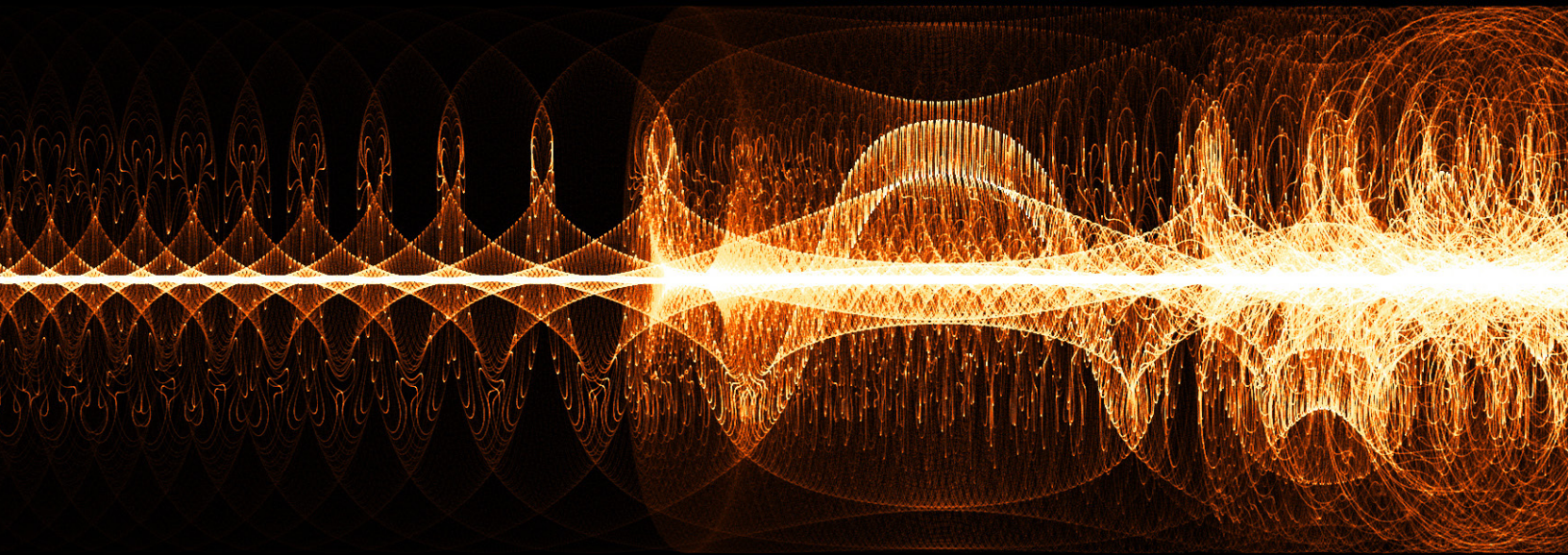


# Extracorporeal Magnetotransduction Therapy (EMTT®)

Activating New Regenerative and  
Restorative Possibilities in Treatment  
and Rehabilitation

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Featuring a special interview  
with John H. Knab, MD



**CuraMedix**  
*Innovative Technologies for Advanced Healing*

# What is Extracorporeal Magnetotransduction Therapy (EMTT®)?

This newcomer to the U.S., EMTT, is among the most innovative technologies revolutionizing medicine today – here's what's prompting so many to want to learn more about how this technology works and how their patients can benefit.

Extracorporeal Magnetotransduction Therapy (EMTT), a form of magnetic therapy, opens up a formerly unimaginable world of possibilities in regeneration and rehabilitation. Because EMTT enables practitioners to broaden the scope of treatment options offered to patients to address musculoskeletal disorders and tendinopathies – it's a treatment game-changer. This transformational technology is another way to help patients get better faster without surgery, unnecessary risk, or downtime.

