

NEW GENERATION OF PRESSURE WAVE TECHNOLOGY WITH THE CONTROLS IN THE HANDPIECE

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THE ULTIMATE PRESSURE WAVE TECHNOLOGY DEVICE

The Tissue Regenerator is the world's most effective pressure wave treatment and can be used affordably by all health care practitioners.

Business/Revenue Opportunity

The pressure wave technology Tissue Regenerator offers the ultimate opportunity for business building and boosting your bottom line. With success measured by clearly defined goals and calculated return on investment, affordable treatment is available through attractive lease or purchase terms. Anyone can be trained to operate the Tissue Regenerator, which is proven to be the 'standard of care' and treatment of choice for many conditions.

CONDITIONS THAT CAN BE TREATED BY PRESSURE WAVE THERAPY

- Heel pain
- Foot ulcer pain
- Achilles pain
- Back pain
- Knee pain
- Stress fractures
- Over use injuries
- Shin pain
- · Elbow pain

- Shoulder pain
- · Scar tissue treatment
- Hamstring pain
 - Muscle and connective tissue activation with V-ACTOR.

Success Rates

- 91% improvement for shoulder pain - Journal of American Medical Association, 2003
- 90% success rate for heel pain - Foot & Ankle International, 2012
- 77% improvement for elbow pain – The Journal of Orthopaedics, 2005

76% success rate for achilles pain – The American Journal of Sports Medicine, 2007

8 times more effective for hamstring pain than regular physiotherapy and chiropractic treatment

- The American Journal of Sports Medicine, 2010

A non-invasive surgical solution that accelerates the recovery of injured tissue.

BENEFITS

- Non-surgical treatment
- No side effects
- Accelerates healing
- Can be used by all health practitioners
- Affordable



THE SUPERIOR TECHNOLOGY OF STORZ

When you compare Storz and Medical Wave to other systems on the market, you'll find that Storz is simply the most advanced, least expensive and has the most reliable technology available. Storz is also the category leader in research and development. Medical Wave provides unequalled medical support behind your lease or purchase. Here's the proof:

World's most effective pressure wave treatment

- 'Radial pressure wave therapy significantly improves pain, function, and quality of life' -The American Journal of Sports Medicine, 2008
- 'Pressure wave therapy can effectively decrease heel pain thickness as demonstrated objectively by ultrasound evaluation and significantly reduces patientreported pain'
 - Foot & Ankle International, 2012
- Newly developed hand control, with all main operating elements integrated into the handpiece. This allows for safer treatments on patients as changes can be made to settings without looking away from the patient
 - Frequency, energy levels and number of shocks applied can be adjusted directly via selector buttons. Only product of its kind on the market
- State of the art titanium and ceramic heads for superior comfort, manufactured for exclusive distribution by Medical Wave
- Proven research and development with our products

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- 6. Published and proven treatment protocols with our technology
- 7. World class institutions using our technology
 - Cleveland Clinic
 - Johns Hopkins University
 - Mount Sinai Hospital
 - Montreal General Hospital
 - Duke University
 - University of Toronto
 - McGill University
 - Queen's University
 - Canadian Memorial Chiropractic College
 - Hospital For Special Surgery (NY)
- 8. No replacement of applicator heads necessary
- 9. Storz has over 60 years of experience
- Pressure wave technology treats acute and chronic injuries

11. Storz is a world leader in:

- Effectiveness
- Medical support
- Research and development
- Technology

Choice

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antific evidence:

CECHARGE PULSE WAVE Dr. Larry Basch, D.C., CCSP, CCEP, ICSC Certified Sports, Extremity, International & Military Chiropractor

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PRODUCTS

D-ACTOR® Superiority

In the field of pain therapy and rehabilitation, D-ACTOR® pressure wave technology systems are a must-have for any modern, successful medical practice. Manufactured in Switzerland, the 100 and 200 are superior quality devices offering ease of use and simple handpiece servicing at reduced costs. Compared to other pressure wave technology systems, D-ACTOR® products are simply the most advanced technology available.

The New D-ACTOR® 100

The 'Ultra' System in Radial Pressure Wave Therapy

The new D-ACTOR[®] 100 creates a perfect balance between performance and efficiency, mobility and weight, versatility and low maintenance costs.

