

ESWT

EXCELLENCE
Shock Wave Therapy

ESWT

Orthopedic Shock Wave Therapy

Excellence Shock Wave Therapy

Corporate Office

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Stage I: Tendonitis/Fasciitis

- Known as acute tendonitis or fasciitis
- Inflammation of the tendon or fascia
- Responds to inflammatory & immobilization therapies

ESWT is not used, nor it is effective for the treatment of acute fasciitis or tendonitis.

Tendonopathy - Tendonitis vs. Tendinosis

Stage II - Tendinosis/Fasciosis

- Known as “chronic”
- Does not respond to conservative therapy
- **Inflammation is NOT the cause of the pain**
- Tissue is degenerative commonly due to aging, trauma or vascular compromise
- Is visible on ultrasound
- Soft tissue malunion to the bone – fiber separation, vascular spaces with or without neovascularization, necrosis or calcification
- Responds to Extracorporeal Shock Wave Therapy when at or near a tendon/bone interface
- *Patients must understand their problem is not inflammation and has moved on to a degenerative stage that must be repaired.*

Degenerative Tendinosis



PHYSICAL EXAM and TREATMENT INDICATIONS

- Patient must have pain on palpation
- 6 months history of pain
- 3 conservative treatments
- *No need to EXHAUST conservative therapy-ESWT is not surgery*
- Choose patients with typical classic pain symptoms
- Rule out neurological problems, arthrosis, nerve entrapment, ruptures, systemic inflammatory diseases and/or partial tears
- Examine biomechanical of upper and lower extremities
- Examine all joints proximal and distal to the treatment site
- Ultrasound
- Always perform an XRAY and discuss findings

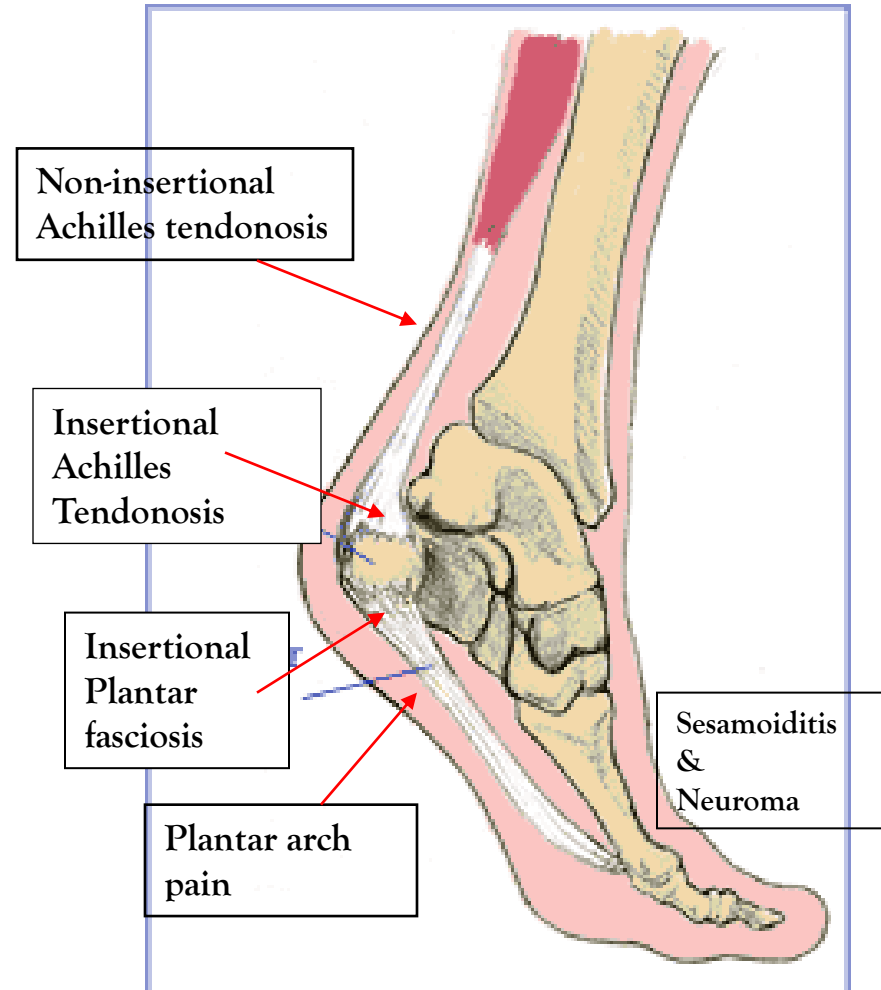
Inform before ESWT! Point out other problems before ESWT such as Equinus, posterior tibial tendon, neuroma, and Peroneal brevis tendonitis. Inform the patient these will be treated separately from the ESWT.

