# 2016 global markets for neuromodulation devices and

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# **Neuromodulation: Market Overview, Devices, and Applications**

### What is Neuromodulation?

Neuromodulation refers to the therapeutic manipulation of the nervous system using electrical, magnetic, or chemical stimuli to modify neuronal activity. It aims to restore or enhance neural functions by influencing the communication between neurons.

# **Current Market for Neuromodulation**

The global neuromodulation market is experiencing significant growth, driven by advancements in technology and increasing applications in various neurological conditions.

# **Market Players in Neuromodulation**

Major players in the neuromodulation industry include:

- Medtronic
- Boston Scientific
- Abbott Laboratories
- St. Jude Medical

# **Market Size of Neuromodulation Devices**

The global neuromodulation devices market is estimated to reach over \$15 billion by 2026.

### **Neuromodulators on the Market**

Common neuromodulators used in clinical practice include:

- Levodopa for Parkinson's disease
- Trihexyphenidyl for tremors
- Baclofen for spasticity

# **Mechanisms of Neuromodulation**

Neuromodulation can be achieved through three primary mechanisms:

- Electrical stimulation (e.g., deep brain stimulation)
- Magnetic stimulation (e.g., transcranial magnetic stimulation)
- Chemical stimulation (e.g., pharmacotherapy)

# **Neuromodulation Devices**

Neuromodulation devices range from implantable devices like deep brain stimulators to non-invasive wearable devices like transcutaneous electrical nerve stimulators (TENS).

### Cost of Neuromodulation Devices

The cost of a neuromodulation device can vary widely depending on the type of device and the specific condition it treats.

# **Placement of Neuromodulation Devices**

The placement of a neuromodulation device depends on the target area for stimulation. For example, deep brain stimulators are implanted within the brain, while TENS units are placed on the skin.

# **Nerve Stimulation Market Size**

The global nerve stimulation market is estimated to surpass \$4 billion by 2025.

# **Medicare Coverage for Neuromodulation**

Medicare coverage for neuromodulation is limited to certain approved devices and procedures for specific conditions.

# **TENS Units and Neuromodulation**

TENS units are considered a form of neuromodulation as they use electrical stimulation to relieve pain.

# **Largest Market for Medical Devices**

The cardiovascular market represents the largest market for medical devices.

# **Major Neuromodulators**

The four major neuromodulators are:

- Dopamine
- Serotonin
- Norepinephrine
- Acetylcholine

# **FDA-Approved Neuromodulators**

FDA-approved neuromodulators include:

- Pramipexole for Parkinson's disease
- Ropinirole for restless legs syndrome
- Clonidine for hypertension

# **Newest Neuromodulators**

Recent advances in neuromodulation include:

Closed-loop neuromodulation

- Gene therapy for neurological disorders
- Optogenetics

# **Neuromodulation as an Alternative Word**

Neuromodulation is also known as electrical nerve stimulation or neural stimulation.

# **Examples of Neuromodulation**

Examples of neuromodulation include:

- Deep brain stimulation for Parkinson's disease
- Vagus nerve stimulation for epilepsy
- Transcranial magnetic stimulation for depression

### Cost of Neuromodulation

The cost of neuromodulation can range from hundreds of dollars for non-invasive devices to hundreds of thousands of dollars for implantable devices.

# **Nerve Stimulation Market Size**

The global nerve stimulation market is estimated to surpass \$4 billion by 2025.

### **Direct Current Neuromodulation**

Direct current neuromodulation involves the application of a constant electrical current to the brain to modify neuronal activity.

# **Neuromodulation: A Reputable Journal**

"Neuromodulation: Technology at the Neural Interface" is a peer-reviewed journal known for its high-quality research and advancements in the field of neuromodulation.

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