

Acoustic Wave Therapy

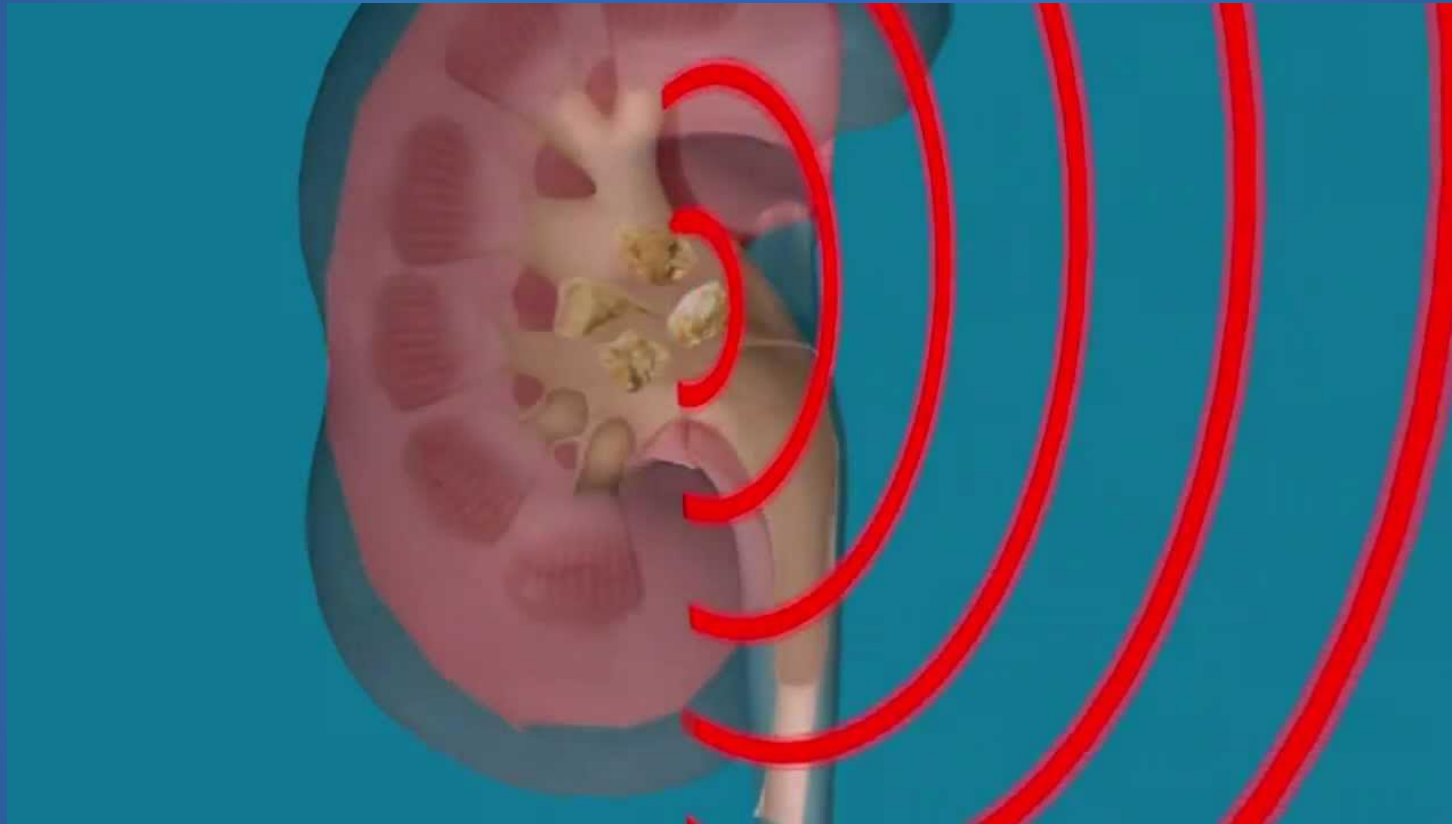
H.William Song,MD



Acoustic Wave



During WWII it was noted shock waves can damage human lung tissue without signs of outer physical trauma



1983 1st commercial Lithotripter introduced in Germany

HIFU

How HIFU Works

Ultherapy lifts and tightens skin gradually from the inside out—without surgery or downtime.



Weakened collagen fibers

Over time, changes to the skin tissue result in lines, wrinkles and sagging skin.