In the United States, the first to hear of EMTT attended a conference in the fall of 2019 sponsored by [The Institute for Tissue Regeneration and Repair](#). At that meeting, the [new and noteworthy EMTT device, the MAGNETOLITH®, powered by STORZ Medical, was unveiled by CuraMedix to the U.S. market.](#)

You can share in the experience and excitement first-hand by watching this compelling webinar, ["The Official U.S. Introduction to EMTT and the MAGNETOLITH Debut"](#) featuring world-renowned thought leader Prof. Dr. Ludger Gerdesmeyer, for a clinical and fascinating deep dive.

The STORZ Medical EMTT device, the MAGNETOLITH, is remarkable and makes possible a full range of applications while ensuring patient comfort and ease of use for practitioners. Important to note – EMTT is powered by state-of-the-art engineering and backed by numerous clinical studies which affirm its safety and efficacy.



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## Primary Indications for the Use of EMTT

EMTT provides a revolutionary means to treat numerous musculoskeletal disorders and a variety of pain syndromes. Most notably, this technology is backed by significant research and has shown to be highly successful in the regeneration and rehabilitation of complicated conditions. Medical professionals are incorporating Extracorporeal Magnetotransduction Technology to treat the following:

**The MAGNETOLITH is indicated for the following by the FDA:**

- Relaxation of muscle spasms
- Prevention of retardation of disuse atrophy
- Increasing local blood circulation
- Muscle re-education
- Immediate post-surgical stimulation of calf muscles to prevent venous thrombosis
- Maintaining or increasing range of motion

## Did You Know?

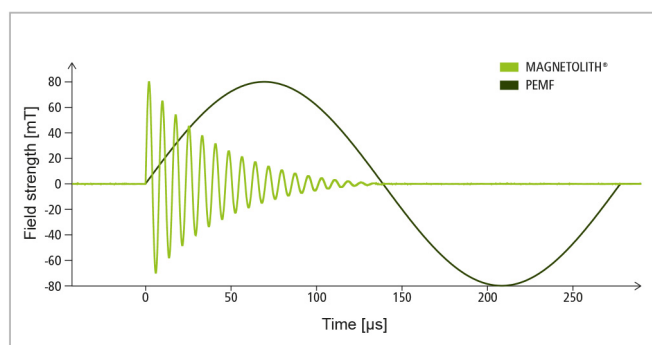
- **“More than 1 in 2 adults—124 million Americans over 18— reported a musculoskeletal medical condition.”<sup>1</sup>**
- **“Musculoskeletal disorders impair quality of life: 52% of those suffering report it impacts activities of daily living—that’s higher than any other condition.”<sup>2</sup>**

Intrigued by the burden and impact of musculoskeletal disorders on patients and society at large? Be sure to read [\*\*Musculoskeletal Disorders: Impact and Regenerative Solutions\*\*](#) to learn more.



## The Advantages of EMTT

With the advent of Extracorporeal Magnetotransduction Therapy (EMTT), medical professionals are now able to offer patients a superior tissue-healing technology that provides a more comfortable and streamlined experience than was formerly available. Patients find that treatment with the **MAGNETOLITH system** is entirely painless, and medical professionals will find the treatment easy to administer.





## Explore the advantages of EMTT at a glance:

- Evidence-based
- Suitable for a wide range of applications
- Non-invasive and non-contact outpatient treatment – with almost no side effects
- Used for a broad range of musculoskeletal disorders and diseases
- Wide range of treatment options
- High level of patient comfort and easy to use
- EMTT is an exceptional complement to ESWT/EPAT

EMTT offers an exceptional solution to patients who have debilitating musculoskeletal disorders and other pain syndromes. With proven impressive outcomes, this technology allows patients to regain freedom of movement quickly and efficiently and vastly improve their quality of life. Medical professionals who incorporate this technology in their continuum of care have an opportunity to change patient lives significantly, all while growing their practice.

## EMTT Technology: Facts, Figures, and Parameters

**Due to its high oscillation frequency of 100—300 kHz, EMTT differentiates itself from other technologies and allows for deeper penetration thus broadening the range of applications.**

The arrival of this exciting electromagnetic therapy here in the U.S. means that medical practitioners can offer superior tissue healing technology and methodology to their patients sooner rather than later. EMTT further equips physicians and medical professionals to provide a safe, comfortable, effective, and streamlined treatment experience.