Plantar Fasciosis – Stage II

- Must have first step morning pain and/or pain after rest
- Rule out tarsal tunnel
- Rule out Baxter's nerve entrapment
- Rule out Posterior Tibial Dysfunction
- Rule out stress fracture (lateral squeeze test or MRI if concern)

Achilles Tendonosis – Stage II

- Must have first step morning pain and/or pain after rest
- Rule out partial tear
- Always order a pre-ESWT MRI if history of steroid injections in the achilles
- Rule out stress fracture (lateral squeeze test or MRI if concern)
- Calcification is inconsequential to ESWT in the achilles tendon
- ESWT is not used for haglund's deformity



Benefits of Extracorporeal Shock Wave Therapy

- Curative procedure that replaces surgery (neovascularization)
- Immediate ambulation
- No post-operative narcotics
- No casts, crutches, or immobilization devices (routinely) for tendons or fascia
- Most Plantar fasciia and tendonopathy patients can return to work with limited loss-time
- No risk of infection
- No biomechanical damage from fascial release
- No nerve entrapment complications
- No hospitalization
- No general anesthesia or IV Sedation needed

The Podiatry Institute Manual 2nd Edition

Intervention	Stage 1	Stage II	Stage III	Stage IV
Pharmacological	NSAID	NSAID		
	Local Steroid Oral Steroid			
Biomechanical	Low Dye strap Prefabricated Orthotic	Custom orthotic Roller sole	Immobilization	
Physical	Ice Flexibility	Iontophoresis	Night Splint Dynamic Splint	
Surgical			ESWT	Cold Ablation Micro- debridement Fasciotomy Spur Resection Bursectomy

American College of Foot & Ankle Surgeons' Preferred Practice Guidelines

“A treatment modality to be used before foot surgery is to be considered.”



Two effects of shockwave

1. **Short term analgesic effect** –Hyper-stimulation produce analgesic effect causing temporary pain relief and enhances regional anesthesia during treatment.

This occurs in both low and high energy ESWT.

2. **Long term – Occurs only in high energy ESWT**

- Microtrauma of degenerative tissue forces healing
- Fibroblasts are laid down creating stronger tissue than before treatment
- Microtrauma leads to repair of the tendonosis/fasciosis

What causes the microtrauma?

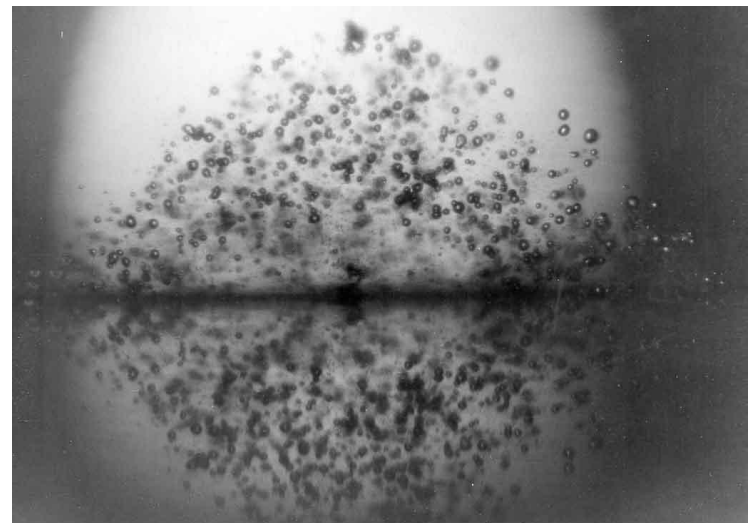
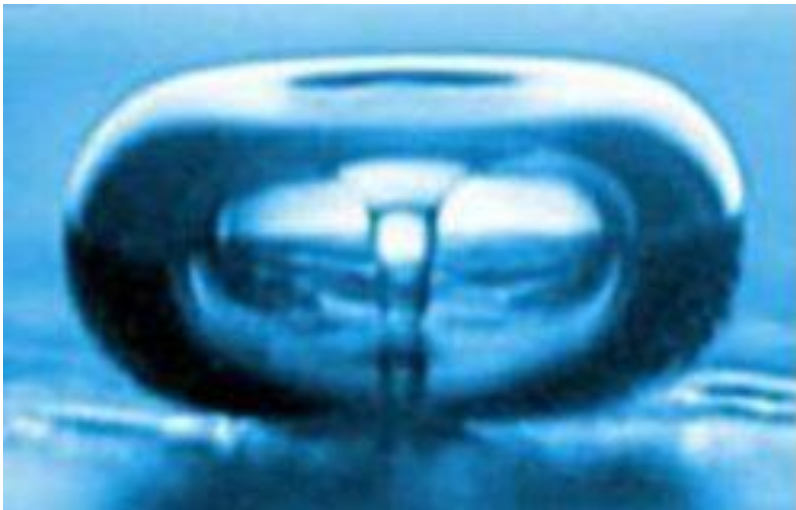
Microtrauma on a cellular level created due to the interaction of the shockwave with the tendon structure is the cause of high energy ESWT tissue change