Ultrasound energy is delivered

Ultrasound energy is delivered non-invasively, triggering a natural response that stimulates the growth of new collagen.



Tighter skin in 2-3 months

Results appear gradually over 2-3 months and improvements can continue up to 6 months after treatment.

⊕ Brow

⊕ Chin

⊕ Neck

⊕ Décolletage

HIFU

Treatment Areas

Simulate Your Own Selfie Now.

That's right, click here to see what they would look like with Ultherapy

> "Try On" Now



Shock Wave Therapy

Many Names Same Treatment

- Shock Wave Therapy
- Acoustic Wave Therapy (AWT)
- Radial Shock Wave Therapy (RSWT)
- Extracorporeal Pulse Activation Technology (EPAT)
- Extracorporeal Acoustic Wave Therapy (ESWT)
- Lithotripsy (Kidney Stones)
- Orthotripsy (Plantar Fasciitis)
- Low Intensity Shockwave Therapy (LISWT) (ED)

Shockwave Technologies

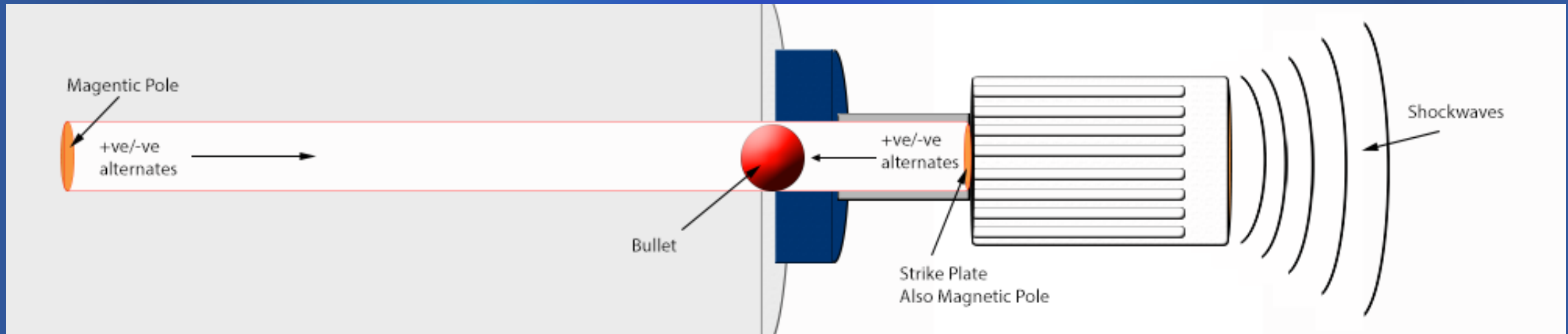
While there are numerous shockwave machines on the market today, they are all based on one of four basic shockwave (or shockwave-like) technologies.

Electrohydraulic shockwave

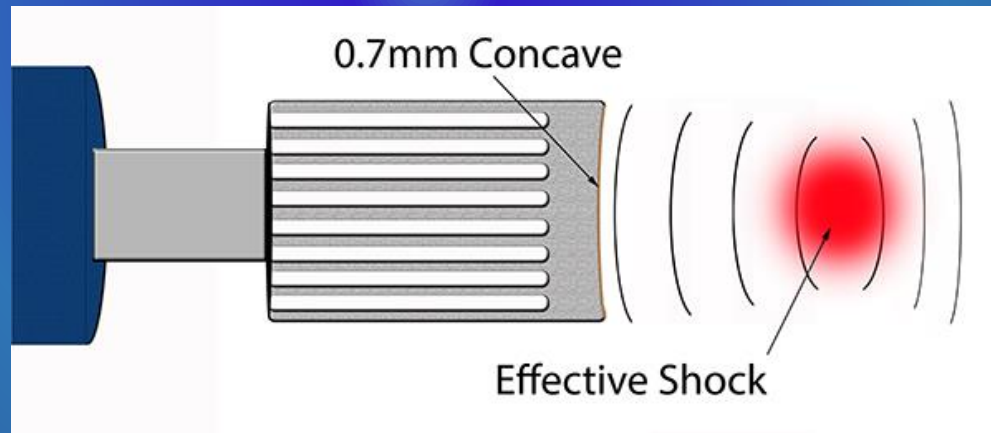
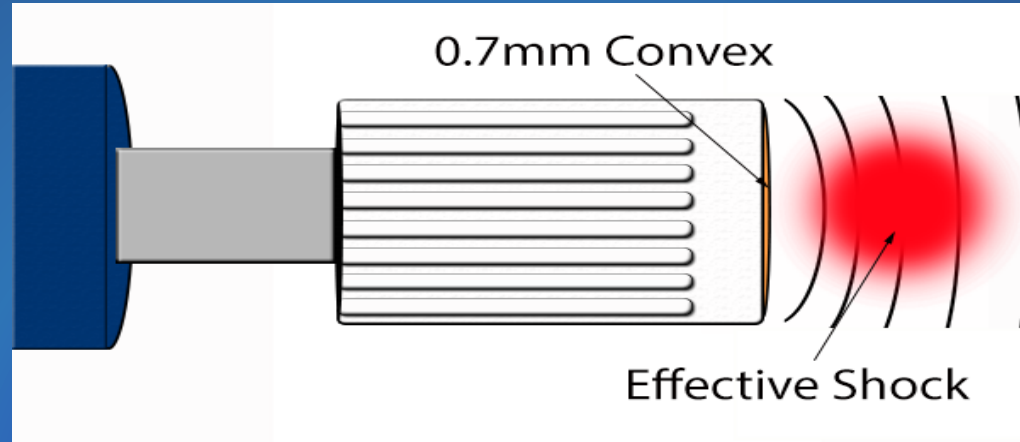
Electromagnetic shockwave

