

Depression Research Studies

Double-Blind, Magnet Therapy Eases Severe Depression

<http://www.sciencedaily.com/releases/1999/04/990415064738.htm>

The effectiveness of repetitive transcranial magnetic stimulation (rTMS), a refinement of TMS, was tested on 67 patients in a double-blind study -- in which neither the patients nor the researchers are told who is receiving the treatment and who is receiving the sham.

At the end of two weeks, half the patients in the rTMS group showed a 50 percent improvement in their depression ratings. Only one-quarter of those in the sham-treated group showed the same improvement. Moreover, half the patients receiving the treatment had no need for further treatment with ECT, while all those receiving the sham treatment required it. "Our findings are very exciting, since term," explained Dr. Ehud Klein of the Faculty of Medicine at the Technion and head of the Department of Psychiatry at Rambam Medical Center in Haifa. "The treatment holds the promise of eliminating the need for ECT therapy in many cases." "It's a landmark work," said Dr. Mark George, Professor of Psychiatry at Medical University of South Carolina, about the Technion research. His view was seconded by Dr. Robert Berman, Assistant Professor of Psychiatry at Yale School of Medicine, who noted that "Dr. Klein's group, which has been at the forefront of developing TMS, now corroborates earlier reports on the effectiveness of TMS with the first large-scale investigation."

Other Depression Research Studies

<http://www.garynull.com/Documents/magnets.htm#PEER-REVIEWED SCIENTIFIC STUDIES>

Following are descriptions of 6 recent studies, many of which are double blind studies, published in peer-reviewed scientific journals, on the impact of treatment with magnetic fields on a variety of conditions:

This review article examined the literature concerning the use of transcranial magnetic stimulation in the treatment of depression. Results showed the high-frequency, repetitive transcranial magnetic stimulation treatment to be an effective, side-effect free therapy for depression that may hold promise for treating related psychiatric disorders as well.103

Noting that there is good reason to believe the pineal gland is a magnetosensitive system and that application of magnetic fields in experimental animals has a similar effect to that of acute exposure to light with respect to melatonin secretion, the authors propose that magnetic treatment could be a beneficial new therapy for winter depression in humans.104

This review article notes that transcranial magnetic stimulation has been shown to elicit antidepressant effects, electrically stimulating deep regions of the brain.105

In this theoretical paper, the author argues that deep, low-rate transcranial magnetic stimulation can produce therapeutic effects equivalent to those of electroconvulsive therapy but without the dangerous side effects.106

This study examined the effects of millimeter wave (MW) therapy as a supplemental treatment in patients suffering from various types of depression. MW therapy involved the use of a "Yav'-1" apparatus (5.6 mm wavelength, 53 GHz), and consisted of up to 60 minutes of exposure per day, 2 to 3 times per week, for a total of as many as 15 exposures. Results showed that combined MW/conventional treatment produced a complete recovery in over 50 percent of cases studied a significant improvement in 41 percent, and some improvement in 8 percent. Recovery rates among controls (conventional treatment only) were 4, 48, and 41 percent, respectively.108

Results of this study led researchers to conclude that patients suffering from major depression experienced a significant reduction of depressive symptoms following treatment with transcranial magnetic stimulation coupled with standard medication relative to patients taking the medicine. This was true after just three TMS treatments.109

103. M.T. Kirkcaldie, et al., "Transcranial Magnetic Stimulation as Therapy for Depression and Other Disorders," *Aust N Z J Psychiatry*, 31(2), April 1997, p. 264-272.
104. R. Sandyk, et al., "Magnetic Fields and Seasonality of Affective Illness: Implications for Therapy," *International Journal of Neurosci*, 58(3-4), June 1991, p. 261-267.
105. C. Haag, et al., "Transcranial Magnetic Stimulation. A Diagnostic Means from Neurology as Therapy in Psychiatry?" *Nervenarzt*, 68(3), March 1997, p. 274-278.
106. T. Zyss, "Will Electroconvulsive Therapy Induce Seizures: Magnetic Brain Stimulation as Hypothesis of a New Psychiatric Therapy," *Psychiatry Pol*, 26(6), November-December 1992, p. 531-541.
107. G.V. Morozov, et al., "Extremely-High Frequency Electromagnetic Radiation in the Treatment of Neurotic Depression in Women," *Millimeter Waves in Medicine & Biology. Digest of Papers of the 10th Russian Symposium with International Participation*, April 24-26, 1995, Moscow, Russia, p. 49-51.