The microtrauma is caused by Cavitation

Cavitation in ESWT

Tendon is made of water, the shockwave causes the water to breakup locally. This creates small gas bubbles within the tissue which move around rapidly creating shearing and microtrauma. The body is forced to heal the newly created microtrauma.

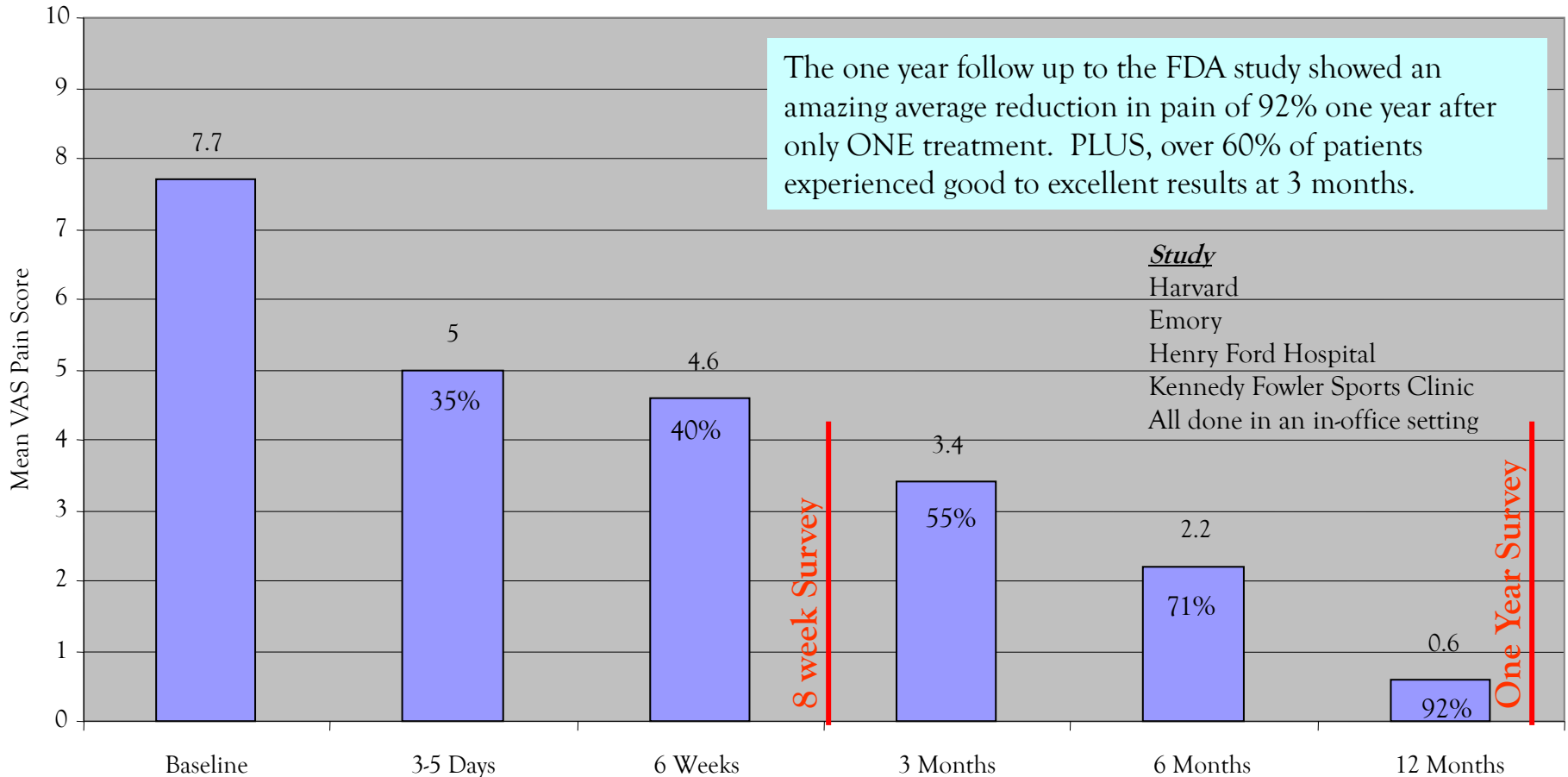
Patients are instructed to drink fluids before treatment for hydration.