Radial pressure wave

Piezoelectric shockwave



Shockwave pulses are generated by using a projectile 5X heavier than the standard air-pressure systems and a reduced final velocity upon contact with the applicator.



LI-ESWT in vitro and animal studies

Research on the biological effects of LI-ESWT has mainly been focused on vasculogenesis and local neovascularization. Wang and colleagues [Wang *et al.* 2003] discovered that LI-ESWT stimulates the expression of angiogenesis-related growth factors, such as endothelial nitric oxide synthase (eNOS) and vascular endothelial growth factor (VEGF), and endothelial cell proliferation factors, such as proliferating cell nuclear antigen (PCNA). They also reported that LI-ESWT induces neovascularization, and consequently improves blood supply. Interestingly, they found that 1 week after LI-ESWT, the angiogenic marker levels rose significantly and this effect lasted for approximately 8 weeks. They also showed that neovascularization and cell proliferation were evident 4 weeks after LI-ESWT and persisted for more than 12 weeks. The same group [Wang *et al.* 2003] investigated the effect of LI-ESWT on neovascularization of the tendon-bone junction. For this purpose, LI-ESWT was applied to the Achilles tendon junction of 50 New Zealand rabbits. The extent of neovascularization was determined from the expression of VEGF, eNOS, and PCNA. They found that the number of neovessels and the expressions of the angiogenic markers and PCNA were substantially increased by LI-ESWT. This group previously reported similar findings in a smaller canine study [Wang *et al.* 2002] on the effect of this energy on bone–tendon junction in eight dogs: new capillaries and muscularized vessels were seen in obtained specimens 4 and 8 weeks after local LI-ESWT, with no change in the untreated sites.

Indications for AWT Treatment

- The Acoustic Wave Therapy System has an intended use for therapeutic muscle aches and pains specifically listed with the FDA under Title 21, part 890, subpart F, Sec 890.5660

Contra- Indications

- Do not apply to the eyes or surrounding area, the myocardium, spinal cord, gonads, kidneys, head, or liver
- Corticoid Therapy
- Patients with pacemaker or heart conditions
- Pregnant or nursing mothers
- Polypus in treatment area
- Thrombosis
- Tumor Diseases
- Polyneuropathy
- Acute Inflammation
- Growing Cartilage in children

