of motivation of doctors: after the reorganization, an inefficient manager may leave the old tariff grid, pay for category and seniority;

- Most regional health departments charge excessive reports from institutions and systematically humiliate the heads of medical institutions for non-compliance with fake standards, as there are almost no honest statistics in Ukrainian medicine;

- Managers of the medical system are still trained on the materials of 10-15 years ago;

- Most medical staff have undergone professional socialization in the values of the old system;

- Chief physicians are administrators rather than managers, because they have never actually run an autonomous institution.

Therefore, it is extremely important to update the directions of the strategy for the development of medical institutions [3], taking into account the best international practices in times of uncertainty:

- introduction of tools for quality management of medical care, strengthening of new precautionary measures for patient and staff safety. It is effective in crisis situations together with the technique of comprehension;

- choosing new management ideas (such as "humble" leadership) and real-time learning allows you to make the right decisions when resources are limited;

- training medical teams in key practices such as shared awareness and informal communication improves adaptation to dynamic situations in COVID-19;

- focus on efforts related to psychological security and additional stress: managers of medical institutions at all levels should not only learn to identify early signs of psychological stress in employees, but also improve access to psychological counseling and other forms of support.

- medical institutions that publicly share their results and plans for the quality of care with patients and their families inspire trust and respect.

Determining the strategic perspectives of individual health care institutions requires not only compliance with market principles of management, taking into account the specifics of medical activities, but also taking into account those factors that really affect a particular medical organization. Health care is one of the important links in social production, which ensures the health of the population and the quality of the workforce. Therefore, this industry requires the introduction of new management mechanisms.

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NEW PARADIGM OF MEDICAL INSTITUTIONS MANAGEMENT

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Today in the field of health care in Ukraine there are significant transformations:

- transition to a new financing model;
- autonomy of medical institutions;
- competition between private and state / municipal medical institutions;
- increasing pressure on the world market of medical services and the pharmaceutical market;
- search for new management mechanisms.

Thus, medical institutions operate in a rapidly changing environment. The new paradigm of medical institution management is based on an active strategy of adaptation to changes in institutional, legal, economic, demographic, technical and technological factors [1]. The effectiveness of medical institution management is determined by the degree of implementation of this "proactive strategy", which aims to:

- 1) maximizing the value of medical services for patients by obtaining the best results at the lowest cost;
- 2) transition from the treatment process to the management of the medical institution and its clinical and other processes.

Analysis of the scientific literature makes it possible to identify the following classification features of the new management paradigm:

- The enterprise is considered as a "living organization" - an organic association of people [2];
- The strategic goal is to create competitive advantages and strategic objectives are the transformation of intellectual and knowledge assets and mental ideas in the process of providing services [3];
- The priority for the manager is the so-called "anthropological competence", and the process of performing strategic tasks - personalized / team [4];

- The development of strategic thinking is "a special type of systems thinking that combines rational and creative components, objective and subjective aspects, integrates various concepts and methods in a complex process of strategic activity" [5].

Implementation of the new management philosophy principles in the practice of health care management involves:

1. Introduction of management on a reflective basis, which provides for the flexibility of the organizational structure (attention to the autonomy of activities, delegation of authority, teamwork and project management).

2. Implementation of risk management mechanisms.

3. Management of innovations and stimulation of health care institutions innovative activity with the provision of individual initiative and development of leadership qualities.

4. Formation of management capital that ensures the effectiveness of the health care institution management system.

5. Stimulating the ongoing fundraising process (at the expense of the National Health Insurance Fund, local budgets, grants, business or charity).

Therefore, the new paradigm of medical institutions management is aimed at concentrating the range of efforts to create a medical service of higher quality or with new properties while reducing its cost. It involves the development of emotional and practical intelligence of the medical staff, competence approach, critical thinking and creative management.

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FEATURES OF MEDICAL SERVICES IN UKRAINE

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Services focused on human capital development are one of the most important in today's economic environment. Significant influence on the processes of economic growth not only at the individual but also at the macroeconomic level, have in particular education services, which form a larger share of human productive capital, and medical services, which ensure a high level of physical and moral health. Thus, an important catalyst for modern growth in the efficiency and stability of social production is medical services provided by the health care system.

The legislative definition of the term "medical service" took place with the entry into force of the Law of Ukraine "On Amendments to Certain Legislative Acts of Ukraine to Improve Legislation on the Activities of Health Care Facilities" dated 06.04.2017 № 2002-VIII. According to this Law, a medical service is a service provided to a patient by a health care institution or a natural person-entrepreneur who has a license to conduct business activities in medical practice. Medical service is a paid service paid for by its customer (service payer), the customer of medical service is not only the patient but also the state (through the National Health Service of Ukraine (hereinafter - NHSU), relevant local governments, other legal and physical persons. Art. 18 of the Law on Health Care stipulates that medical care under the medical guarantee program is provided free of charge (for patients).

In turn, the definition of the program of state guarantees of medical care is established in Art. 2 of the Law of Ukraine "On state financial guarantees of medical care" from 19.10.2017 № 2168-VIII. Within the framework of this program, the state guarantees the citizens of Ukraine full payment at the expense of the State Budget of Ukraine for the medical services and medicines they need, related to the provision of:

- 1) emergency medical care;
- 2) primary care;
- 3) secondary (specialized) medical care;
- 4) tertiary (highly specialized) medical care;
- 5) palliative care;
- 6) medical rehabilitation;
- 7) medical care for children under 16 years of age;
- 8) medical care in connection with pregnancy and childbirth.

Pay for the services provided by the program of medical guarantees at the expense of budgetary funds on the basis of agreements on medical care of the population concluded by providers of medical services with the main managers of budgetary funds.

Such agreements are concluded within the budget funds provided for health care for the relevant budget period, based on the cost and volume of medical services, the customer of which is the state or local governments.

Thus, the basis of funding for medical organizations is the budget funds coming from the program of state guarantees of free medical care for the volume of medical services provided by the medical organization to the population, therefore increasing budget funding is essential for sustainable work of the medical organization. However, it is necessary to actively seek additional sources of funding in the form of voluntary health insurance; to develop contractual relations with various structures of the territorial economic system; to create charitable foundations, to provide medical services to privileged categories of citizens; expand the range of paid medical services and implement other innovative projects of medical and other nature.

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