and indirect effects on the integrity of the β-cells of pancreatic islets of Langerhans. The increased concentration of glutamate is present in all tissues with DM type 1 and type 2 DM.

Material and Methods. Type 1 DM was chemically induced in male Wistar rats by intraperitoneal injection of streptozotocin. The purpose of this study was to determine the level of glutamate in the liver of diabetic rats and to compare it to the level of glutamate in the liver of diabetic rats post-treated with different concentrations of polyphenols olive leaf extract (512, 768 and 1024 mg/kg). The concentration of glutamate was determined spectrophotometrically in 20% liver homogenate while polyacrylamide gel, sodium dodecyl sulphate (SDS-PAGE) was used to separate the proteins and to determine the difference in the expression of the same in the experimental groups.

Material and Methods. The increased levels of glutamate were established in the liver of diabetic rats. In groups of animals with short diabetes (8 days), glutamate concentration was proved to be lower compared to a group of animals with long-term diabetes (30 days). Furthermore, the results showed a significantly lower concentration of glutamate in the liver of post treated animals with olive leaf extract in a dose-dependent manner.

Conclusions. The results of this research lead to the conclusion that the olive leaf extract can be used in the treatment and co-treatment of type 1 DM and thus narrowing the consequences and complications that occur as a result of this multi-functional disease.

THE INFLUENCE OF ANTHROPOMETRIC DATA ON THE DEGREE OF NARROWING OF THE LATERAL INTERVERTEBRAL FORAMEN OF THE LUMBAR-SACRAL SPINE IN THE PRESENCE OF INTERFORAMINAL LIGAMENTS

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Key words: *intervertebral channels, constitution type, soft stroma, spinal cord*

Aim. To prove participation of a soft stroma of intervertebral channels of lumbosacral department of a backbone in development of an ischemia of the bottom departments of a spinal cord on the basis of studying of topographical anatomy of contents of channels at people with various type of a constitution.

Material and Methods. Contents of 620 lateral intervertebral channels of lumbar department of a backbone are studied. The material was distributed on groups, depending on constitution type. In preparations taken from people with dolichomorphic structure type have the least sizes (basically width of an aperture), and in preparations taken from people with brachymorphic type of a structure — the sizes the greatest.

Results and Discussion. In 54.84% in the field of lateral intervertebral channels of lumbosacral department of a vertebral column are found out — intraforaminal ligaments. 50% — mesomorphic addition type, 26.47% — dolichomorphic and 23.53% — by brachymorphic. Histologically found out formations have copular structure. The copular apparatus reduces free space round the vessels which are passing in the intervertebral channel, in limits from 44.97 to 79.84% that can lead to a compression of the contained intervertebral channel both at a trauma, and at is degenerate-dystrophic diseases of a backbone. The worst conditions for contents of intervertebral channels are framed at people with dolichomorphic type of a structure of a body in the presence of plural intraforaminal ligaments.

Conclusions. Such combination based on results of given research, can meet at 25.5% of people with dolichomorphic type of a structure of a body.

BIOMECHANICAL METHODS IN A COMPLEX ASSESSMENT OF THE MORPHO-FUNCTIONAL STATE OF THE HUMAN SKELETON IN NORMAL AND PATHOLOGICAL CONDITIONS

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Key words: *skeleton, anatomy, biomechanics, trauma*

Aim. A complex study of the structure and biomechanical properties of tubular bones, ligaments of the spine and individual joints of the human of was carried out.

Material and Methods. Investigation of the structure and biomechanical properties was carried out on fetus, newborns and adults. Functional biomechanical tests were evaluated in healthy and patients with a fracture of the diaphysis of tubular bones. In the study of morphology, anthropometric, anatomical and histological methods of investigation were used. To assess the biomechanical parameters of the ligaments, elastic-strength properties were studied. The mechanical properties of the bones were studied by analyzing the responses of functional biomechanical tests. To do this, the tubular bones were externally affected by the sound frequencies.

