joints area – 60-67% of supporting-motor apparatus. Given the significant predominance of musculoskeletal injuries knee, ankle, and ligaments of the study apparatus this pathology is extremely relevant.

Purpose of the study: to analyze the role of anatomy and physiology for rehabilitation of injured large joints; to make a research of features of physical therapy, modern methods of recovery the injured major joints (knee, hip, elbow, shoulder) after infractions, depending on their specifics of their structure and functioning.

Materials and methods:: research and analysis of modern scientific and scientific methodological literature from this question; to consider the tasks, forms and methods of physical therapy after injuring of major joints.

Results of the study and their discussion: In the last few years, one of the most effective methods of joints reconstruction after their injuries is arthroscopic surgery. Most researchers recommend the application early ways and methods of physical rehabilitation to reduce complications and improving the quality of motor function recovery. Personal scheme of physical rehabilitation selected by (based on) in advance diagnosed individual Patients data. It could consist both one method and complex approach. Application modern equipment and the latest methods of physical therapy (decompression therapy, neuromuscular activation (Neurac), mechanotherapy, and physiotherapy) provides recovery of the lost or damaged function of musculoskeletal apparatus. In order for such actions to produce the desired results, all exercises must be performed in conditions of complete absence of pain throughout the period physical rehabilitation.

Conclusion: Based on the study of literature, it is determined that use of ways of physical therapy in the rehabilitation of major joints, after their injuries, contribute to the elimination of swelling and pain, recovery of full-distance amplitude in movement of injured joints.

BEHAVIOR IN ANIMALS WITH EXPERIMENTAL HYPOTHYROIDISM

Hammud Doha
Scientific supervisor: assoc. prof. Kononenko A.G.
National University of Pharmacy, Kharkiv, Ukraine
physio@nuph.edu.ua

Introduction: Thyroid diseases are a common human pathology and occupy a leading place among all diseases of the endocrine system; with this pathology has certain gender features: women are 5-10 times more likely than men are. Physiological and pathophysiological mechanisms of disorders of the psycho-emotional sphere include different representations at the system level. A meta-analysis of epidemiological data has demonstrated that hypothyroidism is a risk factor for deep depression. It is also known that hypothyroidism and / or its effects disturb the processes of angiogenesis in the central nervous system, eating behavior, thermogenesis and autonomic functions, which provokes the clinical manifestation of depressive disorders.

Aim: study of changes in the functional state of the central nervous system in rats with experimental hypothyroidism.

Materials and methods: The study was carried out on male rats weighing 150-180 g. In order to simulate experimental hypothyroidism, animals received a 0.05% solution of mercazolyl instead of drinking water for 13 days. On day 14, the behavior of rats in the “open field” test was investigated. In the course of visual observation, the following behaviors were recorded: the number of squares crossed (horizontal motor activity or locomotion), the number of hind paws, or vertical motor activity, the number of openings (hole exploratory behavior); number of grooming acts (cleansing of one's own body: scratching, licking and biting), number of urinations and defecations (manifestation of emotionality).

Results and discussion: The results of the study showed that with hypothyroidism there is a decrease in research activity and emotionality. Thus, in hypothyroid animals compared to the control group, horizontal motor activity decreased by 35.5%, vertical motor activity – by 70%, the number of peering holes – by 23%, the number of grooming acts – by 76%, the number of urinations and defecations – by 22%.

Conclusions: The development of the hypothyroid state leads to inhibition of the functionality of the central nervous system in rats, which is manifested in a change in behavior, namely in the decrease of research activity and manifestations of emotionality.

THE STUDY OF TOXIC PROPERTIES OF COSMETIC CREAMS IN *IN VITRO* TESTS

Nagornay A.O., Petrenko A.V.
Scientific supervisor: prof. Maloshtan L.M.
National University of Pharmacy, Kharkiv, Ukraine
physio@nuph.edu.ua

Introduction: The study of the toxic properties of medicines and cosmetics is an important component in the development and study of their pharmacological properties and safety. Prolonged use of cosmetics can cause damage of the skin and its derivatives, as well as adversely affect and impair systemic function of the internal organs. Cosmetics that a person uses during prolonged time can cause allergic reactions that lead to nettle rush, dermatitis and eczema. Therefore, it is appropriate and relevant to study the toxicological properties of cosmetics.

Aim: study of toxicological properties of cosmetic face creams of firms: D'OLIVA, Bioderma, Uriage in *in vitro* experiments using *Allium cepa*.

Materials and methods: *Allium cepa* was germinated in Petri dishes with the addition of 1% aqueous solution with cosmetic face creams (D'OLIVA, Bioderma, Uriage) for three days. On the third day, the size of the roots sprouted in the test medium was measured. The study samples were divided into 4 groups: group I – control (distilled water + *Allium cepa*); Group II – D'OLIVA in the aquatic environment + *Allium cepa*; Group III – Uriage in the aquatic environment + *Allium cepa*; IV group – Bioderma in aqueous medium + *Allium cepa*. Six bulbs were used in each experimental group. Rate of growth of onion roots (*Allium cepa*) was used as toxicity indicator.

Results and discussion: On the third day of the experiment, the bulbs were taken and their rate of root growth was investigated in the test medium. In group 3 with the use of Uriage cream the root growth is not observed. In-group 2, the rate of root growth was 30% compared with the control group with D'OLIVA cream. In-group 4 where Bioderma cream was used, 50% root growth was observed.

We also measured the length of the roots that bulbs sprouted during the experiment. It noted that the most actively germinated roots using D'OLIVA, they germinated more than the control by 115%, and the root growth in solution with Bioderma cream was 50% of the control group. Measurement of roots in-group 3 with Uriage cream was not performed due to lack of root growth.

Conclusions: As root growth indicates non-toxicity of face creams, it can be concluded that sample 2, which was grown on the basis of D'OLIVA cream, was not toxic at all. Sample 3 on the basis of Uriage cream was the most toxic of the samples, so in the next stage we will not use it in the experiment.