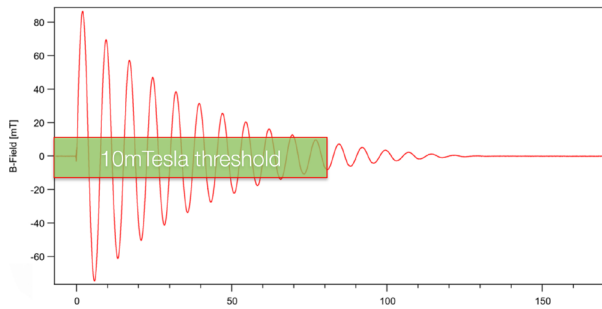
While EMTT relies on a different operating mechanism than ESWT (Extracorporeal Shock Wave Therapy) does, the two modalities are highly complementary and effective when used together. With ESWT, the mechanism of action essentially depends on high-energy acoustic-physical signals in a local treatment area. In contrast, EMTT acts using high-energy magnetic field technology in the regional trauma area.

### Here are the highlights on EMTT:

- High oscillating frequency with high penetration depth (100 – 300 kHz)
- The device offers continuous and reliable operation by a water-cooled applicator
- Simple plug in and plug out to change the applicator
- Integrated touch display to adjust energy level, frequency, and pulse rate
- Flexible holding arm and one locking knob for easy positioning
- Effectivity and safety are proven in studies

#### Magnetolith Parameters

Oscillation frequency	130 kHz
Oscillations per pulse	>15
Maximum field strength (at the coil)	0.6 T
Magnetic field strength (4cm distance from the coil)	60 mT
Performance of the magnetic field (dB max/dt)	65.300 T/s



Source: Dr. Med. K. Knobloch

## A Single EMTT Pulse

## EMTT in Practice

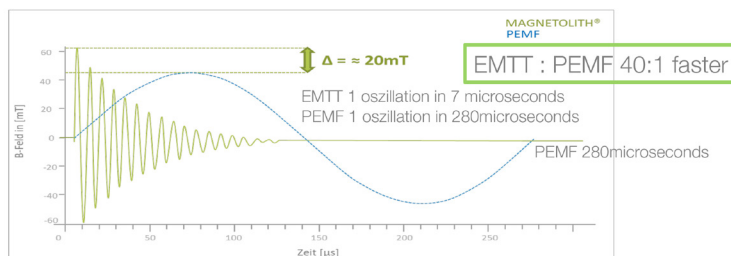
**STORZ Medical has been developing innovative, therapeutic solutions for over 30 years. As a result of their commitment and dedication to regenerative technologies, they have earned the highest level of trust among medical professionals and patients alike.**



Medical professionals find the STORZ Medical MAGNETOLITH to be straightforward to use and operate in a practice setting. Patients receiving EMTT treatment do not have to disrobe; it's a simple in-office procedure. Additionally, the device is proven effective and offers fatigue-free operation for medical professionals, with pulses and frequency adjustable up to 10 pulses per second.

To treat, simply position the applicator directly above the region of the body being treated. The procedure typically takes from 5 to 20 minutes depending upon the indication and frequency and may be repeated up to 8-12 times over several weeks.

$$dB(t)/dt|_{\max} = \omega B_0 = 2 * \pi * f * B_0$$



Source: Dr. Med. K. Knobloch

**Mathematical  
Approximation  
Effective  
Transduction  
Power**

# About Dr. John Knab

John H. Knab, MD, is a board-certified anesthesiologist and is fellowship-trained in pain management, with added qualifications in pain management from the American Board of Anesthesiologists. He is currently the Medical Director at the Center for Pain Management in Wilmington, NC, where he has practiced pain medicine exclusively for over 20 years. Dr. Knab is an expert in minimally invasive pain management and orthobiologics as well as an accomplished public speaker and writer. He has spoken on behalf of pharmaceutical companies and has published articles related to the advancement of pain medicine in many peer reviewed medical journals.