Note on study Levels

- o Level I: **highest** (blinded, randomized, placebo-controlled)
- o Level II- non-randomized, placebo controlled
- o Level III- non-randomized, case-cohort, prospective
- o Level IV: retrospective
- o Level V: expert opinion

One Year FDA Follow Up-Plantar Fasciitis Mean VAS Pain Score - Active Treated Patients



Equipment Comparison

One Year Follow Up – Roles & Maudsley Pain Evaluation

Dornier EPOS Ultra – Ultrasound focused high energy ESWT

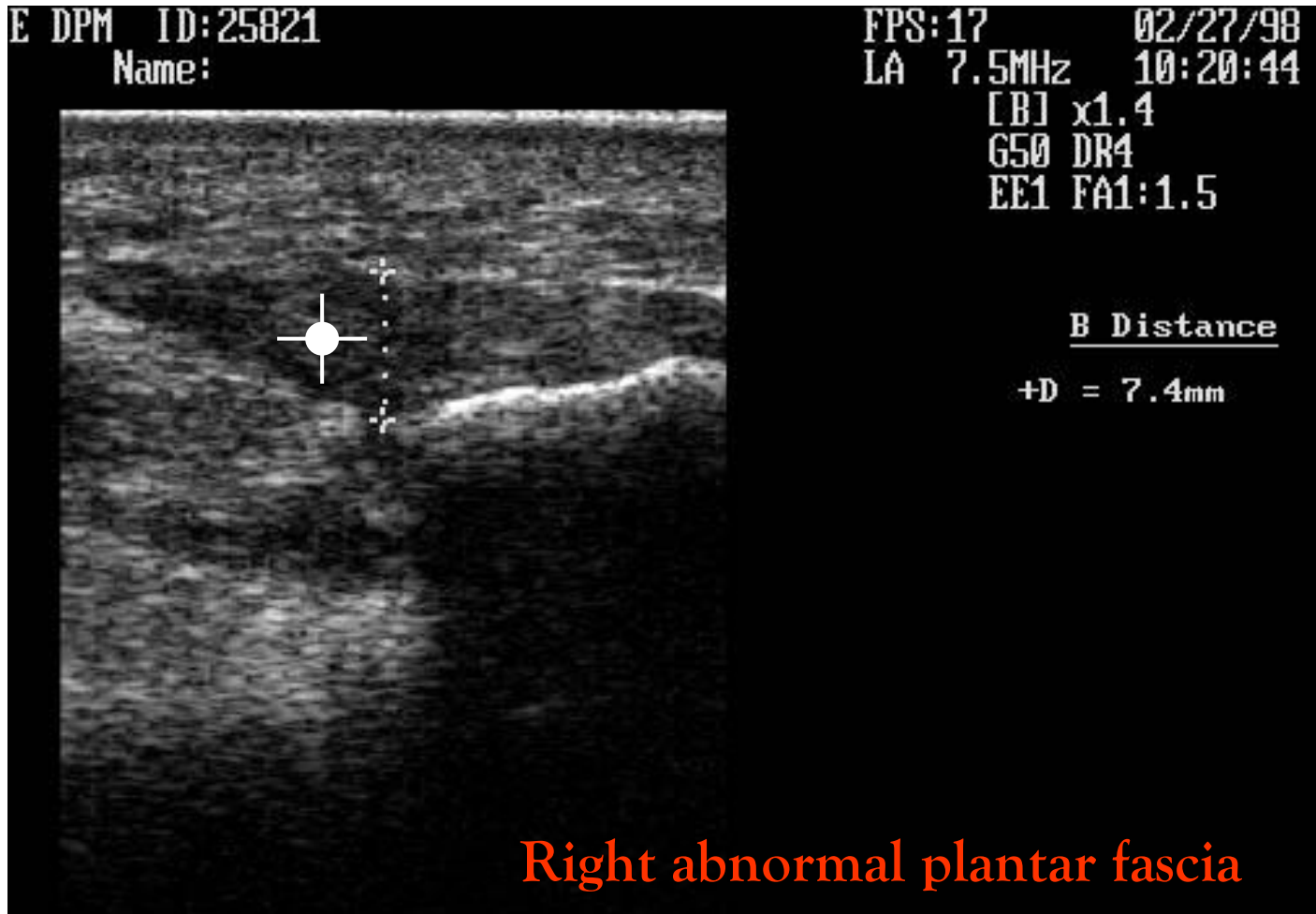
<i>Grade</i>	<i>Percentage</i>
Excellent/Good	94% (from 61.8% at 3 months)
Fair	6%
Poor	0%

