DRPAWLUK.COM
Medical authority on Magnetic Field Therapy

AGE-ASSOCIATED MEMORY IMPAIRMENT REVERSED WITH PEMF THERAPY

About 40% of people over age 65 experience some memory loss. It is known as “age-associated memory impairment,” if there is no medical condition that causes this loss of memory. Then, it is considered part of normal aging. Alzheimer’s disease and other dementias are not part of normal aging.

Age-associated memory changes are often seen as:

1. Not being able to remember the details of a discussion or incident that took place a year earlier.
2. Not being able to remember the name of a friend.
3. Forgetting stuff and incidents.
4. Occasionally have trouble finding words.
5. You’re concerned about your memory, but your family isn’t.

The hippocampus is responsible for memory and is known to shrink with age. It is an area of tissue deep into each side of the brain at the level of the bottom part of the ear. The hippocampus links two unrelated things together into a memory, like the place you left your keys or your new neighbor’s name. the hippocampus plays an important role in the formation of new memories about experienced events. When the hippocampus is not functioning normally, spatial orientation is affected; people may have difficulty in remembering how they arrived at a location and how to proceed further. Getting lost is a common symptom of amnesia.

Researchers at Northwestern University studied the use of PEMFs to stimulate the brain in older adults to see if they improve memory. Since the hippocampus is deeper in the brain than the parietal lobe, they chose to stimulate the parietal lobe. This parietal area overlies the area of the hippocampus and is intimately connected in its functions to the hippocampus. So, stimulation of the parietal lobe is expected to influence the hippocampus to enhance memory.

The study group included 16 adults, ages 64-80. Before they started stimulation, to get a baseline, they compared the memory test results to a control group of younger subjects. The older individuals were only correct about 40% of the time compared to the younger group who averaged around 55%.

Stimulation was done using a high intensity PEMF at about 10 pulses per second for 20 minutes in each session, over five consecutive daily sessions to the left side of the head. Full intensity stimulation was compared to low intensity "sham" stimulation. This allowed the researchers to evaluate the changes in memory within the same individuals, a more realistic form of assessment, as would be seen in a clinical setting. At the end of the study. The researchers also used functional MRI (fMRI) of the brain to check brain function and the functional relationship of the parietal lobe with the hippocampus.

The results were as follows:

1. Recollection improved relative to baseline about 31% due to active stimulation compared to -3% with sham stimulation at 24 hours.
2. One week after stimulation memory remained significantly better relative to baseline for active group.
3. At one week after active stimulation memory was not significantly better compared to sham, indicating that the gains seen at 24 hours after stimulation were not retained.
4. The fMRI imaging validated that stimulation of the parietal area did communicate with the hippocampus significantly enough to improve memory.
5. The fMRI evaluation comparison also validated increased brain activity for active versus sham stimulation.
6. Also, very impressively, the memory tasks of the older individuals improved so much that they now appeared similar to the younger control group. In other words, memory loss was reverse-aged with active PEMF stimulation.

One of the lead authors said, "Older people's memory got better up to the level that we could no longer tell them apart from younger people."

This research also shows that stimulation of the parietal area of the brain impacts the memory associated with the hippocampus. The other words, the magnetic field penetrates deep enough into the brain through the parietal area into the hippocampal area to improve memory. The research also supports the idea that dysfunction of these connections increases with age, explaining the causes of memory loss as he will get older.

This research seems to indicate that the memory improvements do not last up to a week. It is not known whether longer episodes of stimulation would work better, whether stimulation beyond five sessions would work better, whether high intensity PEMF stimulation to other areas of the brain would produce similar or better results and whether stimulation with lower intensity PEMF systems would be as effective, and whether similar memory improvements could be seen in dementia or early-stage Alzheimer's disease. Other high intensity brain stimulation research has already found benefits for Alzheimer's disease. But, as is seen with many other conditions, the sooner treatment begins relative to memory loss the better the results. Waiting until Alzheimer's disease has clearly been established is less likely to produce the same benefits as treating earlier age-related memory loss.

Nevertheless, these results are exciting, not only ensuring the safety of high intensity PEMF stimulation, but also that this PEMF therapy actually improves age-related memory decline.

Based on the results of this research I would recommend daily use of a home-based PEMF system, to encourage not only temporary improvement in memory but also to rebalance the tissues, hopefully age-reversing the age-related decreases in function of the hippocampal area. For convenience a portable PEMF unit may be likely to be used regularly, and certainly more affordable. Otherwise if someone already has a higher intensity PEMF system this can be used regularly to the parietal area of the brain, preferably daily.

Reference

Network-targeted stimulation engages neurobehavioral hallmarks of age-related memory decline.

Neurology. 2019 May 14;92(20):e2349-e2354. Nilakantan AS, Mesulam MM, Weintraub S, Karp EL, VanHaerents S, Voss JL.