Results and Discussion. As a result of the study, it was found that the elastic-strength properties of the ligaments of the spine and the joints of the extremities depend on the features of their internal structure: the form and the mutual arrangement of the fibrous elements.

Conclusions. The answers of functional biomechanical tests also depend on the external shape of the bone. The relationship between the bone biomechanical properties from human somatotype has been established.

JUSTIFICATION OF THE OPERATIVE INCREASE OF MAMMARY GLANDS

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It is hardly possible to find a woman who would never have thought about correcting the shape of her breasts. Someone would like to just pull it up, someone — to do less, but most of the ladies, dissatisfied with their forms, would like to still increase it. Moreover, breast augmentation, or augmentation of the mammary glands, is one of the most popular plastic surgery in the world. The operation to increase the mammary glands is shown mainly to women who have a small breast size, which often leads to discomfort, dissatisfaction with themselves, psychological problems. Also, many women after pregnancy, breastfeeding or strong weight loss note that the breast has significantly changed shape, has become smaller or sagged. This problem also leads to psychological problems, a woman begins to feel shy of her body, intimate problems may begin, and cases of severe depression develop. In this case, the woman also comes to the rescue of mammoplasty. Based on the knowledge of topographic anatomy, the blood supply of the mammary gland is carried out through the branches of the internal thoracic artery, lateral thoracic artery and 3–7 posterior intercostal arteries from the thoracic aorta. And the perforating branches of the intercostal arteries take an insignificant part. The venous network consists of a surface and a deep system. Deep veins accompany the arteries and flow into the axillary, internal thoracic, lateral thoracic and intercostal veins, partly into the external jugular vein. From the superficial veins of the mammary gland, blood flows into the dermal veins of the neck, shoulder, side wall of the chest and veins of the epigastric region. Surface and deep veins form plexuses in the thickness of the gland, skin, subcutaneous tissue and widely anastomosed with each other, with the veins of neighboring regions and the opposite breast. Therefore, the enlargement of the mammary glands with the help of implants can be performed through the incisions in three places: in the crease under the breast; on the margin of the areola; in the armpit area. Modern breast implants are a hard shell made of medical silicone with a smooth or textured surface. This shell is filled with gel or saline solution. The shape of the breast implants can be round or drop-shaped — the first create a pleasant roundness in the upper chest, while the second repeat the natural forms. Breast augmentation can be combined with their lifting-the need and possibility of combining these two operations is discussed during a consultation with the doctor.

ANATOMICAL SUBSTANTIATION OF ABDOMINOPLASTY

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Key words: *abdominoplasty, correction, anatomy*

Abdominoplasty is an operation to correct abdominal contours. Most often the stomach is stretched by pregnancy or by fast weight gain. And if diet and exercise in most cases help get rid of excess fat, stretched muscles and skin to return to the original state with their help is not always possible. And for many women, this is causing serious depression. They can no longer freely buy the desired clothes, undress on the beach and in the pool, etc. Improve their quality of life called abdominoplasty — its effectiveness when used for this purpose is confirmed by research. Thanks to abdominoplasty, the abdomen decreases in volume and becomes flat, the waist is formed. The operation on the plastic of the abdomen begins with a transverse incision above the pubis. The incision is made along the bikini line, so that later the scar could be hidden under the underwear. After this, the skin flap is peeled to the costal arch, highlighting the navel. Having thus opened the rectus abdominis muscles, the surgeon sews them in a new position, forming a waist. Excess skin with subcutaneous fat is removed. The navel is formed anew to move it to a new place on the skin flap that has been peeled off. Sometimes plastic surgery is performed only in the lower abdomen without transfer of the navel — this operation is called «mini-abdominoplasty». Also abdominoplasty can be combined with liposuction.

ABOUT EDUCATIONAL PROCESS PROVIDING AT THE DEPARTMENT OF TOPOGRAPHIC ANATOMY AND OPERATIVE SURGERY OF KSMU

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Key words: *education, corpses, anatomy, preparation*

The department of topographical anatomy and operative surgery has arisen for joint teaching of applied anatomy and operative surgery on corpses. Since the beginning of the 20th century the program