SHOCKWAVE THERAPY

The only non-invasive alternative to surgery in treatment of chronic pain.



THERA ш SHOC



Are you an orthopaedist, physical and rehabilitation medicine specialist or physiotherapist? Do you want to treat patients who:

Suffer from chronic pain?

- Are not a suitable candidate for **surgical intervention**?
- Are looking for a non-invasive and side-effect free form of pain management?

BTL provides you and your patients with a whole new formula for chronic pain – **SHOCKWAVE THERAPY**!



SHOCKWAVE THERAPY

SHOCKWAVE THERAPY is the only non-invasive alternative to surgery treating both the cause and symptoms of chronic pain.

SHOCKWAVE THERAPY procedure is:

The only procedure that addresses **the impaired tissue through deep cell stimulation** resulting in tissue regeneration and healing.

- The first choice in the treatment of chronic pain of the musculoskeletal system, calcifications and impaired tendons or bone nonunions.
- Expanding your addressable patient population who
- have joint and tendon pain
- are not candidates for surgical intervention
- are looking for a non-invasive treatment alternative, without drugs or local anesthetics

MECHANISM OF ACTION

Shock waves are transient acoustic waves which have the unique ability to transmit high energy to painful spots of the myoskeletal system.

- The high energy shock waves were originally used to disintegrate the tissue, such as treatment of kidney stones.
- Over the last 10 years, SHOCKWAVE THERAPY gained its popularity in the treatment of chronic issues of the musculoskeletal system and is supported by many clinical studies presenting its healing and reparative effects on the tissue.



Shock waves are characterized by the fast and high rise of positive pressure followed by a longer period of decreasing pressure.



1st Shock waves spread through the tissue and reach the impaired area.



2nd Shock waves cause cell stimulation and growth factor release. Cells proliferate and differentiate.



3rd This results in tissue regeneration.



MEDICAL EFFECTS AND INDICATIONS

The most common **SHOCKWAVE THERAPY** applications are treatment of chronic musculoskeletal pain resulting from tendinopathies, trigger points, elimination of calcifications and stimulation of bone nonunions.



PATELLAR TENDINOPATHY, COURTESY OF AZAEL A. FLORES SALINAS, M.D.

CHRONIC PAIN RELIEF

Due to mechanical stimulation of thick nerve fibres, **SHOCKWAVE THERAPY** relieves pain through Gate Control Theory as well as decreases the level of substance P. This leads to:

- increased blood circulation
- reduction of local ischaemia
- disruption of the pain cycle
- long-lasting pain relief

AFTER SHOCKWAVE THERAPY





SHOULDER CALCIFICATION, COURTESY OF: BTL

REPAIR OF DAMAGED TISSUE

The stimulation of impaired tissue releases growth factors responsible for regeneration. Based on this principle, the **SHOCKWAVE THERAPY** can be used to:

- cause neovascularization for ingrowth of new vessels and improved blood supply in the impaired tissue
- trigger fibroblast proliferation and increase collagen synthesis for accelerated tendon regeneration
- release bone morphogenetic protein (BMP) for mesenchymal cell differentiation and osteogenesis in bone nonunions
- stimulate the growth of new lymphatic vessels which aid to reabsorb calcium deposits in the tissue

AFTER SHOCKWAVE THERAPY



DIFFERENT SHOCKWAVE THERAPIES

Did you know that **FOCUSED** and **RADIAL SHOCKWAVE THERAPY** have the same medical effect, but differ from the technical aspect as well as clinical indications?





FOCUSED SHOCKWAVE allows for adjustable penetration depth with constant maximal intensity. The therapy is suitable for treatment of both superficial and deep-lying tissues.

RADIAL SHOCKWAVE allows for changing the character of shocks by using different transmitters. However, the maximum intensity is concentrated superficially. The therapy is suitable for treatment of superficially lying tissues.



An electroacoustic lens

FOCUSED SHOCKWAVE is based on **electroacoustic principles**. Inside of the applicator, there is a complex consisting of the single piezoelectric crystal and an electroacoustic lens.

The device creates a high voltage which deforms the crystal and creates an acoustic pressure wave. The wave is then shaped convergently and spreads through the patient's body.



RADIAL SHOCKWAVE is based on **pneumatic principles**. The energy is created by transferring compressed air under large pressure from the device into the applicator.

The energy of the air is translated onto the projectile which is consequently pushed at high speed against the transmitter at the end of the applicator. The wave is then shaped divergently and spreads through the patient's body.