POSSIBLE SIDE EFFECTS OF TREATMENT

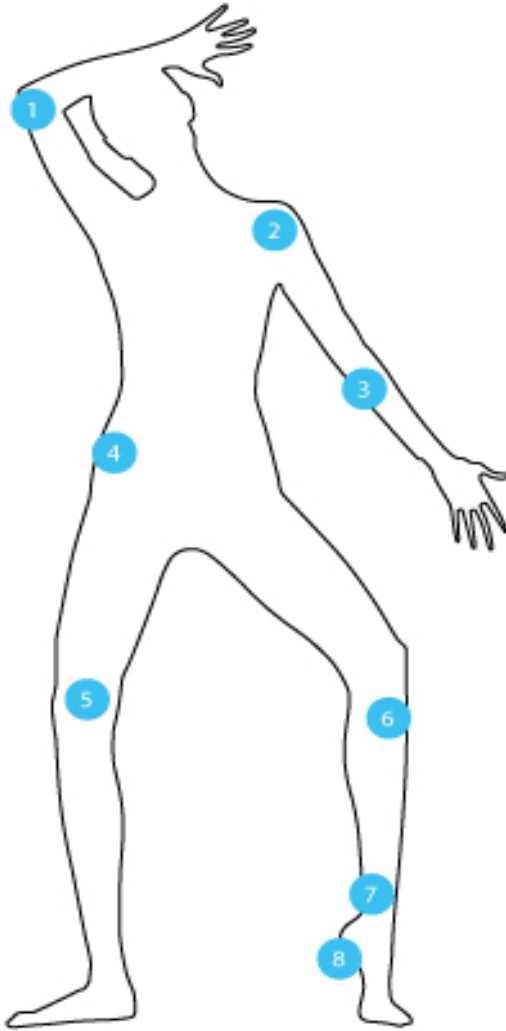
- Erythema
- Temporary loss of Bodily sensation at treatment site
- Temporary itching in treatment area
- Hematoma

All side effects usually subside within 24-48 hours

Practices That Use Shockwave Therapy

- Mens Health
- Physical Therapist
- Urologist
- Orthopedics
- Wellness Centers
- Rehabilitation
- Physiotherapist
- Sexual Medicine
- Sports Medicine
- Aesthetics

Traditional Indications Treated with AWT

<p>1 TENNIS ELBOW Painful inflammation of the tendon attachment on the lateral elbow</p>	
<p>2 SHOULDER PAIN WITH OR WITHOUT CALCIFICATION Painful limitation of shoulder movement</p>	
<p>3 GOLFER'S ELBOW Painful inflammation of the tendon attachment on the medial elbow</p>	
<p>4 BURSITIS TROCHANTERICA Painful periostitis of the hip</p>	
<p>5 PATELLA TIP SYNDROME Inflammation of the point of attachment of the patellar ligament</p>	
<p>6 TIBIAL EDGE SYNDROME Inflammation of the tibial edge due to excessive strain</p>	
<p>7 ACHILLODYNIA Painful irritation of the Achilles tendon</p>	
<p>8 PAINFUL HEEL Painful, mostly chronic inflammation of the heel</p>	
<p>INFLAMMATION OF THE TENDON ATTACHMENT Painful inflammation of tendon attachments due to overexertion or improper strain, or due to degenerative processes</p>	
<p>ACUPUNCTURE POINTS Pain therapy through that treatment of acupuncture points</p>	
<p>PAINFUL TRIGGER POINTS Acute and chronic pain in the back, shoulder, neck, etc. due to permanently shortened and thickened muscles</p>	

Common Indications of ESWT for Musculoskeletal Pains



Shoulder Impingement & Frozen Shoulder



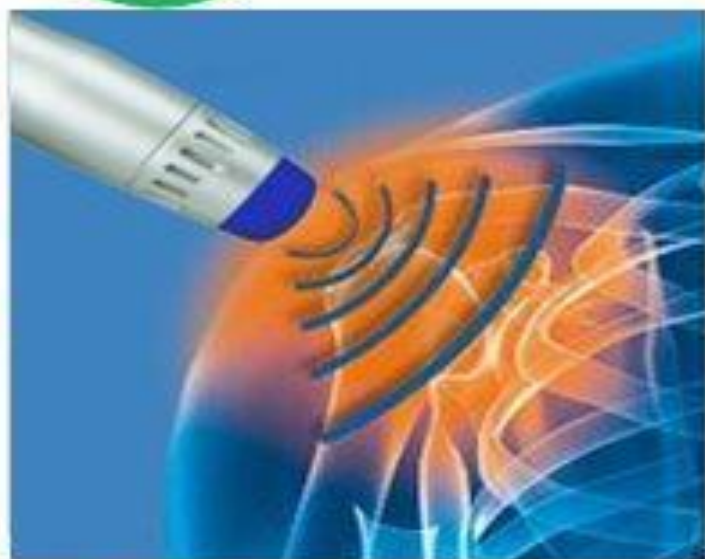
IT Band Syndrome



Golfer's Elbow
(Medial Epicondylitis)



Carpal Tunnel Syndrome



Tennis Elbow
(Lateral Epicondylitis)