Diabetes Research Studies

PEER-REVIEWED SCIENTIFIC STUDIES

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In this study, 320 diabetics received impulsed magnetic field treatment while 100 diabetics (controls) received conservative therapy alone. Results showed beneficial effects with respect to vascular complications in 74 percent of the patients receiving magnetotherapy combined with conservative methods, compared to a 28-percent effectiveness rate among controls.111

This study involving 72 diabetics with purulent wounds found that magnetic fields aided healing significantly.113

References

111. I.B. Kirillovm, et al., "Magentotherapy in the Comprehensive Treatment of Vascular Complications of Diabetes Mellitus," *Klin Med*, 74(5), 1996, p. 39-41.

113. R.A. Kuliev & R.F. Babaev, "A Magnetic Field in the Combined Treatment of Suppurative Wounds in Diabetes Mellitus," *Vestn Khir Im I I Grek*, 148(1), January 1992, p. 33-36.

Ear Research Study (Otitis Externa)

[http://www.garynull.com/Documents/magnets.htm#PEER-REVIEWED SCIENTIFIC STUDIES](http://www.garynull.com/Documents/magnets.htm#PEER-REVIEWED%20SCIENTIFIC%20STUDIES)

This study examined the effects synchronizing pulse waves in the impaired area when treating patients suffering from acute diffuse otitis externa with low-level magnetic fields in combination with conventional therapies. Patients were divided into three groups. The first received ultrahigh-frequency or very-high-frequency electromagnetic waves. The second received 15-minute daily exposures to 50-Hz alternating or pulsating 20-mT magnetic fields. The third group of patients were treated switching on the same magnetic fields only during propagation of the pulse wave through the ear vessels. Results showed a 100 percent recovery rate in patients across all three groups, with recovery taking the least amount of time among those in group 3.239

References

239. V.V. Sunstov, "Treatment of Acute Diffuse Otitis Externa Low-Frequency Magnetic Fields," Vestn Otorinolaringol, 6, 1991, p. 35-38.

Magnet Therapy & Fibromyalgia Pain: New Research from the University Of Virginia

Magnet Therapy Shows Some Potential For Pain Relief - March, 2001

Results are inconclusive, but a study of magnet therapy found the controversial treatment reduced fibromyalgia pain intensity enough in one group of study participants to be "clinically meaningful," the researchers said.

University of Virginia (UVA) researchers published the results of one of the first clinical research studies conducted on magnet therapy for pain in the February 23, 2001, issue of the Journal of Alternative and Complementary Medicine.

Three measures of pain were used: functional status reported by study participants on a standardized fibromyalgia questionnaire used across the U.S., number of tender points on the body, and pain intensity ratings. Data were compiled for 94 fibromyalgia patients randomly divided into four groups. One control group received sham pads containing magnets that had been demagnetized through heat processing. The second control group received only their usual treatment for fibromyalgia. Two other groups received active magnetic pads: one group used Pad A, which provided whole-body exposure to a low, uniformly static magnetic field of negative polarity. The other used Pad B, which exposed subjects to a low static magnetic field that varied spatially and in polarity. The subjects were treated and tracked for six months.

"When we compared the groups, we did not find significant statistical differences in most of the outcome measures," said Ann Gill Taylor, RN, EdD, co-investigator for the study, professor of nursing, and director and principal investigator of the Center for Study of Complementary and Alternative Therapies at the University of Virginia. "However, we did find a statistically significant difference in pain intensity reduction for one of the active magnet pad groups. The two groups that slept on pads with active magnets generally showed the greatest improvements in outcome scores of pain intensity level, number of tender points on the body and functional status after six months."

Pad A group exhibited a consistent improvement across all four outcome measures at three and six months. Pad B group showed an improvement in all outcomes at three months, and these improved scores were maintained at six months. The sham pad group and the group receiving only usual care did not exhibit the same improvements.

The magnetic fields of the mattresses were tested thoroughly to quantify how much exposure, or dosage, study participants were receiving, the researchers said.

"Finding any positive results in the groups using the magnets was surprising, given how little we know about how magnets work to reduce pain," said the study's principal investigator Dr. Alan P. Alfano, assistant professor of physical medicine and rehabilitation and medical director of the UVA HealthSouth Rehabilitation Hospital. "The results tell us maybe this therapy works, and that maybe more research is justified. You can't draw final conclusions from only one study."

"To our knowledge, no other studies on magnet therapy have been done in as rigorous a clinical setting as UVA, and this study was the largest conducted so far," Taylor said. "Nevertheless, larger studies are needed to find clear answers about magnets' safety and efficacy in treating pain."

"Fibromyalgia is a common rheumatological condition for which there is no generally effective treatment," Alfano explained. "People who have fibromyalgia try everything and magnetic mattress pads are one of the most popular complementary products they try. We did this study because we hoped to provide some useful information for them."

