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Magnets Boost Your Brain

Better learning and memory

Ancient Greeks employed magnetized metal rings against arthritis. In the 15th century, the famous physician Paracelsus thought that magnetic energies induce self-healing of the body. In the Middle Ages, magnets were employed against pain, gout, arthritis, poisoning, respiratory problems, circulatory problems, rheumatism and baldness, to clean wounds and to retrieve arrowheads from the body. Now a new research shows that magnetic stimulation of the brain could enhance memory, and magnets could be applied in treating Alzheimer's disease and other types of dementia. In mice, the magnetic fields strengthened brain circuits and increased the animals' learning and memory abilities. The technique, called transcranial magnetic stimulation (TMS), could lead to new ways of treating memory loss in people but till human trials, more animal tests must be done. In TMS, a magnetic coil is placed on the skull, and the generated magnetic field could affect particular brain areas within. The precise pathway is still unknown, but the technique has been already tested for brain impairments like depression, schizophrenia or stroke. In the new research made by a team at the City University of New York, mice were exposed to TMS for five days, after which their brains were investigated for cell growth and long term potentiation (a strengthening of brain circuitry indicating increased learning). TMS exposure was found to have increased LTM in each brain area, but the researchers also discovered proof of pronounced stem-cell expansion in the hippocampus. "The effect on the stem cells is the most exciting finding. TMS might eventually be used to treat age-related memory decline and forms of dementia such as Alzheimer's, which is associated with a loss of cells in the hippocampus" said lead author Dr. Fortunato Battaglia. "It is unlikely that the technique would stimulate the growth of new neurons in the brain, but that it could slow the progress of dementia by strengthening the links between existing cells. It may be a way of reinforcing connections that are becoming weaker," said John Rothwell, of the Institute of Neurology at University College London.