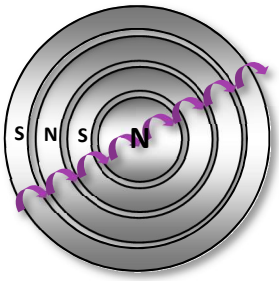
MATRIXMAG™
Advanced Magnetic Therapy
WELLNESS SYSTEMS INC.

SCIENTIFIC BASIS FOR THE BIOLOGICAL EFFECT OF MULTI-ORBIT, ALTERNATING POLARITY CONCENTRIC MAGNET

The unique configuration of the alternating polarity concentric magnet (APCM) appears to produce a 'cascading' magnetic field (see diagram at right). This fluctuating magnetic field, comparable to microcurrent, is measurable using a magnetometer, when the device is in contact with living tissue. Several double-blind studies confirm the influence of this magnetic field geometry on pain modulation (see: References below). Its therapeutically active influence on biological tissue, may be due to its particular manner of influence on the ionic (charged) particles across cell membranes, blood and lymph vessels and other fluid compartments.



Patented APCM Technology

HOW APCM TECHNOLOGY DIFFERS FROM CONVENTIONAL MAGNETS

The design of the multi-orbit, alternating polarity concentric magnet (APCM) results in the magnetic flux (*flux* can be compared to voltage, or the driving force, in an electrical circuit) arising from one ring to roll over and return as a reinforcement through an opposite pole neighbor. This can double the Gauss (magnetic strength) of each neighboring magnetic orbit.

The design of the APCM device produces extremely high gradients. Gradient is the magnetic equivalent of *wind*. Wind blows hardest when it moves from an area of high static pressure to an adjacent zone of lower static pressure (think of the concentric rings as isobars - lines on a map connecting points having the same atmospheric pressure at a given time or on average over a given period). In this case going from a 'positive' zone (high pressure) to an adjacent 'negative' zone (low pressure) is like going from a pressureized tank on one side, to a vacuum tank on the other.

Gauss is the commonly used metric for the strength of the magnetic field and relates to gradient in a conventional magnet. In a 1" diameter neodymium magnet the center is nominally 1,000 Gauss and increases smoothly to 2,000 Gauss at the outer perimeter. Thus, the largest magnetic field occurs only at the perimeter, where it dissipates rapidly.

In a similar 1" magnet with multiple orbits, the strong gradients appear across the entire active face of the magnet. The center may still read 1,000, but the outer perimeter of the first orbit is plus 2500, and the inner perimeter of second orb is negative 2500 (a swing of 5,000 Gauss). Thus, the magnetic gradient exponentially increases with multiple orbits of opposing polarity.

Due to this feature, the APCM appears to be able to utilize the attractive or repulsive force on ions to influence the bioelectric properties of living tissue.

In summary, the forces generated by the APCM devices are much higher and cover virtually the entire “pole-face” while conventional magnets are only truly active on their outer perimeter. These high gradient values, which increase progressively between each successive orbit, act on ions in living tissue across the entire active surface, not just the outer perimeter. This explains why the APCM devices are significantly more bioactive than conventional magnets.

Published Research:

Valbona C, Hazlewood CF, Jurida G, **Response of Pain to Static Magnetic Fields in Postpolio Patients: A Double-Blind Randomized Clinical Trial**. Archives of Physical Medicine and Rehabilitation Nov. 1997.

Zablotsky T, Pilla AA, **Static Magnets Reduce Myofascial Trigger Point Pain**, Department of Physical Therapy, Armstrong Atlantic State University, Savannah, GA, Presented at the 26th Annual Meeting of the Bioelectromagnetics Society (BEMS) in Washington, DC, June 21, 2004 .

Brown CS, Ling FW, Wan JY, Pilla AA, **A randomized, double-blind, placebo-controlled clinical trial using a low-frequency magnetic field in the treatment of musculoskeletal chronic pain,** Pain Res Manag. 2007 Winter; 12(4): 249–258. Authors: Thomas AW, Graham K, Prato FS, et al.

Mayrovitz H, et al, **Effects of a Concentric Rare-Earth Magnet on Menstrual Cycle Pain: A Parallel Group Randomized Pilot Study,** Department of Medical Education, Nova Southeastern University, The Cureus Journal of Medical Science, January 20, 2021.