

## Magnetic Therapy Products

The seemingly magical properties of magnets have been puzzling humanity for centuries, but the magnetic therapy market got its first big boost in the 1700s when Dr Franz Anton Mesmer started to impress the European gentry under the sponsorship of Marie Antoinette. As greater understanding of magnetism and electricity developed, more and more products were produced which relied on a connection between this mysterious "vital force" and the human body.

Magnetic belts, cravats, wrist-bands, corsets and a host of other products designed to wrap around the human body were sold to boost sexual performance (always a crowd-pleaser), promote hair growth and stave off aging. More recently, such products have focused on claims to provide healing powers for a broad range of medical complaints. These days, the world-wide magnetic therapy market has been estimated as worth close to two billion dollars.

While high-field pulsed magnets have a role to play in certain clinical applications, there is little to no evidence that the small static magnets used in the likes of mattress underlays, insoles or bracelets do anything therapeutic to the human body.

One study commonly used to support magnet therapy claims is the Baylor study which compared the effects of magnets and sham magnets on the knee pain of 50 post-polio patients; 29 in the magnet groups had lower pain scores compared with 21 in the control group. There were a lot of

flaws in the study, however, including significant differences in the test groups in both gender and age, no measurement of the pressure used to evaluate the pain scores, no systematic follow-up. It is not an adequate basis on which to make medical claims.

Magnetic insoles can be found in retail and mail order catalogues, usually accompanied by carefully worded statements such as "people believe that these can help reduce pain". A study by the New York College of Podiatric Medicine found that magnets did not have any effect on healing heel pain. Over a 4-week period, 19 patients wore a moulded insole containing a magnetic foil, while 15 patients wore the same type of insole with no magnetic foil. In both groups, 60% of both groups reported improvement! A similar lack of difference in pain or mobility ratings was found in a study looking at magnet use for treating chronic back pain.

Having better foot support or a change in mattress softness may well produce a positive result whether magnets are involved or not. It can be difficult in assessing the effects of a treatment to determine just what is having the effect, hence the need for carefully designed trials.

"A single study on something like magnets and pain relief should rarely be taken by anybody as significant scientific evidence of a causal connection between the two. Likewise, a single study of this issue that finds nothing significant

should not be taken as proof that magnets are useless. However, when dozens of studies find little support that magnets are effective in warding off pain, then it seems reasonable to conclude that there is no good reason to believe in magnet therapy. "

Bob Carroll <http://www.skeptdic.com/refuge/ctlessons/lesson8.html>

Various claims for magnet products are made. Some say that the electromagnetic field helps circulate blood, some claim magnets affect the iron in red blood cells. Studies involving reasonably strong magnets (1000 gauss) show no change in the amount or speed of blood flow. More abstract claims state that magnets restore an imbalance in body energy or accelerate the body's healing processes in some usually undefined, unmeasurable fashion.

It is true that the very powerful magnets in medical MRI machines can produce tiny changes detectable by such equipment, but this is a temporary effect only and produced under extreme field strengths of 10,000-30,000 gauss. If blood were strongly attracted to magnets, it would tend to pool and possibly even ooze through the skin when a person is exposed to an MRI scan! The magnets in consumer "health" products are much weaker. Some have the field strength of a fridge magnet, or around 100 gauss, ranging on up to 1,000 gauss, and this is simply far too weak to produce any measurable effect within the body.

One interesting test is to see whether the magnets in one of these products can pick up a paper clip while contained within the velcro strap or lining used within the product. Few if any, appear to have a strong enough field to do so. Few, if any, have a strong enough field to penetrate the skin, let alone affect the iron in blood which is strongly bound in haemoglobin molecules.

In the US, marketing claims by companies selling magnetic devices have been subject to a host of legal and regulatory actions, primarily aimed at preventing them from making claims that such products relieve pain or can cure, treat or mitigate any disease, or can effect any change in the human body.

One of the obvious warning signs that this is a questionable form of therapy is that much of the marketing material for these products relies on testimonials and anecdotes, often relating to conditions which come and go, such as arthritis, back pain, muscular strain and the like. People suffering from these conditions are very vulnerable to products touting pain relief or a cure.

The California Attorney General Bill Lockyer, on filing a lawsuit against a magnetic mattress pad manufacturer for false health claims and fraudulent business practices said this:

"We will not allow companies to hawk unproven products as a cure-all to the elderly and those with serious illnesses who are desperately

searching for pain relief. These types of scams serve as an important reminder for consumers to check into claims made by companies and talk with your health care provider before making costly medical decisions."

This is good advice.

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New Zealand Committee for Scientific Investigation  
of Claims of the Paranormal (Inc.)

# the new zealand Skeptics guide to

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*Anyone looking for a health-enhancing effect from a shoe magnet might just as well put the fortune from a Chinese fortune cookie in their shoe. It will be equally effective.*

John W. Farley, Ph.D., Professor of Physics  
at the University of Nevada, Las Vegas

*There is no scientific basis to conclude that small, static magnets can relieve pain or influence the course of any disease. In fact, many of today's products produce no significant magnetic field at or beneath the skin's surface.*

Dr Stephen Barrett  
<http://www.quackwatch.org/04ConsumerEducation/QA/magnet.html>