



WINBACK
BETTER FASTER GENTLER

TECAR THERAPY REVIEW

THE THERMAL SENSE

BY JEFFREY TUCKER, DC, DACRB

We can all relate to how we interact with environmental temperature outside our bodies. Temperature impacts how we feel and influences our mood. It can work against our ability to fall asleep or help us with it. Hot and cold exposure can help correct nonhealing parts of the body (arthritis, blood vessel damage, etc.). Cold therapy can produce a significant reduction in inflammation, while heat therapy helps clear toxins and pathogens from the body.

Modalities are at technological levels not seen or known in the past. Laser (photobiomodulation), shockwave, PEMF, vibration-percussion massage, and lymphatic drainage machines can be used with manipulation and movement therapy to enhance outcomes. Those devices are here and firmly established. Now transfer of energy capacitive and resistive (TECAR) therapy, a deepheat therapy and high-frequency modality (diathermy), has made rapid strides forward in science and clinical application.

“There has never been a time in physical medicine that offers such great possibilities as what lies in this new technological physiotherapeutic field of combining hands-on therapy, diet, exercise, shockwave, PEMF, frequencies, laser, lymph and percussion-vibration massage, and now TECAR therapy.” – Jeffrey Tucker, DC, DACRB

The modern office will measure cellular voltage and phase angle to provide cell charging (mitochondrial biogenesis) stations, including PEMF, light stimulation, and body vibration (whole or local) with sound frequencies. It will include repair and recovery that speeds up Mother Nature, such as hands-on therapy along with optimization of sleep, exercise, nutrition, hydration, breathing, meditation, and hormones. Combining topical (CBD, etc.) creams with equipment, such as shockwave, laser, lymph massage (PhysioTouch, cupping), NormaTec compression massage, vibration-percussion massagers, and TECAR heat therapy, will enhance recovery.

Transfer of energy capacitive and resistive therapy (TECAR) is a pain-modulating and regenerative cell therapy.

TECAR influences fascia, lipids, oxygen products, heme in hemoglobin, nitric oxide, oxidative stress elements, prostaglandin formation, and heat shock proteins and enzymes in a range of conditions and diseases. Indications include:

- Contusions (helps prevent adhesions)
- Muscle strains, sprains (especially those involving ligaments, nerves, tendons, and the synovial membranes)
- Bursitis (even those with calcified deposits)
- Tenosynovitis
- Chronic arthritis

- Disturbances of circulation (any condition that requires increased blood flow)
- Increase general metabolism
- Decrease dense fascia
- Genitourinary conditions
- Pelvic floor dysfunction
- Respiratory diseases (reduces viscosity of secretions) including sinusitis
- Creating abdominal warmth
- Inflammation of peripheral nerves (neuritis, radiculitis, neuralgia)

Your ability to guide the flow of deeper and more uniform heat (not just superficial) in the body helps direct the flow of energy (i.e., the charge to mitochondria, how well it can clear out

toxins and pathogens), leading to how well the body can correct and heal itself. This is exciting therapy, and I look forward to gaining and sharing a better understanding of the biological details.



“A loss of fascial flexibility contributes to the development of many chronic disorders. Regaining lost motion is a priority in my practice, and I see how TECAR is helping in this goal.”

TECAR THERAPY

- Serves as an alternative electro and manual-therapy technique
- Produces deep penetrating heat that influences the extracellular, intracellular (aqueous component of plasma, water, and fats), and fascial matrix (hyaluronic acid)
- Increases the circulation and oxygen in the body, which influences many reactions (i.e. water temperature, cell membranes (fatty acid), O₂, nerve impulses, and much more) and enhances fascial and vessel flexibility
- Pain relief

- Targets specific biological requirements, such as damage to microvasculature, lowgrade or high-grade inflammation, fascia, tendon, cartilage, muscle, and bone
- Offers personalized treatment

In my experience, deep TECAR heat and treatment options produce improved joint movement and address muscle and joint stiffness better than similar modalities. I had a TECAR treatment on Friday afternoon for my back that concentrated on the thoracolumbar fascia related to stiffness and ache from a new workout routine I did on Thursday and Friday morning.