Trigger Finger



Shin Splints



Achilles Tendonitis



Bunions



Plantar Fasciitis

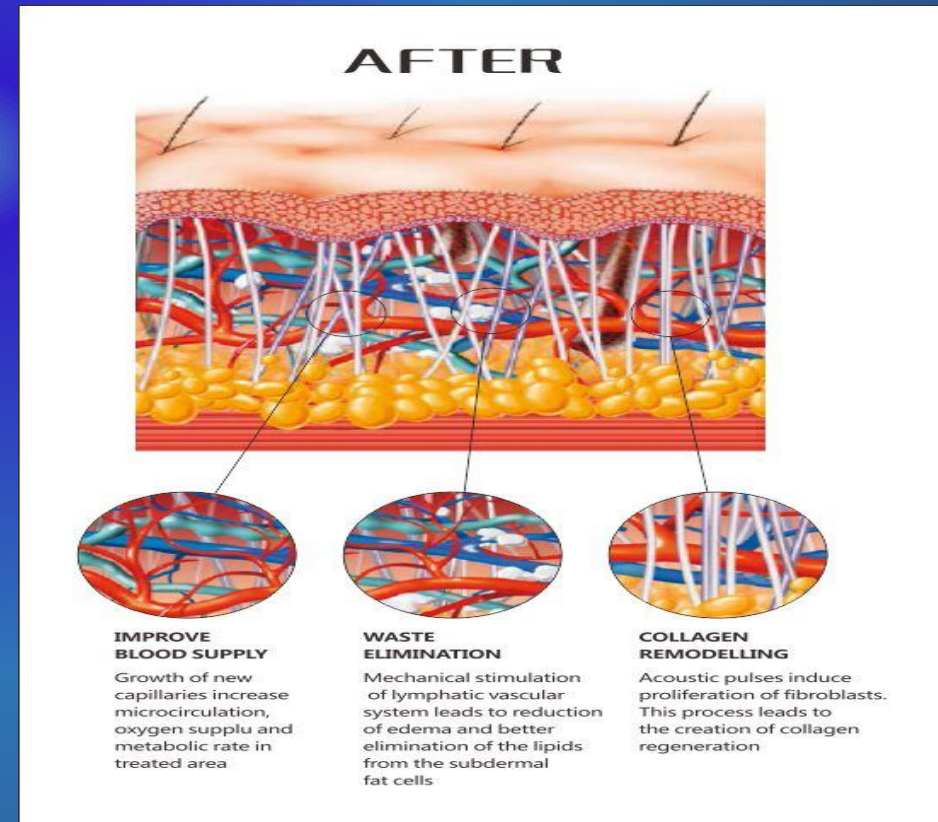
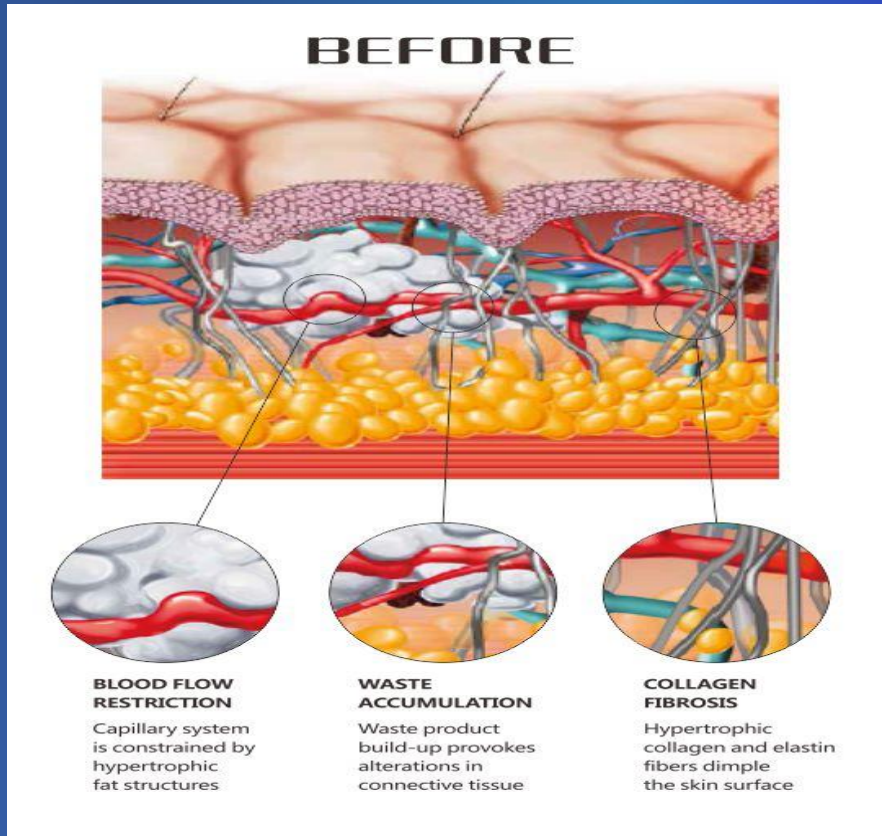
Aesthetic Applications