The Dornier EPOS Ultra

FDA Class III approved for High Energy treatment of Chronic Plantar Fasciitis

Only the Dornier Epos Ultra targets the specific area to be treated using ultrasound





Normal fascia thickness 2 - 4 mm

Patients must truly understand:


- New diagnosis – Explain Stage 1 & Stage II or the difference between fasciitis/tendonitis and fasciosis/tendonosis. *The problem is not inflammation and has moved on to a degenerative stage that must be repaired.*
- Why they are a candidate
- Why ESWT is different from the previously failed treatments
- How ESWT repairs the fasciosis/tendonosis – Use analogies
 - Apple example
- Realistic expectations – ESWT takes time – Show chart with one year progress
- Positive expectations – Show chart with one year success

Who is an Excellence patient?

	Podiatry	MD	Self Treat	Passive
Heel Pain	9.4%	20.0%	50.4%	20.2%

- 90% of patients with heel pain are not being treated by podiatrists
- 70.6% of patients are not being treated by a physician
- ESWT candidates are sitting untreated in your patient database

Make insurance irrelevant.



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MEDICAL NECESSITY SUBMISSION

Please fill out the following information & also send copies of all 1st & 2nd insurance cards

Patient: _____ Patient DOB: _____ Sex: _____
 Street Address: _____
 City: _____ ST _____ Zip Code: _____ Email: _____
 Patient Phone #: _____ Insurance Company: _____
 Member ID #: _____ Group ID #: _____ Insurance Phone #: _____
 Primary Insurer's Name: _____ Is there a second insurance? _____
 Is your office in or out of network with this company? _____

PLEASE COMPLETE IN FULL - INSURANCE CANNOT BE VERIFIED WITHOUT THIS INFORMATION

Check Diagnosis

_____ Plantar Fasciitis - Chronic - FDA Approved

Post-tetanic dyskinesia (pain after rest) YES NO
 Pain on palpation: YES NO
 Normal circulation including arterial venous and lymphatic systems: YES NO

I certify this patient has chronic plantar fasciitis for at least 6 months and has had at least 3 failed conservative treatments (details below). We are using the Dornier EPOS Ultra high-energy single treatment FDA approved protocol for the treatment of chronic plantar fasciitis.

_____ Achilles tendonitis - off label

Post-tetanic dyskinesia (pain after rest) YES NO
 Pain on palpation: YES NO
 Normal circulation including arterial venous and lymphatic systems: YES NO

_____ INSERTIONAL
 _____ NON-INSERTIONAL

_____ Tennis Elbow - off label _____ Shoulder tendonitis - off label _____ Patellar tendonitis - off label

Patient Details

Length of Time suffering with condition: _____ Is this a retreat? YES NO

Previously unsuccessful conservative Treatment (Circle all that apply):

Orthotics/Insert/Medicine Casts/Immobilization Oral NSAIDS Steroid Injections
 Documented Home Stretching Plan Physical Therapy Night Splints

Date of last conservative therapy (must be within 3 weeks time): _____

Please list medications if NSAIDS were used in treatment: _____

Other failed treatments: _____

Circle Site - Left Right Bilateral

Is this patient on anticoagulants? YES NO (OH 3 days) Is this patient pregnant? YES NO (Can not treat)
 Does patient have a pacemaker? YES NO (Med clear required) Is this patient a diabetic? YES NO
 Has nerve entrapment been ruled out? YES NO

Does this patient have a history of phlebitis or blood clots? YES NO (Med clearance required)
 Does this patient have any condition that could affect the treatment or outcome? YES NO
 If yes explain: _____

Treatment Plan: Extra-corporeal Shock Wave Treatment (ESWT) - Procedure Code: _____ For ESWT Office Use

Practice Name: _____ Physician's Name: _____
 Practice Address: _____ City: _____ ST: _____ Zip Code: _____
 Physician's Signature: _____ Date: _____

Please fax the completed form to fax #: 856-769-8273