**Dr. Knab is passionate about educating patients and others about emerging therapies for the treatment of chronic pain syndromes.**

Treatments may be carried out by the doctor or a medically trained staff specialist. **Since the first-hand experience of peers is so valued, we've asked Dr. John H. Knab to share his personal experience with EMTT below.**

## Q and A Featuring Dr. John Knab

### **Q: When did you first learn about EMTT?**

"I was fortunate to participate in a webinar sponsored by CuraMedix featuring Prof. Dr. Ludger Gerdesmeyer last year. I was fascinated, did my homework, and was sold on the idea and committed to bringing this technology into my practice-even before the FDA's final clearance."

### **Q: How long have you been using your EMTT device?**

"In just two years, we're already at 10.5 million impulses and have treated close to 700 patients."

### **Q: What are the advantages of now having EMTT in your toolbox?**

"I tell patients that EMTT fits into the treatment spectrum between shockwave and laser. Oftentimes we combine therapies, depending on patient diagnosis and degree of pathology/inflammation. I am finding that EMTT has more of an anti-inflammatory effect on tissues, whereas shockwave will typically have a transient inflammatory effect, followed by the expected proliferative and remodeling phases of healing."

**Q: Are you using EMTT in combination with shockwave? If so, how and when are you using them together?**

"The EMTT plus shockwave combination seems very effective when we are treating shoulder, hip, sacroiliac, and bone marrow pathology. For some reason, patients are able to "feel " the EMTT being delivered when we are treating these areas while not as much when we are treating ankles, elbows, or hands. I'm not sure why this is, but patients definitely like the idea of being able to "feel" the therapy being delivered. When combining shockwave and EMTT, we are typically doing weekly shockwave and twice-weekly EMTT treatments. That being said, I'm continually looking at how each patient progresses when these technologies are used. Additionally, I am furthering my education and understanding of them by reaching out to other US medical professionals who also now have EMTT and especially to our European colleagues who have been using EMTT for much longer than those of us here in the US.

**Q: Where has EMTT shown the most success and promise for you and your patients?**

"I'm looking forward to seeing how effective EMTT is for my spine patients. Particularly those with painful vertebral body endplate edema. This is a notoriously difficult condition to treat, and if EMTT has even a small effect on these hard-to-reach lesions, it would definitely be a game changer for my practice. I am seeing some initial promise in terms of treatment of chronically painful and tight iliacus muscle pathology. The distal iliacus is – for me – a tough muscle to treat with injections, but EMTT gets right in there."

**Q: Can you name specific conditions that this technology has helped you successfully treat?**

"Painful labral tears of the hip. Sacroiliitis. Painful BML of the knee cervical facet OA. Supraspinatus/ ACJ OA. I could go on and on. It's really promising."

**Q: Any EMTT "ah-ha!" moments?**

"A single EMTT treatment took a colleague's acute cervical facet OA pain from a 10/10 to a 0/10 within minutes. This was during the first week we had the MAGNETOLITH. And her pain hasn't bothered her since!"

**Q: Is there anything else you'd like to add that we have not covered?**

"I can't think of any other tools in medicine that simultaneously "find the pain" and "treat the pain". Shockwave and EMTT definitely do both --- which is pretty cool! I am extremely passionate about shockwave, EMTT, and MSK medicine in general. My only regret is that I wish I'd learned about and had access to these technologies earlier in life."

"Since receiving the EMTT device in July 2021, the most surprising aspect has been seeing/feeling the direct muscle activation that can occur with application over the anterior shoulder (pectoralis), the anterior hip (iliacus), and in the paravertebral muscle region (multifidus/psoas)," explains Dr. John Knab.

"Although this is similar to how we see direct muscle activation with electrical stimulation (TENS), with EMTT, it is happening in deeper muscle groups than is possible with TENS. It is interesting to me that we do not see muscle stimulation in all parts of the body. Interestingly, we don't see any muscle stimulation at the ankle, knee, elbow, or wrist. I know this is the case because I have applied EMTT to almost every muscle group in my body!"

