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## **Structural Changes in the Thymus of Rats Under the Influence of an Energy Drink After Correction with Flax Oil**

**Rakhmanova K. E.**

Bukhara State Medical Institute

**Ilyasov A. S.**

Navoi Innovative University, Doctor of Biological Sciences, Professor of the Department of Exact and Natural Sciences

**Relevance:** The global boom of energy drinks began in the mid-2000s. Thus, in 2006, almost 500 new brands were registered in the world. According to data from the European Food Safety Authority (EFSA) for 2011 for 16 EU countries, about 30% of adults (over 18 years old), 68% of adolescents (10 to 18 years old) and 18% of children under 10 years old are regular consumers of energy drinks.

**Objective of the study:** To study morphological changes in rats aged 1-3-6 months with EN poisoning and their detoxification with flax oil.

**Material and methods:** The object of the study were white rats. In the vivarium of the Bukhara Medical Institute named after Abu Ali Ibn Sina, 120 rats were examined in this group. The thymus of rats was taken for research. The isolated organ was fixed in 10% neutral formalin solution, then the blocks were placed in an automated wiring station KD-TS3D1 Automatic Tissue Processor. The tissue was dehydrated, embedded in paraffin and thin sections of 4  $\mu\text{m}$  thick were prepared on a rotary microtome Semi Automatic Rotary Microtome KD-3358, histological staining of the tissue was performed with hemotaxillin-eosin paint on a carousel device KD-RS2 Automatic Slide Stainer.

**Results:** At the age of 1 month, the trabecular wall thickness in EN poisoning is on average -  $12.1 \pm 0.37 \mu\text{m}$ ; in this age group with flaxseed oil consumption, the trabecular wall thickness is -  $10.4 \pm 0.5 \mu\text{m}$ . The thickness of collagen fiber bundles in the experimental group with EN consumption is on average -  $9.2 \pm 0.4 \mu\text{m}$ ; in the group with flaxseed oil consumption, collagen fiber bundles are on average -  $8.1 \pm 0.4 \mu\text{m}$ . By the age of 6 months, the thymus capsule wall thickness in white outbred rats with EN consumption is on average -  $28.7 \pm 1.3 \mu\text{m}$ ; at this age with flaxseed oil consumption, the membrane thickness is on average  $26.8 \pm 1.3 \mu\text{m}$ . The collagen fiber bundles at the age of 6 months in the experimental group with EN in the thymus capsule averaged  $24.1 \pm 0.83 \mu\text{m}$ ; in the group of rats using flaxseed oil for detoxification, the size of the collagen fiber bundles was  $21.2 \pm 0.8 \mu\text{m}$ .

**Conclusion:** In the study of thymus rats, when compared with the experimental group and the group using flaxseed oil, all indicators were calibrated, but when taking flaxseed oil, the greatest change occurred at the age of one month. The thickness of the trabecular wall decreased by 16.3%. At the age of 3 and 6 months, the collagen fiber bundles in the capsule wall thinned by 14.6% and 13.7%, respectively, and were close to the norm of the control group of thymus in the period of late postnatal ontogenesis.