

Magnet Therapy

Background/Definition

Magnet Therapy is an alternative medicine practice in which practitioners use static magnets on certain parts of the body to promote health and healing. The effects of energy forces and magnetism have been studied by many cultures dating back as early as the Roman and Greek Empires. In addition, within the Traditional Chinese Medicine model it is believed that qi, the energy innate in all living things, can be affected by magnet therapy.

The possible healing powers of magnets gained renewed interest with the development of carbon-steel permanent magnets in the eighteenth-century. In the late 1800s, Albert Abrams, MD developed a number of devices he claimed could detect the frequencies of diseased tissue and heal the underlying imbalances. Franz Anton Mesmer, a famous Austrian physician, was also a fundamental figure in the history of magnet therapy with his development of a theory concerning the body's own magnetic energy ("The History of Magnetic Therapy"). More recently, research investigating the use of static magnets to treat pain by neurologists at Vanderbilt Medical University has helped support the credibility of magnetic therapy.

Theory

Basic Magnet Therapy theory asserts that the process can improve blood flow in underlying tissues. This theory is based on the premise that all living organisms exist in a magnetic field, including the human body. The human body generates its own magnetic field, and therefore when electromagnetic energy is in balance the body can heal itself. Many other theories pertaining to the benefits of magnet therapy exist. One theory maintains that magnets produce a slight electrical current, and when applied to a painful area of the body, the nerves become stimulated and release the body's natural painkillers. Another theory states that when magnets are applied to a painful area of the body, the cells will react with ion exchange, increased blood circulation, and oxygen flow to the area. Another theory maintains that magnetic fields attract and repel particles in the bloodstream, increasing blood flow which in turn increases oxygen in the tissues, ultimately accelerating the healing process (Sharp, 2002). Further magnetic field theory in relation to human biology is described by Wolsko (2004):

Scientists suggest that magnetic fields can influence important biologic processes in the following ways: decrease the firing rate of certain neurons, particularly c-type chronic pain neurons; change the rate of enzyme-mediated reactions, which may play a role in inflammatory cascades and free radical generation; modulate intracellular signaling by affecting the functioning of calcium channels in cell membranes; and cause small changes in blood flow.

According to its proponents, magnet therapy also has positive implications for pain reduction. The electrical pain signal, when it reaches each nerve, has the potential to depolarize that cell. Accordingly, therapeutic magnets raise the depolarization threshold of nerve cells, resulting in

the potentially depolarizing pain signal being blocked. Therefore, applying therapeutic magnets to an area near the source of injury or malfunction is thought to effectively block pain (“The Scientific Basis for Magnet Therapy”). Overall, pain relief is enhanced when a magnet’s negative/receptive polarity is applied to certain meridian points related to the pain transmitting nerve. The ability of the nerve as a whole to transmit a pain signal is generally slowed down by the presence of a magnetic field.

The strength of magnets, described in terms of “gauss” or “Tesla”, is an important factor in the use of magnets for healing. Common household magnets are typically around 200 gauss. Magnets used for treatment usually have a higher magnetic strength, ranging from 200-10,000 gauss (WebMD).

Procedure

Plastiform magnets, ceramic magnets, and neodymium magnetic discs are the most common magnets used during Magnet therapy. Cheung (2006) describes plastiform magnets as “flexible, rubberized magnetic rolls that can be wrapped around an affected extremity or lie along the full length of the spine,” and neodymium magnetic discs as, “lightweight and...used on the face and on various acupuncture points.” Therapeutic magnets are generally used by attaching them to certain regions of the body either by placing them underneath a bandage or taping them into fabric.

Since the magnetic field is larger than the boundaries of the physical magnet it is only necessary to find the approximate location of the acupressure point. Finding the exact location can be very difficult for most people. Placing the magnet anywhere near the meridian point is believed to be sufficient such that the radiating magnetic field will affectively reach the intended treatment area.

Cheung (2006) outlines certain precautions that must be taken regarding the placement of magnets including:

- (1) The placement around the stomach within 60 minutes after a meal as it may interfere with the normal contraction of the digestive tract,
 - (2) any open wounds with active bleeding, or
 - (3) any transdermal drug delivery system or patch as it may increase the amount of drug circulating in the body).
- In addition, magnets should not be used on pregnant women, people with pacemakers or defibrillating regulators. Strong magnets are not recommended for small children.

Review:

According to the book *Magnet Therapy*, written by Burton Goldberg, magnet therapies have been clinically proven to relieve 35 health problems, and Dr. Ronald Lawrence, President of the North American Academy of Magnetic Therapy, reports hundreds of successful cases in patients (Livingston, 1996). However, a 2007 review of magnet therapy concludes that all studies of static magnets used for the treatment of pain have produced no meaningful evidence of effectiveness and are, in fact, not effective (“Magnet Therapy”).

There are only a few studies that attempt to empirically investigate the efficacy of magnet therapy. For example, Vallbona and colleagues (1997) studied 50 post poliomyelitis patients who reported that a single 45-minute treatment significantly reduced chronic pain. The double-blind randomized clinical trial used 300 to 500 G bipolar magnets, which were applied to the affected area for 45 minutes. Outcome measured were scored using the McGill Pain Questionnaire and those who received the active device reported much less pain than the placebo group. The active group reported a decrease of about 5.2 on a 10 point scale, while the inactive group experienced a decrease of approximately 1.1.

Weintraub (1999) reported that magnetic foot insoles might be an effective way of relieving the pain of diabetic feet. This clinical trial studied 19 patients, including 10 diabetics, who suffer from chronic foot pain. Participants wore socks that contained magnets for 4 months. 90% of diabetic subjects reported a significant reduction in foot pain. By contrast, only a third of the non-diabetic patients reported pain reduction. Weintraub believes that magnet therapy has the potential to be an effective method for diabetics. Likewise, findings from a recent study on chronic knee pain indicated pain ratings, functional ratings, and gait speed improved significantly more in a magnet group than in a placebo group (Hinman, Ford, & Heyl, 2002).

Brown and colleagues (2000) conducted a study with female patients who reported chronic refractory pelvic pain. The majority of the patients reported 50% reduction in pain after 4 weeks of treatment with pulsating magnets.

As more extensive research continues to expand our understanding of magnet therapy, therapy options involving magnets continue to improve and be more readily available.

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