

DEPUTY EDITOR-IN-CHIEF'S PREFACE TO ISSUE 1, 2024

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In the first issue of the journal for 2024, experimental research takes a leading position. Its high percentage in the total number of articles indicates the progress in scientific developments. The aim of our journal is to convey to the public the results of the most interesting and promising research. It is important to note that these articles are united not only by the quality of the performed experimental research and the results obtained, but also by their potential for application in order to improve the quality of people's life.

The article by the authors from Novokuznetsk (**Gorokhova L.G. et al.**) is of the most practical nature: the study proved that indole and 1-benzylindole in case of long-term intake, lead to functional disorders of the cardiovascular system, which are the cause for development of arterial hypertension, coronary heart disease, atherosclerotic vascular lesions. In this regard, at enterprises where there is contact of workers with indole and its derivatives, it is necessary to introduce an expanded list of medical examinations for employees.

As part of a study conducted by authors from Orenburg (**Kazakova T.V. et al.**), it was found that due to environmental pollution, high concentrations of manganese lead to the accumulation of this microelement in the blood serum, a decrease in the levels of calcium, potassium, magnesium, iron and copper. In the cerebral cortex, the level of manganese, lead, mercury and strontium increases against the background of a decrease in iron and iodine levels, which in turn leads to disorders of the various body systems and the development of various pathological conditions.

The influence of melatonin was studied in two works presented in the current issue: in an article by our regular authors from Novosibirsk (**Michurina S.V. et al.**) and in the article by authors from Volgograd (**Babkov D.A. et al.**). The first group of authors conducted an experiment to identify the effect of melatonin on the expression of anti-apoptotic Bcl-2 and pro-apoptotic Bad, as well as the Bcl-2/Bad ratio in ovarian luteocytes under experimental hyperthermia. Timely administration of melatonin caused a shift in the ratio of Bcl-2/Bad expression areas towards an increase in anti-apoptotic Bcl-2 after only a week of the recovery period and contributed to an earlier normalization of Bcl-2/Bad to physiological levels after two weeks. The second group of authors developed and validated a virtual screening method to identify bioisosteric analogs of melatonin that are promising for study as agents that reduce intraocular pressure. The effectiveness was 40 %, which is a promising indicator for further research and development of the studied compounds as a treatment for glaucoma.

We would like to specifically note the joint article by authors from Yaroslavl and Moscow (**Khokhlov A.L. et al.**) on determining changes in the content of monoamine neurotransmitters and their metabolites in brain structures using high-performance liquid chromatography in combination with tandem mass spectrometry. Until recently, a method for the joint determination of monoamine mediators and their metabolites was not developed. Now it has been fully validated and meets the requirements of Russian and international guidelines. The chosen stabilization method allows samples of brain homogenates to be stored for 30 days after collection.

The study conducted by authors from Moscow (**Adamovskaya O.N. et al.**) can be titled "New times require new research". The authors found that due to the introduction of information and computer technologies into the educational process, schoolchildren, when performing cognitive load on electron-

ic devices, experience changes in heart rate variability, electrodermal activity and cerebral circulation.

The issue also contains a number of review articles in various areas. For example, a team of authors from Moscow (**Regentova O.S. et al.**) analyzed the prospects for using ultrasound of various intensities to treat patients with malignant brain gliomas. Focused ultrasound is reported to be a promising potential treatment for gliomas. Authors from Ufa (**Ziganshin A.M. et al.**) analyzed the literature on the latest research on post-castration syndrome, its impact on quality of life and correction methods. Despite the high level of prior studies of this problem, there are still significant gaps in reducing the risk of stroke, depression, cognitive disorders and Alzheimer's disease.

Authors from Kostroma (**Tikhonova I.V. et al.**) and Moscow (**Marakshina Yu.A. et al.**) presented articles on psychology. First group of authors examined the perceptions of potential parents about the stressfulness of the parental role (objective and subjective determinants). The second article is devoted to the studying of psychometric properties of the Abbreviated Math Anxiety Scale on a sample of Russian high school students.

The issue also includes articles on topics much more rare for our journal than traditional areas. First, this is an article by authors from Yekaterinburg (**Antonova N.L. et al.**) "Social factors in the formation of eating disorders: Experience of sociological research" presented in the "Demography" section, and an article by the team of authors from Moscow (**Siraeva T.V. et al.**) in phthisiology "Organizational aspects of medical rehabilitation of patients with respiratory tuberculosis".

More detailed information about the research results of all presented works can be found in the relevant sections of our journal. We hope that presented materials will be of interest to a wide range of readers. We would like to express our gratitude to both the authors and the reviewers who took part in the creation of this issue.

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