PARAMETERS

FOCUSED SHOCKWAVE THERAPY

- Intensity is expressed by Energy Flux Density (EFD)
- A typical session applies between 1000-3000 shocks
- The depth of penetration is adjusted according to the impaired tissue by using only 3 coupling pads



RADIAL SHOCKWAVE THERAPY

- Intensity is expressed by pressure and defined in Bars
- Typically, a session applies 4000-6000 shocks
- The energy distribution, as well as the intensity of the shocks, can be changed by using different transmitters



15 mm steel focused transmitter for targeted applications 9 mm steel transmitter for acupuncture points 9 mm prolonged transmitter for deep-lying trigger points

Universal 15 mm steel multifocused transmitter for all applications 15 mm titanium transmitter for deeply located pathologies

20 mm vibrating transmitter for muscles and fascias 36 mm vibrating transmitter for large muscle groups and fascias

THERAPY PROCEDURE

FOCUSED SHOCKWAVE THERAPY

BEFORE THE THERAPY



THERAPY TECHNIQUES



1st Use the "swiveling" technique to treat the most painful spot.



2nd Use the "painting" technique to treat surrounding of the most painful spot.

RADIAL SHOCKWAVE THERAPY

BEFORE THE THERAPY



THERAPY TECHNIQUES







1st Use the "painting" technique around the most painful spot.

2nd Use the "swiveling" technique to treat the most painful spot.

3rd Use the "painting" technique to treat related areas.

PRODUCT HIGHLIGHTS

FOCUSED SHOCKWAVE THERAPY

Technology

- A whole new **patented** electroacoustic technology
- The only technology offering the highest lifespan of 3 million shocks with constant intensity

Parameters

- The perfect balance between high **Energy Flux Density** (0.65 mJ/mm²) and optimal **Focal Zone** size (5×35 mm)
- The highest frequency range on the market for a wide spectrum of indications

Applicator

- Intelligent applicator with continuous monitoring of shock intensity and touch screen display
- Adjusting parameters directly from the applicator display
- Easy maintenance and **liquid-free** circuit
- Switch & Go applicator replacement service

Additional features

• Presets with therapeutic encyclopedia

Therapy

• Adjustable depth of penetration of up to 65 mm by using only 3 coupling pads





RADIAL SHOCKWAVE THERAPY

Technology

- The strongest portable radial SHOCKWAVE weighing only 7 kg Wide range of transmitters for different indications
- 2 million shocks lifespan

Parameters

• Pressure up to **5 bars** and frequency up to **22 Hz**

Applicator

• Ergonomic applicator with easy maintenance

Therapy

Additional features

• Presets with therapeutic encyclopaedia





FOCUSED SHOCKWAVE THERAPY CLINICALLY TESTED IN INDEPENDENT STUDIES

ESWT COMPARED WITH SURGERY FOR HYPERTROPHIC LONG-BONE NONUNIONS

EXTRACORPOREAL SHOCKWAVE THERAPY COMPARED WITH SURGERY FOR HYPERTROPHIC LONG-BONE NONUNIONS

Cacchio A, Giordano L, Colafarina O, Rompe JD, Tavernese E, loppolo F, Flamini S, Spacca G, Santilli V.

Department of Physical Medicine and Rehabilitation; Division of Orthopaedic Surgery, Department of Surgery, "San Salvatore" Hospital of Vaquila; Physical Medicine and Rehabilitation Centre, Nomentana Hospital, Rome; Department of Physical Medicine and Rehabilitation, School of Medicine, "La Sapienza" University, Rome, Italy Published: The Journal of Bone & Joint Surgery, 91(11), 2589-2597.

HIGHLIGHTS

- 126 patients with bone nonunions.
- Compare effect of surgery and FSWT in long-bone hypertrophic nonunions.
- FSWT comparing to surgical intervention.
- X-ray
- FSWT is as effective as a surgery at 3- and 12-month follow-ups.



SWT FOR CHRONIC PLANTAR FASCIITIS IN RUNNING ATHLETES

SHOCKWAVE APPLICATION FOR CHRONIC PLANTAR FASCIITIS IN RUNNING ATHLETES

Rompe JD, Decking J, Schoellner C, Nafe B.

Department of Orthopaedics, Johannes Gutenberg University School of Medicine, Mainz, Germany Published: Am J Sports Med, 2003, 31(2), 268-275.

HIGHLIGHTS

- 145 patients with chronic intractable plantar pain.
- To achieve pain relief.
- 6 tx with FSWT compared to sham treatment.
- VAS
- Significant pain reduction maintained during 3-month follow-up.



