Patient Education · Chiropractic & Sports Rehabilitation Institute

EMTT Therapy

Extracorporeal Magnetotransduction Therapy

High-frequency electromagnetic field therapy for deep tissue healing, chronic pain, and musculoskeletal conditions that conventional care has not resolved.



Device of Choice
MAGNETOLITH®
STORZ Medical · Switzerland

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80	100–300	18	15–20	4–8	Zero
MT	KHZ	CM	MIN	SESSIONS	DISCOMFORT
Field strength — over 1,000× Earth's magnetic field	Oscillation frequency — far beyond standard PEMF	Tissue penetration — reaches bone, cartilage, deep tendon	Per session — comfortable, non-invasive, no skin contact required	Typical treatment series	No heat, no vibration, no pain during treatment

How It Works

The MAGNETOLITH® generates high-energy electromagnetic pulses at **100 to 300 kHz** — a frequency range far above traditional PEMF — penetrating up to 18 cm through tissue without heat, reaching structures no surface therapy can access.

At the cellular level, EMTT may:

- **Restore ion exchange** across cell membranes — improving cellular communication in damaged tissue
- **Support mitochondrial energy production** — giving injured cells the energy needed to carry out repair
- **Reduce chronic inflammatory signaling** — breaking the cycle that stalls healing in degenerated tissue
- **Upregulate bone-forming genes** — including SP7, RUNX2, and COL1A1 (Gerdesmeyer et al., 2024)
- **Promote tissue regeneration** — activating repair cascades in tendon, cartilage, ligament, and bone

EMTT vs. Standard PEMF

STANDARD PEMF	EMTT MAGNETOLITH®
Low frequency (Hz range). Shallow penetration. Limited cellular effect at depth. Longer sessions required.	100–300 kHz frequency. 18 cm penetration. Direct cellular effect at deep tissue structures in 15–20 minutes.

EMTT uses no radiation, heat, or electrical current. The electromagnetic field passes through tissue by induction — no skin contact required in most treatment setups.

Your Treatment Plan

During a Session

The MAGNETOLITH® applicator is positioned over the treatment area using an articulated arm. No skin contact is required. You rest comfortably while the device delivers its pulse sequence. Sessions are entirely painless — no heat, no vibration, no discomfort. The work is happening at the cellular level, not at the surface.

When to Expect Results

Some patients notice reduced pain within the first few sessions. Tissue-level regeneration in cartilage, tendon, and bone continues developing for 4 to 12 weeks after the series ends — the biological process keeps running long after treatment concludes.

Integrated at CSRI

EMTT and shockwave work through complementary mechanisms — electromagnetic vs. acoustic. At CSRI they are frequently combined: shockwave addresses local tissue pathology while EMTT supports the broader cellular healing environment. One plan. Two powerful tools.

Clinical Evidence Spotlight

Hollander et al. (2025) — **double-blind placebo-controlled RCT**, 126 patients, MAGNETOLITH® device. Conditions studied: knee osteoarthritis, lumbar spondyloarthrosis, rotator cuff enthesopathy. Protocol: 8 weekly sessions at 80 mT, 10,000 pulses per session. **Result: significant pain reduction vs. placebo sustained over 12 weeks.** Journal of Back and Musculoskeletal Rehabilitation, 2025.

Common Questions

Is this the same as a magnet I can buy at a store?
Not remotely. Consumer magnets are static and generate negligible field strength. The MAGNETOLITH® operates at up to 80 millitesla — over 1,000 times Earth's magnetic field — pulsed at 100 to 300 kHz. That combination of intensity and frequency creates measurable biological effects deep in tissue.

How is EMTT different from PEMF?
Standard PEMF operates in the hertz range with limited penetration. EMTT reaches up to 18 cm into tissue at therapeutic intensity — accessing cartilage, bone, deep tendon, and nerve tissue that standard PEMF cannot reach effectively.

Will I feel anything during treatment?
Most patients feel nothing at all. No heat, no vibration, no discomfort. The electromagnetic field passes through tissue without generating a surface sensation. The work is happening at the cellular level — not at the surface where you would feel it.

Can EMTT be used after surgery?
EMTT may support post-surgical tissue healing and can often be applied without removing post-operative dressings. Dr. Rudnick will evaluate your specific situation and healing stage before recommending it.

Are there contraindications?
Implanted electronic devices including pacemakers and cochlear implants are a contraindication. Metal implants near the treatment area require device-specific evaluation. Pregnancy and active cancer at the treatment site are also contraindications. A complete medical history is reviewed at your evaluation.

Conditions Commonly Treated

- Knee Osteoarthritis
- Hip Osteoarthritis
- Lumbar Spondyloarthrosis
- Rotator Cuff Enthesopathy
- Achilles Tendinopathy
- Chronic Low Back Pain
- Tendon & Ligament Injuries
- Stress Fractures
- Non-Union Fractures
- Bone Healing Support
- Post-Surgical Recovery
- Chronic Musculoskeletal Pain

Individual results may vary. This handout is educational and does not constitute medical advice or a guarantee of outcomes. EMTT should be part of a comprehensive evaluation and individualized care plan. Contraindications include implanted electronic devices (pacemakers, cochlear implants), pregnancy, active cancer at the treatment site, and metal implants near the treatment area (device-specific guidance applies). Always consult Dr. Rudnick to determine clinical appropriateness.

Return to the activities you love.

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