KEY FEATURES AT A GLANCE

- Newly developed hand control, with all main operating elements integrated into the handpiece. Frequency, energy levels and number of pressure waves applied can be adjusted directly via selector buttons. Only product of its kind on the market. This allows for safer treatments on patients as changes can be made to settings without looking away from the patient
- Compact design
- Built-in high-performance compressor makes the system even more powerful and provides excellent therapy success rates
- Low maintenance costs
- Combinable handpieces
- Pressure wave therapy with various
 pressure wave transmitters
- Vibration therapy (V-ACTOR[®])

Pulse Frequency/Pressure

- Radial pressure wave therapy: 1 – 21 Hz/1 – 5 bar
- Vibration therapy (V-ACTOR®): 31 Hz

Oscillating 'D-ACTOR®' Technology

• For better myofascial trigger point therapy

'Deep Impact' Pressure Wave Transmitter

For the treatment of deep pain regions

'CERAma-x™' Pressure Wave Transmitter

 Elastic pressure wave transmitter for pressure wave technology

'V-ACTOR®' handpiece

* For muscle and connective tissue activation/smoothing



Indications

- · Heel pain
- · Achilles pain
- Back pain
- Knee pain
- Stress fractures
- Over use injuries
- Shin pain
- · Elbow pain
- · Foot ulcer pain
- Shoulder pain
- Scar tissue treatment
- Enhancement of bone healing
- Hamstring pain
- Muscle and connective tissue activation with V-ACTOR.

Shoulder pain	91%
Heel pain	90%
Achilles pain	76%
Hamstring pain	80%
Elbow pain	77%
Myofascial trigger points pain	80%
Acupuncture Pressure wave therapy up to	90%

Facts and Figures

- Hand operated pressure wave technology devices
- · Built-in high-performance 'Silent' compressor
- Extended frequency/power range: 21 Hz/5.0 bar
- * Precision pressure controller
- MACTOR® vibration therapy: 31 Hz
- System weight: 10.5 kg

Indications Success Rate

ACCESSORIES & ADD-ONS

To provide the ultimate experience in pressure wave therapy sometimes requires specialized equipment. Storz offers a wide array of accessories to provide patients with the best in comfort and care, while providing healthcare practitioners with unparalleled portability and convenience.







9 PRESSURE WAVE TRANSMITTER HEADS & CASE

STORZ has developed a transmitter programme especially for radial pressure wave therapy and tailor-made for individual indications. State-of-the-art transmitter materials are used to optimize the transmission rate of pressure wave energy into the pain region.

At the same time, energy losses at the skin coupling surface are minimized. This research work has led to optimal treatment successes with the D-ACTOR® »ultra«.



V-ACTOR HANDPIECE

The main operating elements have been integrated into the »Activetip-consister display of the handpiece and thus make working on the patient easier. The »Individual Parameter Setting« (IPS-Control) for all pressure wave indications includes treatment parameters recommended by experienced users and ensures reliable pre-setting.



SCIENTIFIC EVIDENCE

Study #1 - Radial Pressure Wave Therapy is Safe and Effective in the Treatment of Chronic Recalcitrant Heel Pain. Results of a Confirmatory Randomized Placebo-Controlled Multi-center Study.

Ludger Gerdesmeyer, MD, PhD, Carol Frey, MD, Johannes Vester, PhD, Markus Maier, PhD, Lowell Weil Jr, DPM, Lowell Weil Sr, DPM, Martin Russlies, PhD, John Stienstra, DPM, Bacy Sourtan, DPM, Keith Fedder, MD, Peter Diehl, MD, Heinz Lohrer, MD, Mark Henne, MD, and Hans Gollwitzer, MD. From the Department of Orthopaedic and Trauma, Technical University Munich, Klinikum Rechts der Isar, Germany, the Department of Joint Arthroplasty and Clinical Science, Mare Clinic, Kiel, Germany, Orthopaedic Foot and Ankle Center, Manhattan Beach, California, IDV Data Analyses and Study Planning, Biometrics in Medicine, Gauting, Germany, the Department of Orthopaedics, Ludwig Maximilian University, Munich, Germany, the Weil Foot and Ankle Institute, Des Plaines, Illinois, University Schleswig Holstein, Campus Lübeck, Lübeck, Germany, the Department of Podiatry, The Permanente Medical Group Inc, Union City, California, the Department of Orthopaedics, University Rostock, Rostock, Germany, and the Institute of Sports Medicine, Frankfurt Main, Germany.

