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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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.

Pavliukovych N.D.

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.

Two groups of dehydrated blood film slides were used as samples: Group 1 included patients without a history of coronavirus disease, and Group 2 consisted of patients who had COVID-19 in the past.

Results. The table presents the central statistical moments of the 1st to 4th degrees, characterizing the integral diffuse phase maps of the supramolecular networks in these samples.

Table

Statistical structure of integral diffuse phase maps

Statistical moment	Group 1	Group 2
Mean	0,085	0,097
Variance	0,036	0,044
Skewness	0,31	0,24
Kurtosis	0,42	0,34

The differences increased nearly by 3 times – the central statistical moments of the 3rd and 4th degrees differ by 2,1-2,9 times.

Conclusions. Thus, the proposed method enhances the functional capabilities and improves the accuracy of detecting changes in the phase anisotropy of polycrystalline films of biological fluids by statistically monitoring changes in the coordinate structure of algorithmically reconstructed layer-by-layer phase maps of supramolecular networks in dehydrated blood films. For the first time, polarization-interference recording and polarization filtering of the interference distributions of laser microscopic images have been applied, along with statistical monitoring of changes in the algorithmically reconstructed layer-by-layer coordinate distributions of phase shifts in the polycrystalline architecture of supramolecular networks in dehydrated blood films.

Prysiazhniuk I.V.

CHANGES IN CYTOKINE PROFILE INDICATORS IN PATIENTS WITH CHRONIC NON-CALCULOUS CHOLECYSTITIS AND HYPOTHYROIDISM

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Introduction. According to various estimates, the prevalence of clinical and subclinical forms of hypothyroidism ranges from 1,4% to 8,0% of the general population. Studies have shown that cytokines of the IL-1 family affect the processes of absorption and secretion in the gallbladder, in particular, Il-1β, changing them can cause cholelithiasis. Il-1β also potentiates the properties of Il-6 in reducing the contractivity of smooth muscles and the development of insulin resistance. At the same time, the expression of pro-inflammatory Il-1β increases in patients with hypothyroidism. TNF-α causes dysfunction of smooth muscle contraction of the gallbladder, absorption processes, lipid peroxidation in it and contributes to the development of insulin resisstance and increases the secretion of mucin, which, under conditions of inflammation of the gallbladder wall. TNF-α also affects the function of the thyroid gland, which is due to the presence of TNF-α receptors in its parenchyma.

The aim of the study. To investigate the features of pro- and anti-inflammatory cytokines in patients with chronic non-calculous cholecystitis and hypothyroidism and their relationships with blood biochemical parameters and lipid profile parameters.

Materials and methods. 72 patients with chronic non-calculous cholecystitis and hypothyroidism were examined (experimental group) and 30 patients with chronic non-calculous cholecystitis with normal functional activity of the thyroid gland (comparison group) were examined. The control group consisted of 20 practically healthy individuals representative of the studied groups in terms of age and gender. The indicators of the biochemical blood test that were studied included: total bilirubin and its fractions, uric acid, total protein and albumin, urea and creatinine, aspartate aminotransferase (AST), alanine aminotransferase (ALT), lactate dehydrogenase (LDH), gammaglutamyl transpeptidase (GGTP), alkaline phosphatase (AP). Among the parameters of the lipid spectrum, the content of total cholesterol, triacylglycerols, cholesterol of