That evening, I noticed some warmth in the area that continued into the night (the sensation was deep rather than superficial). The next day I definitely noticed going further than ever into my thoracolumbar fascial stretching routine. Regaining and optimizing cell wall and vascular/fascial flexibility is the basis of proper healing and prevention of musculoskeletal injuries. A loss of fascial flexibility contributes to the development of many chronic disorders. Regaining lost motion is a priority in my practice, and I see how TECAR is helping in this goal.



TECAR therapy requires contact with the skin; it is not a “through the clothes” treatment. A variety of hand-held and stationary applicator devices, such as electro pads (metal plates and adhesives), various size paddles, and even IASTM tools come with the machine (Photo). All of these generate energy that produces heat in the body. I can control what the patient feels, from very little sensation to comfortable warmth to hot. TECAR therapy provides the deepest form of heat available to the therapist and patients.

MY TOP THREE REASONS FOR USING TECAR

Pain is the most common symptom reported to me by patients. For my review of TECAR, I performed more than 500 TECAR treatment sessions on my patients. The majority were chronic pain patients. I used TECAR therapy with the intention of improving blood vessel health and blood flow to muscles, tendons, ligaments, nerves, and joints. My goals included stimulating anti-pain mechanisms and improving lost range of motion. Overall, patient response to the treatment was overwhelmingly “positive.”

HEAT THERAPY FOR BLOOD FLOW AND VESSEL HEALTH

Lack of oxygen to the tissues is a very painful condition known as ischemia.

TECAR therapy:

- Improves blood flow, removing acute and chronic inflammatory metabolites from injuries, so the local tissue can heal. TECAR improves vascularization to soft tissues.
- Stimulates oxygenation, which allows neo-angiogenesis (new blood vessel growth).
- Provides a drainage effect (organic fluids such as plasma, lymph, other blood components, O₂, and the bone matrix) – opening constricted vessels (lymph, blood, exudates, etc.), allowing toxins to “drain” from the treated area.
If drainage channels are blocked, healing results will be compromised.

HEAT THERAPY FOR ANALGESIA

- TECAR is a pleasant tissue touch.
- Probably stimulating C-fibers in the superficial and deep fascia influencing the insula (the part of the brain associated with interoception).
- Heat therapy is known for relaxation.

HEAT THERAPY FOR FASCIA

Hyaluronic acid (hyaluronan or HA) is an anionic nonsulfated glycosaminoglycan distributed widely throughout connective, epithelial, and neural tissues. The breakdown of the glycosidic bonds leading to lower molecular-weight HA with lower viscosity can be accomplished with heat at different temperatures ranging from 98.6 to 140 degrees Fahrenheit for certain periods of time and pressure. Degradation of dense fascial tissue increases with the duration of heat temperature and pressure (Ferguson, 2011).



In this way, TECAR can:

- Improve fascial stiffness
- Reduce muscle stiffness
- Increase range of motion

**“Heat + fascial stretching creates spaciousness”
- Jeffrey Tucker, DC, DACRB**

I have seen the influence of fascial stretching, especially if done during treatment or soon after a TECAR session. Stretching will influence vascular health by reducing arterial stiffness. Increased blood flow could increase nitric oxide (NO) production, and the heat formation influences lipid oxidation and cell membrane interactions too. I am currently experimenting with these outcomes and will write more about them in the future.

THE FUTURE OF TECAR

In the future, we will see more customized TECAR protocols, such as diagnosis and tissue-type specific TECAR therapy with applicator and movement instructions. Ideally, TECAR devices can produce patient/disease- specific programs, much like what has occurred with laser therapy recommendations. Currently, very few devices provide all the information needed for a specific condition at the right temperature and dose. Cupping techniques stimulate the lymph (immune) system; laser stimulates the mitochondria; shockwave stimulates the cell membranes. TECAR interacts highly with all of these. Don't wait to find out more about this helpful modality.

Reference

1. Ferguson, E. L., Roberts, J. L., Moseley, R., Griffiths, P. C., & Thomas, D. W. (2011). Evaluation of the physical and biological properties of hyaluronan and hyaluronan fragments. International journal of pharmaceutics, 420(1), 84-92.



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