- Anti-cellulite therapy
- Improvement of uneven lipoplasty results
- Connective tissue tightening
- Skin rejuvenation and elasticity increase
- Lipoedema treatment
- Lymphatic system stimulation
- Appearance of stretch marks
- Minimizing unsightly scars
- Improves Muscle Tone
- Increases Skin Firmness

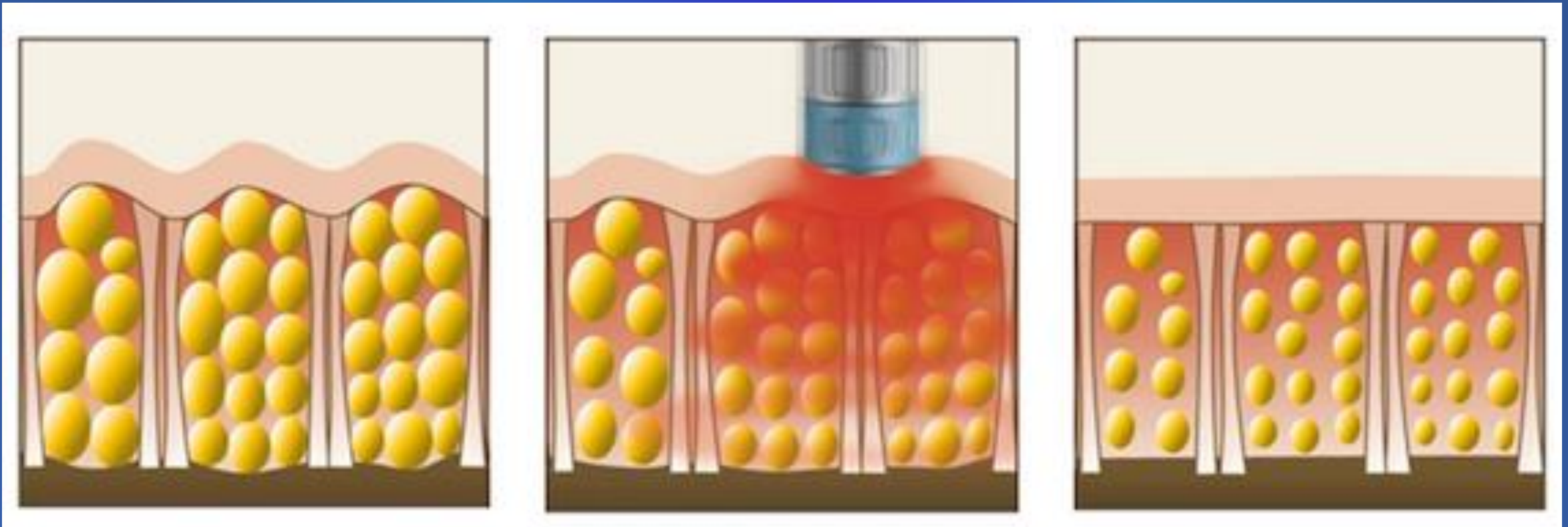
The effects of acoustic wave therapy on biologic tissue, including stimulation of micro-circulation and improvement of cell permeability. The pressure breaks up the collagen and releases the skin, allowing a smoother surface. The thickened dermis helps to reduce the protrusion of fat into the dermis. Again, this reduces the appearance of cellulite. With its ability to impact both of the major causes of cellulite, AWT is uniquely suited to improving the appearance of cellulite. Acoustic Wave therapy has also been used in pain control, it over stimulates nerves and increases blood flow to treated areas. This makes the treatments comfortable. At higher frequencies, the radial head can also increase muscle tone without exercise.