ESWT PROMOTES CELL PROLIFERATION AND COLLAGEN SYNTHESIS OF PRIMARY CULTURED HUMAN TENOCYTES

EXTRACORPOREAL SHOCKWAVE THERAPY PROMOTES CELL PROLIFERATION AND COLLAGEN SYNTHESIS OF PRIMARY CULTURED HUMAN TENOCYTES

Vetrano M, d'Alessandro F, Torrisi MR, Ferretti A, Vulpiani MC, Visco V.

Faculty of Medicine and Psychology, Sant'Andrea Hospital, Rome, Italy Published: Knee Surgery, Sports Traumatology, Arthroscopy, 19(12), 2159–2168.

HIGHLIGHTS

- Tendon from patient undergoing arthroscopy.
- To measure the amount of collagen synthesis by tenocytes.
- Samples receiving single FSWT application compared to samples without FSWT application.
- Dye-binding method and collagen quantitation.
- FSWT strongly stimulated in vitro collagen production.





RADIAL SHOCKWAVE THERAPY CLINICALLY TESTED IN INDEPENDENT STUDIES

ESWT IN THE TREATMENT OF CHRONIC PLANTAR FASCIITIS

EXTRACORPOREAL SHOCKWAVE THERAPY IN THE TREATMENT OF CHRONIC PLANTAR FASCIITIS

Husseiny M.

Rheumatology & Rehabilitation Department, Faculty of Medicine Zagazig University Published: Zagazig University Medical Journal, 2009, 15/1, 73–82.

HIGHLIGHTS

- 90 patients with chronic plantar fasciitis.
- Evaluate efficacy of RSWT in chronic plantar fasciitis.
- 4 tx of RSWT compared to sham treatment.
- VAS
- RSWT is a non-invasive, safe and effective treatment for chronic plantar fasciitis.



EFFECT OF **RSWT** ON PAIN AND MUSCLE HYPERTONIA IN MULTIPLE SCLEROSIS

EFFECT OF RADIAL SHOCKWAVE THERAPY ON PAIN AND MUSCLE HYPERTONIA: A DOUBLE-BLIND STUDY IN PATIENTS WITH MULTIPLE SCLEROSIS

Marinelli L, Mori L, Solaro C, Ucceli A, Pelosin E, Currà A, Molfetta L, Abbruzzese G, Trompetto C.

Department of Neuroscience, Rehabilitation, Ophthalmology, Genetics, Maternal and Child Health; University of Genoa Published: Multiple Sclerosis Journal, 21/2015, 622-629.

HIGHLIGHTS

- 68 patients with multiple sclerosis and painful hypertonia.
- Evaluate efficacy of RSWT in ankle extensor muscles hypertonia.
- 4 RSWT tx compared to sham treatment.
- VAS and MAS
- RSWT reduces pain and hypertonia without adverse effects.



CHRONIC PLANTAR FASCIITIS TREATED WITH TWO SESSIONS OF **RSWT**

CHRONIC PLANTAR FASCIITIS TREATED WITH TWO SESSIONS OF RADIAL EXTRACORPOREAL SHOCKWAVE THERAPY

Ibrahim M, Donatelli R, Schmitz Ch, Hellman M, Buxbaum F.

Rocky Mountain University of Health Professions, Orthopeadics, Brooklyn, NY, USA Published: Foot & Ankle International, 2010, 31(5), 391-397.

HIGHLIGHTS

- 50 patients with unilateral chronic plantar fasciitis.
- Evaluate efficacy of RSWT in chronic plantar fasciitis.
- 2 RSWT tx compared to sham treatment.
- VAS
- VAS was reduced after 4-week, 12-week and 24-week follow-ups.





MAXIMIZE YOUR PATIENTS DATABASE!

To boost your patients' interest in **SHOCKWAVE THERAPY** treatment, BTL provides its customers with promotional materials. These materials include prints (banners, patient brochures) for placement in the waiting room or to hand out, as well as online materials.



IN-OFFICE BRANDING

Learn how to implement SHOCKWAVE THERAPY branding in high-traffic areas in your office by using patient brochures, roll-up banners and videos.



IN-OFFICE COMMUNICATION

We will provide you with documents that will help you effectively communicate the treatment to your patients. Train and support all personnel who will be responsible for phone and face-to-face communication on how to effectively talk about SHOCKWAVE THERAPY.



MAXIMIZING YOUR PATIENT DATABASE

BTL will provide you with ready-made e-blast template you can send to inform everybody that you now offer the SHOCKWAVE THERAPY for fully non-invasive and side-effect free pain management of chronic pain!



