

We consider it expedient to further study the effect of dexamethasone in the proposed dose on the morphology and physiology of the most important organs and organ systems and means of prevention of side effects of this drug.

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## BRAIN STIMULATION THERAPIES

**Introduction.** Mental disorders are one of the most difficult medical problems affecting people around the world. These changes can directly or indirectly affect a person's lifestyle in society, his ability to work, the ability to perform daily tasks, and adequately perceive events around him. Brain stimulation therapy plays an important role in the diagnosis and treatment of mental defects.

Brain stimulation therapy aims at activation or inhibition of the brain activity directly by electricity. The electricity itself can be supplied by electrodes that are implanted in the brain or non-invasively through electrodes placed on the scalp [1]. Although these therapies are used less frequently than drug treatment; they treat mental disorders that are not treated with medication and other treatments.

**Review of recent publication.** Review and analysis of scientific publications and articles, books, Internet resources, the use of the Internet to obtain structured knowledge.

**The objectives of the paper** are to investigate and study several methods of brain stimulation in the treatment of mental disorders; to consider, analyze and summarize information about methods of brain stimulation that are widely used and methods that are new and experimental.

**Results of the research.** Many methods of brain stimulation are used to diagnose and treat mental disorders:

1. Electroconvulsive therapy (ECT).
2. Stimulation of the vagus nerve (ANS).
3. Repeated transcranial magnetic stimulation (rTMS) [1].
4. Magnetic convulsive therapy (MST).
5. Deep brain stimulation (DBS), etc.

ECT is used only when the patient's illness has not improved after using other treatments (such as antidepressants or psychotherapy) [1]. ECT is used to treat psychosis, agitation, and aggression in people with dementia that are difficult to treat and where the disease affects the quality of life. ECT is also used to treat severe chronic depression, which does not improve with medication and other treatments, a state of intense euphoria, hyperactivity, which occurs as part of bipolar disorder. During the procedure, the electrodes are placed on the head at certain points that transmit an electric current that lasts less than 1 minute.

The ANS stimulation works through a device that is implanted under the skin [1]. A device called a pulse generator is surgically implanted in the upper left side of the chest. Connected to the pulse generator is an electrical lead wire, which is connected from the generator to the left vagus nerve. From the generator to the vagus nerve, 30-second electrical pulses are sent every 5 minutes. In turn, the vagus nerve transports these signals to the brain [2].

Using a brain scan, the researchers found that the device affects areas of the brain that regulate a person's emotions and mood [5]. MST is used as an alternative to ECT to find a successful treatment for depression, psychosis with fewer side effects. In MST, pulses of a high-intensity magnetic field are passed through a magnetic coil [3]. Stimulation is limited to a specific area of the brain, and accordingly has minimal effect on neighboring brain tissue.

**Conclusion.** Brain stimulation therapy has been shown to be effective in treating depression and treatment-resistant depression (TRD). The role of transcranial triple-brain stimulation in TRD has not yet been fully elucidated. However, new research suggests that this may be an effective adjunctive treatment.

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## **ROBOTIC SURGERY AS ONE OF THE MOST INTERESTING AREAS OF DIGITAL HEALTH**

**Introduction.** Medicine around the world is closely linked to modern technologies that are designed to increase the efficiency of medical care and make medicine more personalized. One of the most interesting areas of Digital Health is robotic surgery [1]. It is one of five the most successful technological areas that modernize medicine and the health care system. In the late 90`s a universal, robotic, surgical system [1] with remote control – a da Vinci surgical system- was created.

**Objectives of the paper.** To study and analyze the features, importance, and possibility of using the da Vinci surgical system in treating different surgical diseases.