The mechanical action of AWT Acoustic Wave Therapy

1. Disrupts the connective tissue to firm and smooth the skin
2. Causes neo-vascularization, improving circulatory exchanges (the root cause of the problem)
3. Initiates an inflammatory process in the skin, leading to thicker, more elastic skin through collagen production
4. The elasticity of the connective tissue is restored and the skin is smoother, thicker and more elastic with noticeable improvement to the skin texture.



Acoustic Wave Treatment on Cellulite



Treatment Areas



Combination treatments

Shock wave therapy enhances results, shortens recovery time, and minimizes the occurrence of side effects.

- Radio Frequency
- Cryolipolysis
- Ultrasound
- Laser
- PRP
- P-Shot

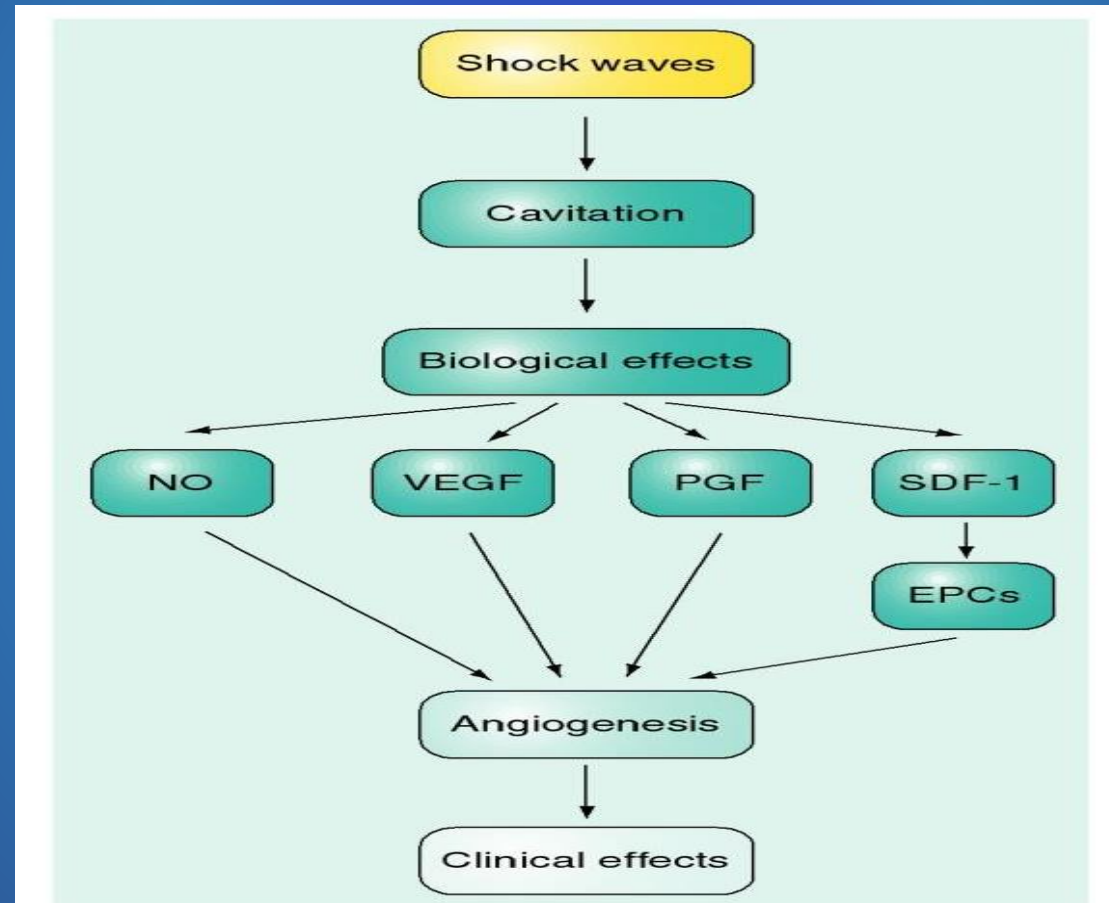
CoolSculpting Combination with CoolSculpting Treatments