SOCIAL MEDIA STRATEGY

Start promoting SHOCKWAVE THERAPY on your social media account including Facebook, Instagram and Twitter from day 1. Let your patients know that you have something new and revolutionary for them!



WEBSITE PROMOTION

Optimize your practice's website by promoting SHOCKWAVE THERAPY to generate leads.



CLINICAL TRAINING

Our trainers will help you to become SHOCKWAVE THERAPY clinical expert. This is the key to successful patient outcomes and satisfaction.

THEIR WORD MATTERS



Krzysztof Kijewski Poland

"It is a non-invasive, safe and efficient method. In approximately 10 days, Shockwave therapy treatments can reduce pain in extremity motor function disorders acquired through competitive sports in 84% of cases."



Alvaro Torres de Mérida Mexico

"The experience we have had with SWT has been fabulous, the most common cases are plantar fasciitis and heel spur, where we had excellent results. We have treated 65 patients with the conditions that they had had suffered from for 7, 5 and 3 years including pain. They have improved by 90% after the SWT treatment."



Werner Zehnder Switzerland

"I had surprisingly great success in various applications with the BTL Shockwave therapy device. Especially with restricted movement of the shoulder and also with trigger finger."



Mario William Marín Pando

Peru

"I have observed the best results in myofascial pain, tendinopathies, plantar fasciitis, epicondylitis and delayed bone healing in small bones. The treatment was side-effect free and effective in more than 85% of treated patients."



Stephanie Arias Costa Rica

"Nothing cooler than starting the work day with the best BTL technology. The Shockwave unit is a specialized treatment in management and control of chronic muscle and tendon injuries! With 100% effectivity and results, along with a good rehabilitation program! Indications: Achilles tendinosis and heel spurs, chronic muscle strains, painful shoulder, tennis elbow, trigger points and other! In FisioSaludStar we already have this technology."



Romano De Santis Italy

"I used BTL-6000 FSWT on different frozen shoulder pathologies, elbows with articular block, heel spurs, Achilles tendinopathies, and sports muscle lesions. I had good results since the first therapies."



David Garcia Tapia The Dominican republic

"Excellent results with our BTL Shockwave in patellar and spuraspinatus tendinopathies, epicondylitis, Achillodynia and plantar fasciitis. Our patients are our best advertisement."



Gernot Seppel Germany

"Focused Shockwave is superior to all other treatment options, and above everything else, non-invasive."

THE BEST SOLUTION FOR

TR-THERAPY

Constantly hearing from your patients that they are tired and their muscles feel very stiff? TR-THERAPY:

- Relieves muscle pain and soreness
- Eliminates muscle fatigue
- Regenerates muscles



Are your patients shortly after surgery or injured? Do you want to help them recover faster? Did you know that our HIGH INTENSITY LASER and ROBOTIC SCANNING SYSTEM speed up healing through a natural process of energy transfer on a cellular level called biostimulation? This contributes to healing and tissue regeneration in:

- Acute pain
- Muscle strain
- Joint sprain
- Muscle injury



Thanks to BTL's high-end technologies, you can selectively target different tissues and achieve the best therapeutic results.

ANY OF YOUR PATIENTS



SUPER INDUCTIVE SYSTEM

Nerve damage can significantly decrease your patients' quality of life. Help them restore nerve function and overcome their pain with the SUPER INDUCTIVE SYSTEM using the high-intensity electromagnetic field energy.

- Blocked back
- Muscle strengthening
- Fractures
- Recovery after a stroke



SHOCKWAVE THERAPY

Chronic pain will not limit your patients anymore. Degenerative processes in tendons lead to their stiffness which is hard to address with manual techniques or stretching. SHOCKWAVE THERAPY provides fast pain relief and mobility restoration through mechanical stimulation in:

- Shoulder pain
- Tennis elbow
- Runner's knee
- Achilles tendon
- Heel pain

A SOLUTION FOR ANY OF YOUR PATIENTS

EXPLANATION	RADIAL SHOCKWAVE THERAPY	FOCUSED SHOCKWAVE THERAPY	HIGH INTENSITY LASER	TR-THERAPY	SUPER INDUCTIVE SYSTEM
Energy	divergent acoustic wave	convergent acoustic wave	laser light	radiofrequency current	electromagnetic field
Mechanism of action	superficial mechanical stimulation	deep mechanical stimulation	laser biostimulation	thermic effect	nerve depolarization
Key tissue	tendon	tendon, bone	cellular repair	muscle	nerve
Medical effect	healing start-up in superficial tendinopathies, chronic pain management	elimination of calcifications, healing of bone non-unions and tendinopathies at tendon-bone junction	healing of acute injuries anti-inflammatory effect acute pain management	muscle spasm relaxation muscle regeneration oedema removal	joint mobilization muscle stimulation and relaxation pain management
Penetration depth	up to 5 cm, maximum intensity spread superficially	adjustable depth of focal zone within range 0-35 mm, 15-50 mm, 30-65 mm	up to 10 cm	anywhere between electrodes	up to 10 cm
Application	manual	manual	operator free/manual	manual	operator free
Patient perception	pressure sensation up to mild discomfort	pressure sensation up to mild discomfort	intense heat	intense heat	muscle contraction or tingling
Medical branch	orthopaedics, PRM*, PT**	orthopaedics, PRM	orthopaedics, PRM, PT, sports medicine	PT, sports medicine	orthopaedics, PRM, neurology, PT
Application limits	any acute stage, spine area, head area	any acute stage, spine area, head area, organs with gas content	sensory deficit, safety requirements	sensory deficit, experienced manual therapist	head area, metal and electronic implantable devices
Disposables	shell, gel	pads, gel	none	cream, single-use electrode (optional)	none
Number of treatments	10 sessions	5 sessions	5-10 sessions	5-10 sessions	5-10 sessions
Application frequency	up to twice a week	once a week	up to daily	up to daily	up to daily
Treatment duration	10 min	5 min	5-15 min	minimally 15 min	up 10 min

NO 2 PATIENTS ARE ALIKE

INDICATION	RADIAL SHOCKWAVE THERAPY	FOCUSED SHOCKWAVE THERAPY	HIGH INTENSITY LASER	TR-THERAPY	SUPER INDUCTIVE SYSTEM
Acute back pain	N/A*	N/A	1 st CHOICE	OPTIONAL	2 nd CHOICE
Chronic back pain	OPTIONAL	OPTIONAL	OPTIONAL	1 st CHOICE	2 nd CHOICE
Degenerative joint disorder	2 nd CHOICE	1 st CHOICE	OPTIONAL	OPTIONAL	OPTIONAL
Joint sprains	N/A	N/A	1 st CHOICE	OPTIONAL	2 nd CHOICE
Degenerative disorder of spine	N/A	N/A	2 nd CHOICE	OPTIONAL	1 st CHOICE
Rheumatoid diseases	N/A	N/A	1 st CHOICE	OPTIONAL	2 nd CHOICE
Calcifications	2 nd CHOICE	1 st CHOICE	OPTIONAL	OPTIONAL	OPTIONAL
Enhancement of fracture healing	N/A	2 nd CHOICE	OPTIONAL	N/A	1 st CHOICE
Bone non-union	N/A	1 st CHOICE	N/A	N/A	N/A
Joint blockage	N/A	N/A	OPTIONAL	2 nd CHOICE	1 st CHOICE
Muscle atrophy	N/A	N/A	N/A	2 nd CHOICE	1 st CHOICE
Muscle hypertonus	2 nd CHOICE	OPTIONAL	OPTIONAL	1 st CHOICE	OPTIONAL
Muscle regeneration	OPTIONAL	OPTIONAL	2 nd CHOICE	1 st CHOICE	OPTIONAL
Muscle injury	N/A	N/A	1 st CHOICE	2 nd CHOICE	OPTIONAL
Myofascial syndrome	2 nd CHOICE	OPTIONAL	OPTIONAL	1 st CHOICE	OPTIONAL
Spasticity	2 nd CHOICE	2 nd CHOICE	OPTIONAL	OPTIONAL	1 st CHOICE
Tendinopathy	1 st CHOICE**	1 st CHOICE***	OPTIONAL	OPTIONAL	OPTIONAL
Nerve damage	N/A	N/A	2 nd CHOICE	OPTIONAL	1 st CHOICE
Sports injuries	N/A	N/A	1 st CHOICE	2 nd CHOICE	OPTIONAL
Post-traumatic oedemas	N/A	N/A	2 nd CHOICE	1 st CHOICE	OPTIONAL

BTL: OVER 25 YEARS OF INNOVATION



More than 55 offices around the globe



1,500 employees worldwide



More than 300 engineers



2 focused divisions: medical and aesthetics

Growing to meet your needs



1993 Continuous growth worldwide



OUR COMMITMENT TO YOU

BTL will:

- Provide safe and efficacious solutions of the highest quality
- Offer technology with NO costly consumables
- Continue to offer an affordable upgrade programs

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