Background:

Radial pressure wave therapy is an effective treatment for chronic heel pain that can be administered to outpatients without anesthesia but has not yet been evaluated in controlled trials.

Hypothesis:

There is no difference in effectiveness between radial pressure wave therapy and placebo in the treatment of chronic heel pain.

Study Design:

Randomized, controlled trial; level of evidence, 1.

Methods:

Three interventions of radial pressure wave therapy (0.16 mJ/mm 2; 2000 impulses) compared with placebo were studied in 245 patients with chronic heel pain. Primary endpoints were changes in visual analog scale composite score from baseline to 12 week follow-up, overall success rates and success rates of the single visual analog scale scores (heel pain at first steps in the morning, during daily activities, during standardized pressure force). Secondary endpoints were single changes in visual analog scale scores, success rates, Solas and Maudsley score, SF-36, and patients' and investigators' global judgment of effectiveness for weeks and 12 months after pressure wave therapy.

Results:

Radial pressure wave therapy proved significantly superior to placebo with a reduction of the visual analog scale composite score of 72.1% compared with 44.7% (P = .0220), and an overall success rate of 61.0% compared with 42.2% in the placebo group (P = .0020) at 12 weeks. Superiority was even more pronounced at 12 months, and all secondary outcome measures supported radial pressure wave therapy to be significantly superior to placebo (P < .025, 1-sided). No relevant side effects were observed.

Conclusion:

Radial pressure wave therapy significantly improves pain, function and quality of life compared with placebo in patients with recalcitrant heel pain.

Source:

American Journal of Sports Medicine, 2008; 36: 2100-2109. DOI: 10.1177/0363546508324176



Study #2 - Ultrasonographic Evaluation of Low Energy Pressure Wave for Chronic Heel Pain

By Robert Gordon, MD; Charles Wong, BHSc; Eric J. Crawford, BHSc Toronto, Canada

Background:

Ultrasonographic measurement of the heel pain can be used to objectively diagnose heel pain. The purpose of this study was to determine the long-term effectiveness of pressure wave therapy for the treatment of heel pain using ultrasonographic measurement as an objective outcome measure, with a minimum follow-up of 12 months.

Methods:

Patients with chronic recalcitrant heel pain were prospectively recruited and underwent pressure wave therapy. Ultrasound measurement of the heel pain and patient-rated pain scores were collected before treatment and at follow-up (minimum of 12 months post-treatment). Twenty-five subjects (35 feet) met the inclusion criteria. The average followup time was 29.4 \pm 13.1 (M \pm SD; range, 12 to 54) months.

Results:

The average thickness of the heel pain of the symptomatic heels was 7.3 \pm 2.0 mm before treatment and 6.0 \pm 1.3 mm after treatment (p < 0.001). The average change in thickness of the treated heels was – 1.3 mm (– 0.8 to – 1.8 mm; 95% Cl, p < 0.0001). No correlation was found between length of follow-up and change in ultrasound measured heel pain thickness (r = – 0.04, p = 0.818).

Conclusion:

For patients with a greater than 12-month history of heel pain, pressure wave therapy can effectively decrease heel pain thickness as demonstrated objectively by ultrasound evaluation and reduce patient-reported pain. No relationship between length of follow-up and change in fascia thickness was found after 12 months.

Source:

FOOT & ANKLE INTERNATIONAL ©2012 by the American Orthopaedic Foot & Ankle Society DOI: 10.3113/FAI.2012.0202

Study #3 - Pressure Wave Therapy for the Treatment of Chronic Hamstring Pain in Professional Athletes

By Angelo Cacchio, MD, Jan D. Rompe, MD, John P. Furia, MD, Piero Susi, MD, Valter Santilli, MD, and Fosco De Paulis, MD Investigation performed at Sciuba Diagnostic Imaging and Rehabilitation Center, Sulmona, Italy

Background:

Chronic hamstring pain is an overuse syndrome that is usually managed by non-operative methods. Pressure wave therapy has proved to be effective in many tendinopathies.

Hypothesis:

Pressure wave therapy may be more effective than other non-operative treatments for chronic hamstring pain.

Study Design:

Randomized controlled clinical study; level of evidence, 1.

