

*Kartik Shivam, Verma Jahnavi*

**BRAIN SURGERY WITH SOUND WAVES**

*Tutor assist, prof. Kidyasova T. V.*

*Department of Topographical Anatomy and Operative Surgery*

*Belarusian state medical university, Minsk*

The brain is our body's most complicated and intriguing organ. The brain is involved in many aspects of life, including thinking, memory, emotions, and behavior. Every year, an estimated 22.6 million people suffer from neurological illnesses or accidents that necessitate the help of a neurosurgeon, with 13.8 million of them requiring surgery. The fact that once these nerve cells are destroyed, the disease is irreversible, i.e. the cells do not recover, is a key constraint in treating physical brain and spinal cord injuries. Diseases including Parkinson's, dementia, and multiple sclerosis cause irreversible nerve damage that is now incurable.

This problem has a ground-breaking answer that is, Brain surgery with sound waves is used to treat a variety of brain disorders and conditions, including tumors, epilepsy, cancer and stroke. This study provided the assessment of Brain surge with the help of sound waves that is an innovative, non-invasive treatment that has shown to reduce risk and time to recover from tremors, strokes, and other neurological injuries.

Using a novel ultrasound device in conjunction with magnetic resonance imaging (MRI), small portions of dysfunctional brain tissue can be accurately burned away without harming the skin or opening the skull. Patients with other diseases, such as Parkinson's disease, will be tested next, according to the researchers. Tremors are much relieved by it.

The current and future applications of magnetic resonance image-guided focused ultrasound surgery (MRGFUS) were thoroughly investigated. MRgFUS is a cutting-edge technology in the field of new ultrasound-based treatments with ablative intent. As a promising and non-invasive technique, MRgFUS has the potential to reduce mortality, reduce medical costs, and open up new avenues for the treatment of patients with CNS diseases. In this research with this New techniques to the treatment of brain malignancies are urgently needed.