Doubles the Fat Reduction
Accelerates the Fat breakdown &
Absorption

Cool Sculpting Combination with AWT



Biological Effects of AWT



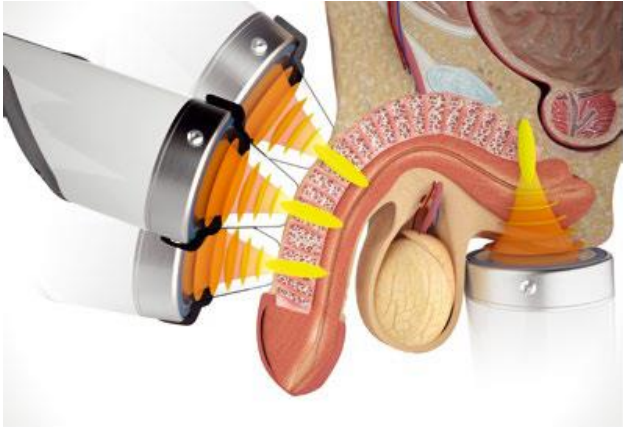
MENS HEALTH APPLICATIONS

- Non responders to Pde5i treatment became responders
- Combination with the P- shot to enhance results of both treatments
- Peyronie's Disease
- Combination with Laser to enhance the results of both treatments and reduce pain
- Sexual Enhancement (heightens performance by improving blood flow)
- ED

How does Shockwave Therapy Help ED

- Increases Angiogenesis and blood flow
- Quicker results with the combination of PRP & Shock wave therapy
- supply and oxygenation resulting in faster healing. Neovascularization
- Shockwave therapy combined with PRP increases local blood supply causing the release of additional growth hormones. These two processes together increase the stimulation and growth of new arterioles by increasing the number of growth factors tremendously with the combination therapy. The blood vessels improve the blood flow.

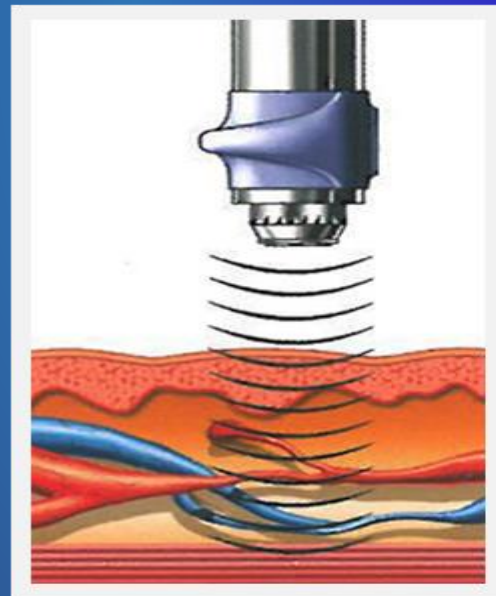
Benefits of Shockwave Therapy for Erectile Dysfunction



- Treats the cause, not just the symptoms
- Enables Spontaneous Erections
- Visible Results within 3 weeks
- Offers proven clinical long-term results
- Completely safe with no side effects
- Non-invasive, totally painless
- Triggers natural repair mechanisms by increasing blood flow
- Restores sex life with stronger, firmer, longer-lasting erections
- 70%+ Success Rate
- Compatible with other treatments

Erectile Dysfunction due to Blood flow

- utilizes high frequency, low intensity sound waves to improve blood flow to the penis. The sound waves repair aged blood vessels, stimulate growth of new blood vessels and remove decades of micro-plaque.
- Over 80% of Erectile Dysfunction issues are caused by poor blood flow.
- 52% of Men suffer from some form of ED



BEFORE



AFTER

ED Effectiveness with Shockwave



Musculoskeletal Applications AWT

Achilles Tendinopathy, Arthritis,
Diabetes,
Fibromyalgia,
Herniated or slipped discs, Migraines,
Multiple Sclerosis (MS),
Renaud's Disease (poor circulation in hands),
Scoliosis (Congenital & Postural – often treated as a secondary condition),
Spasticity (which is a symptom of many neurological conditions),
Spondylolysis or spondylolisthesis

AWT Devices

- Apex (Refine USA)
- CelluPulse (Storz Medical/ CuraMedix)
- Rejuvawave (Storz Medical)
- CellActor (Storz Medical)
- D- Actor (Storz Medical)
- Z Wave (Zimmer Aesthetics)
- BTL – X WAVE (Vanquish)
- BLT- Cellutone (Vanquish)
- Eclipse- Evive

AWT Devices



Consumables and Interchangeable Parts

Consumables

Transmitter Gel

Disposable Silicon Cap (dispose after each use)

Additional Parts

Transmitter Tips

Conclusion

Stand Alone or Combination treatments with AWT Devices work to Repair, Restore & Rejuvenate a broad spectrum of health conditions.

- **no down time**
- **pain-free**
- **simple application**
- **visible results**
- **Versatile**
- **non-invasive treatment**