

МІНІСТЕРСТВО ОСВІТИ ТА НАУКИ УКРАЇНИ  
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ  
МЕДИЧНИЙ ІНСТИТУТ



**АКТУАЛЬНІ ПИТАННЯ**  
**ТЕОРЕТИЧНОЇ ТА КЛІНІЧНОЇ МЕДИЦИНИ**  
**Topical Issues of Theoretical and Clinical Medicine**

**ЗБІРНИК ТЕЗ ДОПОВІДЕЙ**  
V Міжнародної науково-практичної конференції студентів та молодих вчених  
(м. Суми, 20-21 квітня 2017 року)

Суми  
Сумський державний університет  
2017

**Materials and methods of a research.** A number of works, prisyacheny danniya to subject were studied. So the mineralization of bones increases with age and reaches the maximum size up to 50 - 60 years, an other authors claim that this process increases continuously during all life. As opposed to it it is considered that the amount of mineral salts, since 16 years, gradually decreases from 1,21 mg/mm<sup>3</sup> to 1,14 mg/mm<sup>3</sup> up to 70 years. Other scientists who revealed that osteoporosis is inherent in all centuries since youthful years and by an extreme old age adhere to the same thought.

**Results.** At the same time M. N. Pavlova and A. N. Polyakov established that increase of process of a mineralization happens from a sort up to 25-30 years, relative stabilization in the period from 30 to 45 years and subsequently its gradual decrease then is observed. Considerably expands the range of terms relative to constancy of a mineral saturation of bones O. M. Pavlovsky. He considers that the pitch of a mineralization comes at the age of 15-16 years and rather stable up to 60 years.

**Conclusions.** Therefore, it is possible to say that process of increase of a mineralization of a skeleton at children's and youthful age which is noted by one and all authors in the century period taken by us is not smooth, and rather accurately displays those functional changes which happen in the teenager's organism during inclusion of the strengthened activity of some endocrine glands.

## **AGE FEATURES OF THE POWER SPECTRUM OF ALPHA-BAND EEG DURING COMPLEX MENTAL ACTIVITIES**

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**Urgency:** Electroencephalographic analysis is one of the most informative methods of study of the systemic organization of integrative processes of the human brain in different functional States, mental activity, attention.

**Objective:** to Study the age peculiarities of the organization of the cerebral cortex in the alpha sub-bands with complex mental activities with verbal and figurative components.

**Materials and methods:** System of computer electroencephalography, a method of calculating power spectra abstract-logical tests, visual-figurative tests of Ravenna, the method of variation statistics student's t-test.

**Research results:** In a state of functional rest with open eyes observed generalized desynchronization of alpha-range and its subranges in all age groups.

During the execution of the visual-figurative tasks in all age groups decreased SP in alpha-1, alpha-2, alpha-3 subranges. At younger age there are shifts of SP of high-frequency alpha sub-band 3, however these changes are insignificant.

Most of the reductions SP are generalized to the alpha-1 and alpha-2 bands. In adolescence, marked shifts of SP in the alpha-3 band to a greater extent than in younger age. Depression of SP alpha-3 subrange is recorded in the frontal and occipital areas of the cortex.

**Conclusions:** In a state of functional rest in children of primary school age are more pronounced power spectra of the alpha-1 and alpha-2 bands, adolescence – alpha -3. the flattening of the eyes and complex mental activity with verbal and figurative component in all age groups cause depression of all the sub-bands of alpha waves of EEG. when spatial visualization ability reduced the SP of the alpha-3 subrange in prednisone areas of the right hemisphere in adolescence and young adulthood.