

Name _____

Magnets in Medicine: Healing with Attraction

Short Answer Key

1. MRI works by generating a strong magnetic field that aligns hydrogen atoms in the body's tissues. Radio waves are used to disrupt this alignment briefly, and as the hydrogen atoms return to their aligned state, they emit signals that are detected and transformed into highly detailed images of the body's internal structures.
2. Magnetic therapy involves wearing magnetic bracelets or jewelry with the belief that they can reduce pain and inflammation in joints.
3. Transcranial Magnetic Stimulation (TMS) is used to treat depression and neurological disorders by applying rapidly changing magnetic fields to specific regions of the brain, stimulating neural activity and improving mood.
4. Magnetic nanoparticles are coated with drugs and guided to specific areas in the body using external magnetic fields, allowing for targeted drug delivery, reduced side effects, and enhanced treatment efficacy.
5. Ethical considerations in the use of magnets in medicine involve ensuring patient safety, informed consent, and rigorous scientific evidence supporting the effectiveness of magnetic therapies.