"In the past decade, people in this country have been using magnets for everything from tennis elbow to carpal tunnel syndrome. They want to do something for their pain that doesn't involve medication or injections, and magnets seem relatively benign. But people don't know how to evaluate magnetic products when considering what to buy," Alfano continued. "There are no standards for magnets yet. So researchers need to find out what dosage, field strength, and period of exposure is proper, what side effects may occur and what conditions benefit most."

Two other basic science laboratory studies currently underway at UVA are investigating the effects of pulsed and static magnetic fields on neural processes and functions and the effects of magnetic fields on microvascular capillary blood flow.

The study was conducted with partial support from a grant from the U.S. National Institutes of Health Center for Complementary and Alternative Medicine.

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Magnetic Mattress Pad Use in Patients with Fibromyalgia:

A Randomized Double-blind Pilot Study.

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Insomnia Research Studies

<http://www.medicconsult.com/ncsite.nsf/condition/sleep&journal/articles/MCOR-47WM8 S>

Electromagnetic field works better than sleeping pills without side effects. To test that hypothesis, researchers recruited 106 volunteers with insomnia through the Scripps Clinic in La Jolla, California, and the University of Colorado Health Sciences Center in Denver. Slightly over half of the subjects were women, and their average age was 40. Their sleeping patterns were assessed using polysomnography, a complete sleep evaluation that monitors breathing, heartbeat, eye movement, muscle movement and a range of other factors. Comparisons of the two groups showed that the group receiving electromagnetic signals had slightly worse insomnia by standard measures going into the test period.

At the end of the four-week period, researchers compared the somnographic records of both groups, and found that while a placebo effect had increased total sleep time in the dummy-device patients by about 13 minutes, the group using electromagnetic signals had gained an average of over an hour-and-a-quarter in extra sleep, a 268 gain. They were also far ahead in two other basic parameters of sleep: sleep latency (the number of minutes spent in bed before dropping off) and sleep efficiency (the total amount of time asleep as a proportion of the total amount of time spent in bed trying to sleep). Again a placebo effect had reduced latency in the dummy group by about six minutes to an average of about 28 minutes, but the electromagnetic group's average latency had fallen by almost 22 minutes to just over 18 -- a reduction of over half to a level that's considered normal for human sleep. Sleep efficiency in the dummy group increased by 5.58 to 73.78, while in the electromagnetic group it climbed 168 to 78.68 (it had been worse to start with). In the volunteers with the worst insomnia, who fell in the bottom 508 on all sleep parameters, total sleep time with the electromagnetic signals increased by an average one hour 42 minutes.

The patterns of sleep appeared to have changed, too. There was a three times greater increase in rapid-eye movement (REM) sleep in the electromagnetic group than in the placebo group. That change has important implications in terms of sleep quality and restorative value. The electromagnetic group was going through a more natural sleep progression, with 308 more cycles -- a different result from that normally obtained with sleeping pills, which tend to suppress certain natural sleep stages. There was also less time spent awake after first falling asleep -- 55 minutes less -- in the electromagnetic group, as opposed to only about 31 minutes less in the dummy-device group.

Finally, unless one includes increased awareness of dreaming as a side effect, there were no negative changes associated with the use of the electromagnetic signals. It appears to produce a more natural sleep than pharmacological remedies, but without memory loss, mood changes, daytime drowsiness or hangover. Most of those patients who did dream more considered it a positive change, and most sleep specialists would agree that it is likely to indicate physiologically more valuable sleep. Electromagnetic signals therapy also did not appear to be weakened by rebound insomnia, as are many drugs. Indeed, subjective data analysis from other studies suggests that while benzodiazepines give their best results in the first week of use and then become less effective, electromagnetic signals doesn't really begin working until the seventh or eighth treatment (about 18 days).

We have the first therapy ever to increase the number of sleep cycles, and that's what many sleep authorities such as Dr. Thomas Roth or Dr. Christian Guilleminault have told us -- that they've never seen any sleeping pill that could increase the number of sleep cycles. Restoring sleep cycles is the key to reproducing real physiological sleep, because that means that the patient is reaching the stage of deepest sleep. Sleep stages are separated by the REM stage of rapid-eye movement, when you move, dream, roll your eyes, and have an erection if you're a man. Hence, the number of REM periods tells us the number of sleep stages achieved. We found that patients using the electromagnetic signals averaged significantly more periods of REM each night than the placebo group. When we analyzed them, these sleep cycles had normal duration and structure.

We've looked at more than 1,000 patients, and followed them up for several years. The only side effect that we noticed was increased dreaming. It seems, therefore, to be safe and well-tolerated. We went to the FDA and got a green light to file. We haven't yet filed for pre-market approval, but we hope to do so next year.