МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

М А Т Е Р І А Л И

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

У збірнику представлені матеріали 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) зі стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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Material and methods. Relevant literature about conditions that have a less direct association with EPI and about the role of pancreatic enzyme replacement therapy was found by searching databases. Searches of MEDLINE, BIOSIS Previews, Derwent Drug File, International Pharmaceutical Abstracts were performed to identify eligible literature.

Results. Clinical features of EPI include steatorrhea with or without diarrhea, weight loss, bloating, excessive flatulence, fat-soluble vitamin deficiencies, and protein-calorie malnutrition (American Gastroenterological Association (AGA), 2023). The coefficient of fat absorption is the gold standard for diagnosing fat maldigestion; however, it is not well accepted by patients and laboratory personnel. The measurement of the fecal elastase is considered as the gold standard for EPI diagnosis (Lindkvist B., 2018). Cross-sectional imaging (computed tomography scan, magnetic resonance imaging, and endoscopic ultrasound) cannot identify EPI, although they play an important role in the diagnosis of benign and malignant pancreatic disease (AGA, 2023). In case of inoperable pancreatic cancer EPI develops in 66%-92% of patients. EPI occurs in patients with type 1 (26%-57%) and type 2 diabetes (20%-36%) and is usually mild to moderate in severity; by definition, all patients with type 3c (pancreatogenic) diabetes have EPI. In a large-scale study, correlations between exocrine insufficiency and early onset/longer duration of diabetes, insulin use, and lower body mass index (BMI) have been demonstrated (Hardt PD et al., 2013). In untreated celiac disease, EPI occurs in 4%-80% patients, but usually occurs on a gluten-free diet. Pancreatic function tests should be considered if there is persistent diarrhea or steatorrhea despite a gluten-free diet or if there are signs of overt malnutrition. The pathophysiological mechanisms of EPI in celiac disease may include a defective postprandial response to food by an atrophic upper intestinal mucosa. Patients on a gluten-free diet with low fecal elastase levels should receive PERT (Nousia-Arvanitakis S et al., 2006). Patients with inflammatory bowel disease are at an increased risk for developing EPI, particularly if they have≥3 daily bowel movements, loose stools, and a history of surgery. Autopsy studies have found pancreatic lesions in 38% of patients with Crohn's disease and 53% of patients with ulcerative colitis without prior evidence of pancreatitis. Pancreatic autoantibodies, duodenal reflux, and reduced secretory hormone secretion are possible mechanisms for the development of EPI in Crohn's disease (Vikesh K Singh, 2017).

Conclusions. EPI is often misdiagnosed, and, as a result, patients are not properly treated. There is an urgent need to increase awareness of secondary pancreatic exocrine insufficiency and the importance of its adequate treatment. There is an urgent need for clinical studies to understand the validity and nature of associations between EPI and medical conditions beyond those in which mechanisms have been proven and to explore the potential role of PERT.

Palichuk Yu.I.

THE ROLE OF INDEPENDENT CLASSES IN PHYSICAL EDUCATION IN STRENGTHENING THE HEALTH OF HIGH SCHOOL STUDENTS

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Introduction. The analysis of the scientific and methodical literature revealed a tendency towards a constant deterioration of the state of health of school-age children, which is due to a lack of physical activity during the period of study at school. This problem is of particular importance for high school students due to the need to prepare them for future educational activities. Therefore, there is a problem of finding effective technologies, organizing and conducting independent physical education classes for high school students .

The aim of the study. To introduce the technology of strengthening the health of high school students in the process of independent classes in physical education.

Material and methods. The research was facilitated by the following methods: theoretical (literature analysis); empirical (pedagogical observation, questionnaires, analysis of results, conversations); pedagogical experiment.

Results. Determining the motivations of older teenagers for independent physical education shows that the most important motive for both boys (27.8%) and girls (40.0%) is to improve their

body shape, i.e. fitness, as it gives a desire to look beautiful and attractive. Further by rating there is motive to improve one's state of health, active rest and exercise, communication with friends, and the least popular motive for independent physical exercises (11.1%) as well girls (6.3%) have it the motive of achieving a high positive result.

The study of high school students' interests in independent classes shows that the most popular of these are: among girls - basic (classical) aerobics, fitball-aerobics, pop-skipping, yoga, pilates; for boys – athletic gymnastics, cross-country running, crossfit, cycling and cross-country swimming.

Testing of the theoretical preparation of high school students at the beginning of the study revealed a low level of knowledge in the subject "Physical culture". 52.3% of 16-year-old girls, 41.7% of 17-year-old girls, 50% of 16-year-old boys, and 43.7% of 17-year-old boys were theoretically unprepared. The greatest complexity was caused by questions from "Basics of forming a healthy lifestyle" and "Organization of independent physical education classes."

The results of the study of the level of physical activity show that most of the daily time of schoolchildren is occupied by a small level of physical activity: 16-year-old girls - 46.5%, 17-year-old girls - 46.7% 16-year-old boys – 44.7%, among 17-year-old boys - 44.8%. The share of the high level of physical activity occupies only 1.2% of girls 16 years of age, 1.5% of girls 17 years of age, 1.5% of boys 16 years of age, and 1.7% of boys 17 years of age - of the total daily time. At the same time, the energy consumption figure indicates a deficit of physical activity in 16- and 17-year-old boys, which amounts to 471.9 and 454.5 kcal, respectively.

Conclusions. The implementation of the innovative technology of strengthening the health of high school students in the process of independent physical education contributed to the improvement of indicators of the state of health, physical development, physical preparation and physical activity, which provides a basis for its practical implementation into the system of physical education of high school students.

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POLARIZATION-PHASE INTERFEROMETRY OF SUPRAMOLECULAR NETWORKS IN DEHYDRATED BLOOD FILMS OF PATIENTS WITH COVID-19 IN ANAMNESIS

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Introduction. A number of biophysical methods are known that investigate the processes of transformation of laser radiation parameters by optically anisotropic biological layers and the formation of polarization structures in microscopic images of biological tissue and fluid samples. These methods analyze how biological layers affect the polarization state of light, providing insight into their structural and functional properties.

The aim of the study. To improve the method of polarization-phase interferometry of supramolecular networks in dehydrated blood films of patients with a history of COVID-19 by using multi-channel polarization formation and analysis of a series of interference patterns of laser microscopic images, followed by algorithmic digital holographic reconstruction of layer-by-layer phase maps of the dehydrated blood film sample. This enhancement aims to improve the accuracy and expand the functional capabilities for evaluating the transformation of the polycrystalline component of the biological layer.

Material and methods. To assess the changes in the layer-by-layer phase maps of the polycrystalline component in polycrystalline blood films using a polarization-interference device, we conducted multi-channel laser irradiation of the test sample, formed interference patterns, and measured the polarization-filtered intensities of the interference distributions. This was followed by algorithmic digital reconstruction of the layer-by-layer phase maps of the supramolecular networks. Changes in the polycrystalline structure of the blood films of patients with a history of COVID-19 were evaluated based on the central statistical moments of the 1^{st} to 4^{th} degrees, which characterized these distributions.