most common reasons for the decline of adaptive resources of the organism according to many authors. Another important problem of the medical students health is a chronic emotional anxiety state. Kinesiologist J. Carson Smith believes that „physical activity is a kind of effective buffer for emotional influence". Therefore, the analysis of the influence of adequate physical exercises on student's psychophysiological state is urgent and important.

Aim. Objective: to study the character of the influence of the dosed physical activity on the level of situational and reactive anxiety of medical students.

Materials and methods. The study involved 47 students of the Medical University, this were young men at the 18-20 years. Depending on the dose of physical exertion, students were divided into two groups. Students of the first group were offered the total amount of exercise for 3 hours per week. Students of the second group exercise for 6-9 hours per week. For the dosed physical activity, 1-1,5-hour course of aerobic exercises (running) were selected. The investigation lasted for 3 months. According to the objectives of the experiment we evaluated: 1) the vegetative status of the student's organism according to the frequency indicators of cardiorespiratory system with gradual increasing of the physical exertions on the bicycle ergometer; 2) emotional state of anxiety using the test of the level of personal and situational anxiety by Spielberg- Haning at the beginning of the study and after 12 following weeks.

Results and discussion. The results showed that the adaptive capacity of the cardiorespiratory system in young men with low levels of motor activity and high levels of personal anxiety (group № 1) was significantly lower than in the students of group № 2. It was founded that 56,4% of students of group № 2 and 35,7% of students of group № 1 had the harmonious physical development. Students with low levels of motor activity had the level of personal anxiety 63,5 ± 1,5, that was significantly higher than between the students of the group № 2, who had 34,5 ± 1,2. Students of the group № 1 had the high level of introversion and neuroticism, which indicated a state of anxiety or reactive depression. According to the results of Spielberg- Haning test, 38,4% of the students showed a decrease of the level of anxiety in the first 2 weeks after the exercise, 25,8% in a month, 17,7% in 1,5 months, 11,3% in 2 months, 5,3% after 2,5 months, and only 1,5% showed no significant changes in the studied parameters during the experiments.

Conclusion. Daily regular exercises help to reduce the level of situational and reactive anxiety, which is a reliable method of preventing the development of chronic psycho-emotional state of anxiety and depression. Students who were running every day about for one hour noted the increase of the level of psychological and emotional stability, extraversion and motivation intensified, such character traits as self-discipline and self-control became apparent. It had a positive influence on learning and cognitive activity of students.

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MELANOMA

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Introduction. Today modern science knows incredibly many diseases that affects outer integument of human body. Really, our skin is that organ which most of all is

susceptible to different types of damage. And, first of all, thanks to its great size. Let's look, why the skin is so important part of human body and what does it look like.

Aim. To describe malignant melanoma tumors.

Results. Skin is an outer cover of human body. This is the biggest human organ that weights 6 kg and has square of surface about two square meters. Skin has three layers: epidermis, derma and hypodermis. Derma and epidermis are alsolayered structures. Derma contains of papillary layer and reticulated layer. Epidermis contains of a lot layers that can be united in main five ones: basal layer, prickly layer, granular layer, shining layer and horny layer. Skin has many nerve endings and most of them lay in hypodermal layer. Skin develops from two germ layers: from ectodermal layer develops epidermis, from dermatoms develops derma and hypodermis. After pinching of the neural tube the last ectoderm becomes skin ectoderm and forms an epidermis of skin.

On the base of dermatomes of somites of mesoderm develops the base of skin — derma. Mesoderm of myotome loosens and becomes mesenchyme that in prefetal periodstarts differentiate to connecting tissue. Epidermis differentiates to separate layers, in derma forms fascicles of collagen fibers. Skin implements many different functions among which: protection, because it protects an organism from mechanical chemical and other outer impacts; excretion, because it excretes sweat and sebum through pores; thermoregulation; breathing, because it absorbs oxygen and storing, because it stores lipids and fats it hypodermal layer.

Melanoma perhaps is the most serious of skin diseases that represents a form of skin cancer. Melanoma is cancer of the melanocytes – cells that produce melanin – pigment that protects skin from bad influence of ultraviolet rays. There are two main reasons of melanoma: 90% of all melanomas are linked to UV radiation (sun exposure); 8% are due to chromosomal abnormalities.

