A System to Trigger the Activation of the Cortico-hippocampal Memory System in a Subject

CSIC has developed an invention relates to system transcranial magnetic stimulation. A new system and methodology aim at improving the function of cognitive areas responsible for memorization processes.

Industrial partners from the health industry are being sought to collaborate through a patent licence agreement.

An offer for Patent Licensing

Transcranial magnetic stimulation

The system and methodology is aimed at inducing synaptic plasticity toward hippocampal formation responding to a new formula to enhance the excitability of this neural network.

In the present invention we combine a series of training tasks such as numeric-spatial memory task for activating the cortico-hippocampal memory system in synchronization with a transcranial magnetic stimulation (TMS) pulse, preferably directed by a Neuronavigator, towards the hippocampus.

The present invention converges the TMS pulse with the genuine activation of hippocampal formation in the medial temporal lobe of the brain by the memorization task or in the motor cortex.

The system is configured for the evaluation of the ability to memorize by performing the same task immediately after the intervention, or preferably 30 minutes after the intervention.

Main innovations and advantages

- The invention is especially suitable for activating the spatial memory, that is, the memory responsible for the storage and retrieval of information within the brain that is needed both to plan a route to a desired location and to remember where an object is located or where an event occurred.
- In the context of the present invention, the subject is any human being in need to improve at least one of concentration, memory, or cognitive performance. The subject may be diagnosed with ADHD (Attention deficit hyperactivity disorder) or may be suffering from age-related memory loss or be at risk for age-related memory loss or may be suffering from any cognitive disorders.
- The subject may need treatment to improve cognitive performance in areas including but not limited to, standardized or other educational tasks or testing or occupational tasks or testing.

Patent Status
Priority patent application filed suitable for international extension

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