**"EMTT has surpassed my expectations in terms of its simplicity. It is incredibly easy to train staff on, and this has made integration into our clinical practice seamless."**

"My impression after one year with EMTT is that it is a very powerful tool for clinicians who are practicing musculoskeletal medicine. Particularly when dealing with spinal issues, I believe that EMTT has the potential to help with conditions that are very difficult to treat, including disc/nerve root/vertebral body endplate issues – some of the most problematic areas that we deal with."



## EMTT Case Presentation:

55 y.o. male acute left L3 sensory radiculopathy after kiteboarding injury. MRI Confirmed foraminal HNP at left L3/4. OTC NSAIDs providing minimal relief. Patient not interested in taking steroids, gabapentin, etc. To date, traction and chiropractic therapy only partially helpful. Prefers to avoid spinal steroid injections.

**Patient was provided EMTT treatment which included weekly sessions x 4-6 weeks.**

**Week 1:** Wand applied to left L3-L4 level. Parameters: Power level 8/8 Hz/6000 pulses

**Week 2:** Identical therapy

**Week 3:** Sensory symptoms completely absent, and additional EMTT treatment not required.

**Week 8:** Patient remained asymptomatic after only 2 EMTT sessions. No other treatment had been performed since the second EMTT session and the patient has resumed full sporting activities without restrictions.





## Conclusion

EMTT has opened new pathways and possibilities for the regeneration and rehabilitation of musculoskeletal disorders and tendinopathies. **This breakthrough technology is a perceived disrupter in medicine — offering the latest innovative way to get patients better swiftly and efficiently, without unnecessary risk or the need for surgery.**

EMTT is a technology backed by a body of clinical evidence and proven to facilitate extraordinary regenerative healing.

## Additional EMTT Information and Resources

Clinical evidence. Compelling research. Inspiring insights from both medical peers and patients. The more you know about shockwave and EMTT from CuraMedix, the more effectively you can integrate them into your practice.

### EMTT Blogs:

- [Accelerate Healing with Restorative Medicine Technologies](#)
- [Musculoskeletal Disorders: Impact and Regenerative Solutions](#)
- [What is Extracorporeal Magnetotransduction Therapy \(EMTT\)?](#)
- [CuraMedix Unveils the New MAGNETOLITH](#)

### EMTT Webinars

[The Official U.S. Introduction to EMTT and MAGNETOLITH Debut.](#)

[The Official U.S. Introduction to EMTT and the MAGNETOLITH Debut](#)

[Treating from Head to Toe Using Shockwave, EMTT, and More](#)

Link to the CuraMedix [EMTT Resource Hub](#)



# Ready to Harness the Power of EMTT?

CuraMedix is committed to helping medical professionals integrate a full range of innovative, non-surgical tools, devices, and technologies into their continuum of care. MAGNETOLITH is the newest edition to a robust lineup of innovative tools offered to our medical partners.

**You'll recognize there are both clinical and financial benefits to adding EMTT to your continuum of care. EMTT is an unmatched technology that delivers unrivaled outcomes.**

See what renowned thought leaders in the U.S. and abroad in the field of regenerative medicine are saying about the power of EMTT.



*"For me, MAGNETOLITH complements the combined shock wave therapy in a congenial way. In my sports practice, I see clear synergistic effects on diseased tendons and bones that result in accelerated tissue healing. This is of immense importance, especially for the top athletes I look after."*

**- Prof. Dr. Karsten Knobloch, Hanover, Germany**



*"At my clinic and practice, I use the MAGNETOLITH primarily for degenerative joint, muscle and tendon disorders, but also for inflammatory forms of musculoskeletal disorders, both as a standalone therapy and as a supplement to extracorporeal shock wave therapy (ESWT). Treatment with the MAGNETOLITH is incredibly straightforward. Depending on the clinical picture, I can tailor the pulse intensity and pulse repetition rate to my patients. For a localised treatment, I secure the applicator above the patient using an articulated arm. If I'm working over a larger area, I guide the applicator manually."*