As shows results of University of Colorado Denver, more susceptible to melanoma are old males that were getting a lot of ultraviolet rays. Melanoma is also the most spread oncology of young people.

There are six stages of melanoma, different to degrees of severity. On 0 stage the tumor is found only on the top layer of the epidermis. Treatment is by surgery. On I A stage the tumor has not spread to the lymph nodes or distant organs. Also treatment by surgery. On II A stage tumor penetrates the deep dermis. II B stage: additional tumors called "satellites" may be found within 2 centimeters of the original tumor. III A stage: melanoma has spread to the nearest lymph node. IV A stage: the melanoma has spread to other organs such as the lung, liver, or brain, or to distant areas of skin or lymph nodes.

An ability of favorable outcome is depending of the stadium. First stage: 5-year survival is about 97 percent. 10-year survival – about 95 percent. Second stage: 5-year survival is about 81 percent. 10-year survival is about 67 percent. Third stage: 5-year survival is about 59 percent. 10-year survival is about– 43 percent. Fourth stage: 5-year survival is about 15 to 20 percent. 10-year survival is about– 10 to 15 percent.

Conclusions. At first sight, there is very simple to protect ourselves from developing of melanoma we just mustn't have sun bathes in the midday, but as shows statistics with 8% of melanomas accidents are caused by genetics. The second ones are something that we still cannot prevent. To sum up, melanoma is a serious skin cancer that can affect different organs. There are four stages of melanoma, different for severity. To prevent development

of melanoma, we should protect our skin from straight sun rays and regulate quantity of mutagenes in our life.

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FROM MACRO- TO MICROCRYSTALS

Introduction. Crystals are all around us. Crystals are solids having "repetitive", so-called, periodic structure forming regular polyhedra. Arrangement of particles is described as a crystal lattice. This is a three-dimensional model of arrangement of the particles in the crystal. The crystal lattice can be thought of as an array of “small boxes” infinitely repeating in all three spatial directions. Such a unit cell is the smallest unit of crystal that contains all of the structural and symmetry information to build-up the macroscopic structure of the lattice. Crystalline compounds can form one single crystal. However, most crystalline compounds are composed of many small crystals, i.e. they are polycrystalline. Single crystals are usually obtained artificially. Sizes of crystals vary from microscopic to a few meters. Scientific activity of Medical and Bioorganic Chemistry Department is devoted to the investigation of medicines which contain caffeine. Caffeine (1,3,7-trimetylxanthine) is widely used in medicine. It is applied in diseases involving suppression of central nervous and cardiovascular systems, brain vascular spasm (migraine), poisonings with drugs which depress the central nervous system, for increase of organism resistance to mental and physical stress, etc. Caffeine promotes the analgesic effect of nonnarcotic analgesics. Moreover, caffeine plays stimulating role in a human organism, because it makes the liver to release sugar in bloodstream. Caffeine postpones fatigue and increases human endurance. Also caffeine increases level of serotonin concentration, so it acts as a good psychostimulator. Caffeine consumption increases alertness, ability to concentrate, problem-solving ability, wakefulness, so caffeine plays “cognitive” function.

Aim. The aim of the work was to grow artificially, besides macro crystals of other chemical substances, the microcrystals of caffeine.

Materials and methods. Crystals can be obtained during the crystallization of melt, solution or gas. In laboratory crystals are usually obtained from solutions. Crystals of solute begin to precipitate upon cooling of saturated solution, as solubility decreases with lowering of temperature. In our experiment we used condensation method. We put some quantity of black tea in a small vessel. On this vessel we put objective glass and heated it.

Results. By cooling method we obtained crystals of blue vitriol ($CuSO_4$), table salt (NaCl), ammonium dihydrogen phosphate ($NH_4H_2PO_4$), sucrose ($C_{12}H_{22}O_{11}$), potassium alum ($KAl(SO_4)_2\ 12H_2O$), and needle-like crystals of caffeine which are so small that they are invisible to the naked eye and can only be observed under a microscope at a 100-fold magnification. In experiment with caffeine, we obtained white matt coating on the surface of objective glass. On verification with electronic microscope the crystals appeared to be crystals of caffeine.

Conclusions. Crystals of various chemicals, including caffeine microscopic crystals, which possess pharmacological activity, can be grown in vitro.