

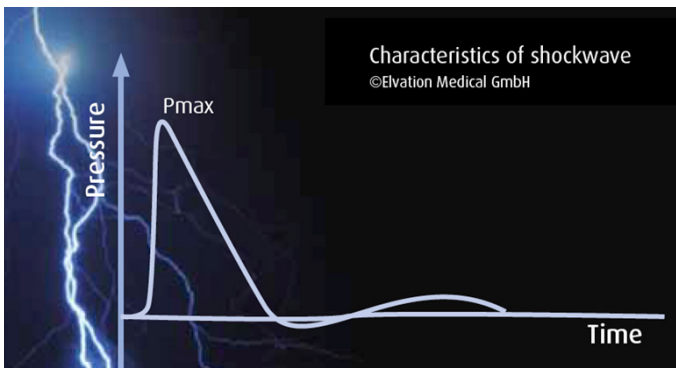
Piezoelectric vs. Electrohydraulic

All small animal shockwave therapy devices are not the same.

More and more veterinary practices have discovered that the PiezoWave Vet is the best choice for small animal shockwave therapy. It came to our attention that our competitor had added a specific page to their website (<http://versatron4paws.com/>) with substantial MIS-INFORMATION about Piezoelectric technology. We have responded to each one of their points below.



Piezoelectric Shock Wave Generation



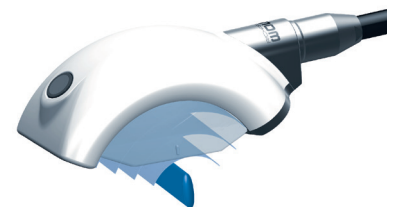
A true focused shockwave, generated by piezo technology is characterized by a very strong pressure peak (up to 140 MPa) and a very short rise time.

What our competitor says about us: Mechanical vibration of focused crystals that deliver a LOW energy pressure pulse

Why they are misinformed: Richard Wolf Therapy Sources use high voltage excitation of piezoelectric crystals to develop sound waves. The range of energy delivered by Wolf therapy sources covers low and HIGH ENERGY levels recognized in clinical literature as therapeutic. In fact, with an Energy Flux Density of 0.882, the Wolf F10G4 is the most powerful shockwave therapy source on the market. Our specifications may be found at www.piezowavevet.com.

What our competitor says about us: Ideal for SMALL focal area treatments only where precise energy in a small area if required (i.e. lithotripsy)

Why they are misinformed: Some of the Richard Wolf therapy sources provide focal density area sizes that are only slightly smaller than the competitor and the new Linear therapy source has the largest focal density area available in the shock wave industry. In addition, the marginal focal density differences do not equate to measureable clinical benefits differences. The variation in the sizes of injuries to be



treated

makes any particular focal energy size less important than the clinicians ability/skill in applying the treatment to the entire injury.

Linear Therapy Source	
Focal size fx(-6 dB)	4 mm
Focal size fy(-6dB) / linear length	46 mm
Focal size fz(-6 dB)	21 mm



What our competitor says about us: Limits treatment opportunities (the shock wave that can only go so far)

Why they are misinformed: Richard Wolf Therapy sources for small animal use can reach a depth of penetration of 0-30mm or 0-40 depending on therapy source, in increments of 5mm, while the competitor's are limited to 5 and 20mm treatment depths. The limitation is theirs and not Wolf's.

What our competitor says about us: Offers similar results to pain management technologies you may already have (i.e. laser)

Why they are misinformed: There is little difference in the characteristics of the waveform of a shock wave developed from electrohydraulic, electromagnetic and piezoelectric technology. Suggesting that piezoelectric shock waves are limited to pain relief is difficult to comprehend considering the technology realities.



What our competitor says about us: Inconvenience of changing multiple gel pads to determine penetration depth

Why they are misinformed: If the goal is to align the therapeutic compression of a shock wave with pathology then more precision regarding depth of penetration is a major advantage. Changing of a gel pad takes seconds and provides the clinician with the opportunity to be more effective in applying the therapy. There are only two penetration depths available with the electrohydraulic unit and it requires turning off the machine and changing the entire therapy source. That's inconvenient!

What our competitor says about us: No published studies in veterinary medicine to validate efficacy

Why they are misinformed: Am J Stem Cell 2013;2(1):62-73, www.AJSC.us /ISSN:2160-4150/AJSC1301001
Original Article: Effect of extracorporeal shock wave on proliferation and differentiation of equine adipose tissue-derived mesenchymal stem cells in vitro

O Raabe^{1*}, K Shell^{1*}, A Goessl¹, C Crispens¹, Y Delhasse², A Eva³, G Scheiner-Bobis³, S Wenisch⁴, S Arnhold¹

Extracorporeal shock waves enhance normal fibroblast proliferation in vitro and activate mRNA expression for TGF- β 1 and for collagen types I and III

Laura Berta, Annamaria Fazzari, Anna Maria Ficco, Patrizia Maurici Enrica, Maria Graziella Catalano, and Roberto Frairia

Department of Clinical Pathophysiology, University of Turin, Turin, Italy

Correspondence: roberto.frairia@unito.it

Submitted 08-06-09. Accepted 09-04-23

Furthermore, comparative and translational approaches toward human medical research on shockwave to can be adopted to animal applications. Since the wave form of a shock wave event is essentially the same no matter how it is created clinicians can translate efficacy of studies completed using different generators as repeatable.

