

# SHOCKWAVE & LASER CONSENT FORM



## RADIAL EXTRACORPOREAL SHOCK WAVE TREATMENT (rESWT)

Radial shock waves are generated ballistically by accelerating a bullet (metal cylinder) to hit an applicator, which transforms the kinetic energy into radially expanding acoustic shockwave or pressure wave. In front of the wave is an increase in pressure and behind the wave is a decrease in pressure. It is this pressure gradient that elicits many of the beneficial physiological effects. Reported effects include increase in nitric oxide to enhance blood flow, protein synthesis, cell proliferation, nerve and cartilage growth, stimulation of angiogenesis/neovascularization (new blood vessel growth), growth factor (TGFb1, IGF-I, VEGF) release and modulation of pain.

ESWT was first used in the 1980 to disintegrate kidney stones. It was only natural, then, to apply the technology to calcified tendon injuries like rotator cuff and heel spurs and then to plantar fasciitis which is a chronic tendinosis. The dissolution of calcific tendonitis on X-Ray helped to further its application to other soft tissues. Although no such studies exist for dissolving the heel spur ESWT's ability to alleviate heel and plantar fasciitis pain was reported to be 81% which is superior to other conservative or operative treatments.

Shockwave has been studied on virtually every musculoskeletal tendonitis or injury, including golfer's and tennis elbow formally known and medial and lateral epicondylitis, rotator cuff tendinopathies, Achilles tenonitis. Additionally, its use has been expanded to include erectile dysfunction, although this application should be reserved for a urology center specializing in this area.

Wang C. Extracorporeal shockwave therapy in musculoskeletal disorders. *J Orthop Surg Res.* 2012;7(1):11.  
Notarnicola A, Moretti B. The biological effects of extracorporeal shock wave therapy (eswt) on tendon tissue. *Muscles Ligaments Tendons J.* 2012;2(1): 33e37.  
Simplicio C, Extracorporeal shock wave therapy mechanisms in musculoskeletal regenerative medicine. *J Clin Orthop Trauma.* 2020 May; 11(Suppl 3): S309-S318

## THERAPEUTIC LASER TREATMENT Class IV Infrared 810-980 nm; up to 60 watts

Laser is generated with an electrical current to a light emitting diode designed to create a coherent light beam of an infrared wavelength. Similar to how plants absorb light with chloroplast in the visible spectrum to create energy, our mitochondria contain chromophores in our mitochondria that are excited by infrared light.

The physiological effects can stimulate the production of ATP, reduce pain, improve mobility, enhance tissue oxygenation, improved relaxation and reduce muscle spasm, encourage autonomic nervous system balance by augmenting the parasympathetic nervous system. Stimulation of transcription factors to enhance cell repair and mitigate reactive oxygen species (free radicals), has been documented. Additionally, a new mechanism of structured water generation provides an exciting avenue to affect systemic circulation and lymphatic transit which can be used to augment most manual therapies.

Uses for most musculoskeletal complaints have been evaluated in the literature and a significant history of safe and effective use has been observed in clinic practice for most of the last century. Eye protection is encouraged, and communication with staff is important as the laser can become quite hot, to the point of burning or blistering. This is difficult to do, however, as the heat is gradual but apparent when hot.

## CONSENT

I authorize the performance of a procedure known as rESWT and Laser Therapy to be performed under the direction of Flux Metabolic Restoration Center. As a patient, I give my consent to receive treatment of rESWT and Laser Therapy, and have been informed of the benefits and any possible side effects including and not limited to significant bruising/blistering, increase in swelling, pain, numbness, broken skin and minor bleeding. I have and will continue to advise Flux Metabolic Restoration Center of any other treatments I am receiving or will receive from any other facility.

I acknowledge that the nature of this procedure has been described to me in terms which I understand and all questions I have asked, have been answered to my satisfaction. Any complications or risks which may be associated with this procedure or possible alternatives have been explained.

I am aware that Flux Metabolic Restoration Center is using rESWT and Laser Therapy for FDA approved as well as for investigational medical conditions and I acknowledge that no guarantees have been made to me concerning the results of examination or treatments from this therapy.

I hereby agree to hold Flux Metabolic Restoration Center and any of its employees from all cost, injury and damage incurred, any of which is caused by an activity, condition or event arising out of the performance, preparation for performance or nonperformance of treatment in this facility.

Signature of Patient or Representative: \_\_\_\_\_ Date: \_\_\_\_\_

If the patient is unable to sign or is a minor, complete the following: Patient is a minor (\_\_\_\_) years of age, and/or is unable to sign because:

Patient Name: \_\_\_\_\_ Date: \_\_\_\_\_