

Repetitive Transcranial Magnetic Stimulation

Repetitive transcranial magnetic stimulation (rTMS) is one of the few relatively new treatment modalities in psychiatry^[1] Basically, it is about using the laws of electricity and magnetism. A strong magnetic field (around 2 T), generated by the passage of current through the stimulation coil, induces synchronized depolarization of the dipoles on the neuron membranes after passing through the soft tissues of the head, skull and brain. The exact neurobiological mechanism of the effect on mood disorders is currently unknown, intensive research is underway.

rTMS can have an activating or suppressive effect on motor, sensory or cognitive functions (cortical excitability) depending on the localization and stimulation parameters. We can distinguish *low-frequency* and *high-frequency* stimulation. Low-frequency (LF = low frequency, 1 Hz) rTMS is considered to be an inhibitor of regional cortical activity, while high-frequency (HF = > 1Hz) has an activating, resp. excitingly.

Neuronal activity is not exclusively affected at the site of stimulation, but also affects the corresponding contralateral and other secondarily connected areas. The effect is therefore complex, changes in neuroendocrine processes, neurotransmitter systems and neurotropic factors are observed, and metabolic changes can be demonstrated by imaging methods. ^[1]

Links

Related articles

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References

1. ALBRECHT, Jakub.