Piezoelectric vs. Electrohydraulic

Here is what the competitor doesn't want you to know:

COST OF OWNERSHIP AND USE - Therapy probes are only effective for 20,000 shocks and must be “refurbished” at a cost of \$2,000 each! To deliver the equivalent number of shocks that is capable with the PiezoWave, you will spend almost a HALF MILLION DOLLARS in “trodes”. Each 1000 shocks delivered costs approximately \$100.00. This does not include the additional costs of lab tests and sedation.

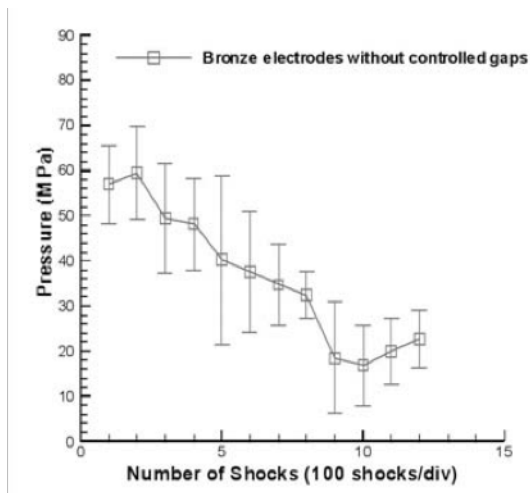
SEDATION REQUIRED - Narrow aperture angle and poorly defined focal area of the electro-hydraulic unit results in intense pain at the skin level. As a result, sedation is always required adding risk and cost.

LESS CONTROL - Piezo technology with a true focused shockwave delivers a clearly defined depth of penetration where you need it without scattering energy providing for precise localization of irregular or damaged tissue.

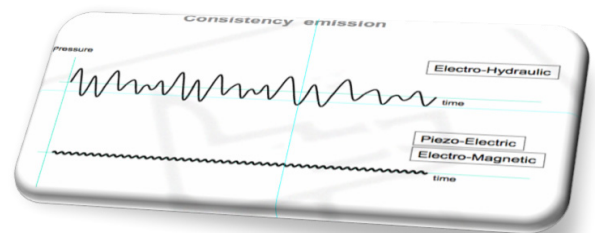
INCONSISTENT SHOCKWAVE - Electrohydraulic technology is an archaic method of generating a shockwave. Using reflectors to focus the energy causes a large variation in energy from one pulse to the next. In application this is problematic when delivering a series of pulses to a patient unless they are sedated.

As the “spark plug” wears out the efficiency of the shockwave

is diminished. Because the electrohydraulic “trodes” start to deteriorate from the first few shocks combined with the inconsistency of shockwave protocols developed from research are difficult to reproduce clinically.



Design and Fabrication of a Shock Wave Generator for Musculoskeletal Disorders, Shen-Min Liang¹, Kiet-Houng Chow¹, Ioannis Manousakas², Yong-Ren PU³, Chien-Chen Chang⁴, Biomedical Engineering Applications, Basis & Communications



The costs, need for sedation, noise, imprecise focal area, inconsistent shockwave and lack of the ability to gain biofeedback from the patient make the electrohydraulic unit impractical for small animal veterinary practice.

Call 866-646-8684 to arrange an in-office demo of the PiezoWave Vet!

PiezoWave² VET

SMALL ANIMAL SHOCKWAVE THERAPY COMPARISON CHART

(for F7 G3 Therapy Source)	PiezoWave Vet	VersaTron 4 Paws
Multiple Therapy Heads (Trodes) Required	NO	YES
Therapy Depth of Therapy Ranges	8 - 0mm to 30mm in 5mm increments	2 - 5mm and 20mm
Linear Therapy Source for Wounds Available	YES	NO
Complete Animal Sedation Required	NO	YES
Ear Protection Required	NO	YES
Unit Cost	\$32,000	\$30,000
Cost Per Shockwave	.0064 cents	10 cents
Shocks Per Therapy Source	5 million +	20,000
Number of Therapy Source Units/5 Million Shocks	1	250
Cost of Replacement Therapy Source	\$7,500	\$2,000
Total Cost of Ownership Based on 5M Shocks	\$32,000	\$532,000



www.mtavet.com

866-646-8684