**- Prof. Dr. Ludger Gerdesmeyer, Kiel, Germany**



*"When adding something new to my practice it has to check the right boxes: Safe, evidence-based, effective, and valuable to both patients and practice outcomes. With this framework, adding EMTT was a no-brainer for my practice! My Physical Therapist and I use it all day long and have integrated it into our treatment protocols for everything from acute sprains and strains, to surgical post-op healing, to chronic degenerative arthritis. Our patients know it as our Magic Wand!"*

**- David Cunningham, M.D.**



*"Having done preliminary research back in 2017 with Prof. Dr. Ludger Gerdesmeyer with EMTT, I am convinced of the science and efficacy. I am currently seeing good results for arthrosis particularly of the ankle, midfoot and 1st MP, as well as for acute bone and muscle injury, which I can combine with focused shock wave (ESWT) and with radial pressure wave (EPAT) as indicated. My colleagues have been using it successfully for knee and shoulder issues as well."*

**- Amol Saxena, DPM**



*"For those who know me, I am a tech loving doc. I've been a Class 4 laser user for many, many years and when EMTT came along, I had to give it a run. It did not disappoint."*

*People ask me if EMTT cannibalizes the use of my laser and in some ways yes and some ways no. I can't use laser on patients with a skin cancer history, which with the population I see, that can be a concern. With EMTT, I can treat them without concern. I can use EMTT without undoing post op dressings. I can set my EMTT and I can efficiently see another patient while it is treating. Patients have called it the "magic wand" and I agree."*

**- Michael Chin, DPM**



*"EMTT is truly a remarkable technology. I treat active and post-surgical patients for musculoskeletal disorders, acute and chronic. I even use it as a standalone on asymptomatic joints. The patients have this astonished look on their faces as they report experiencing an "opening" or loosening of the treated area, completely touch free. I have found EMTT to be a great addition to follow ESWT. I use it on every patient at the end of their treatment and watch as they return to their activities of daily living in a much shorter time."*

**- Brian K. Nathanson, DC**

## EMTT: Backed by Research

The articles and evidence listed below offer insight into the significant therapeutic effects of incorporating and using EMTT.

- 1. Stimulation of Human Bone Marrow Mesenchymal Stem Cells by Electromagnetic Transduction Therapy** - *EMTT Electromagnetic Biology and Medicine* (2022)
- 2. Novel Extracorporeal Magnetotransduction Therapy with MAGNETOLITH(R) and Focused Electromagnetic Extracorporeal Shockwave Therapy in Medial Meniscal Tear** - *Journal of Regenerative Science* (2022)
- 3. Electromagnetic Transduction Therapy and Shockwave Therapy in 86 Patients With Rotator Cuff Tendinopathy: A Prospective Randomized Controlled Trial** - *Electromagnetic Biology and Medicine* (2018)
- 4. Electromagnetic Transduction Therapy in Non-Specific Low Back Pain: A Prospective Randomised Controlled Trial** - *Journal of Orthopaedics* (2017)
- 5. Electromagnetic Transduction Therapy for Achilles Tendinopathy: A Preliminary Report on a New Technology** - *The Journal for Foot and Ankle Surgery* (2017)
- 6. Electromagnetic Transduction Therapy in Patients with Chronic Aseptic Osteitis Pubis** - *Journal of Orthopedic Research and Therapy* (2018)
- 7. Fact 1: "The Hidden Impact of Musculoskeletal Disorders on Americans – Opportunities for Action"** - *Bone and Joint Initiative USA*
- 8. Fact 2: "The Hidden Impact of Musculoskeletal Disorders on Americans – Opportunities for Action"** - *Bone and Joint Initiative USA*



## Advanced Care, Exceptional Outcomes

Expand the boundaries of patient care with innovative, evidence-based, non-invasive technologies, products and procedures from CuraMedix.

CuraMedix is proud to represent STORZ Medical as the leading full-service U.S. distribution partner supporting the complete suite of STORZ Medical radial pressure wave, focused shock wave, and now "High Energy" Magnetotransduction (EMTT) devices

Have questions about how adding game-changing shockwave and EMTT to your continuum of care can be a win-win for practice and patients?

**Contact us today and we'll connect you with the right person on our team.**

**Contact Us**