Methods:

Forty professional athletes with chronic hamstring pain were enrolled between February 1, 2004 and September 30, 2006. Patients were randomly assigned to receive either pressure wave therapy, consisting of 2500 impulses per session at a 0.18 mJ/mm energy flux density without anesthesia, for 4 weeks (pressure wave therapy group, n = 20), or traditional conservative treatment consisting of non-steroidal anti-inflammatory drugs, physiotherapy and an exercise program for hamstring muscles (TCT group, n = 20). Patients were evaluated before treatment, 1 week and 3, 6, and 12 months after the end of treatment. The visual analog scale (VAS) score for pain and Nirschl phase rating scale (NPRS) were used as primary outcome measures.

Results:

The patients were observed for a mean of 10.7 months (range, 1-12 months). Six patients were lost to follow-up because they underwent a surgical intervention: 3 (all in TCT group) were lost at 3 months; 2 (1 in each group), at 6 months; and 1 (in the TCT group), at 12 months. Primary follow-up was at 3 months after the beginning of treatment. The VAS scores in the pressure wave therapy and TCT groups were 7 points before treatment (P = .84), and 2 points and 5 points, respectively, 3 months after treatment (P < .001). The NPRS scores in the pressure wave therapy and TCT groups were 5 points in either group before treatment (P = .48), and 2 points and 6 points, respectively, 3 months after treatment (P < .001). At 3 months after treatment. 17 of the 20 patients (85%) in the pressure wave therapy group and 2 of the 20 patients (10%) in the TCT group achieved a reduction of at least 50% in pain (P < .001). There were no serious complications in the pressure wave therapy group.

Conclusion:

Pressure wave therapy is a safe and effective treatment for patients with chronic hamstring pain.

Source:

American Journal of Sports Medicine, 2011; 39: 146 DOI: 10.1177/0363546510379324



Study #4 - Low-Energy Pressure Wave Therapy as a Treatment for Shin Pain

By Jan D. Rompe, MD, Angelo Cacchio, MD, John P. Furia, MD, and Nicola Maffulli, MD, MS, PhD, FRCS(Orth), FFSEM(UK) From OrthoTrauma Evaluation Center, Mainz, Germany, the Department of Medicine and Physical Rehabilitation, San Salvatore Hospital of L'Aquila, Italy, SUN Orthopaedics, Lewisburg, Pennsylvania, and the Centre for Sports and Exercise Medicine, Barts, and The London School of Medicine and Dentistry, London, England

Background:

Shin pain is a pain syndrome along the tibial origin of the tibialis posterior or soleus muscle. Pressure wave therapy is effective in numerous types of insertional pain syndromes.

Hypothesis:

Pressure wave therapy is an effective treatment for chronic shin pain.

Study Design:

Cohort study; level of evidence, 3.

Methods:

Forty-seven consecutive subjects with chronic recalcitrant shin pain underwent a standardized home training program, and received repetitive lowenergy radial pressure wave therapy (2000 shocks; 2.5 bars of pressure, which is equal to 0.1 mJ/mm 2; total energy flux density, 200 mJ/mm2; no local anesthesia) (treatment group). Forty-seven subjects with chronic recalcitrant shin pain were not treated with pressure wave therapy, but underwent a standardized home training program only (control group). Evaluation was by change in numeric rating scale. Degree of recovery was measured on a 6-point Likert scale (subjects with a rating cl completely recovered or much improved were stand as treatment success).

Results:

One month 4 months and 15 months from baseline, success rates for the control and treatment groups according to the Likert scale were 13% and 30% (P < .001), 30% and 64% (P < .001), and 37% and 76% (P < .001), respectively. One month, 4 months and 15 months from baseline, the mean numeric rating scale for the control and treatment groups were 7.3 and 5.8 (P < .001), 6.9 and 3.8 (P < .001), and 5.3 and 2.7 (P < .001), respectively. At 15 months from baseline, 40 of the 47 subjects in the treatment group had been able to return to their preferred sport at their preinjury level, as had 22 of the 47 control subjects.

Conclusion:

Pressure wave therapy as applied was an effective treatment for shin pain.

Source:

American Journal of Sports Medicine 2010, 38: 125 originally published online September 23, 2009 DOI: 10.1177/0363546509343804

For more information visit:



Study #5 - Eccentric Loading, Pressure Wave Treatment, or a Wait-and-See Policy for Achilles Pain - A Randomized Controlled Trial

Jan D. Rompe, MD, Bernhard Nafe, MD, John P. Furia, MD, PhD, and Nicola Maffulli, MD, PhD, FRCS(Orth) From the OrthoTrauma Clinic, Gruenstadt, Germany, Rüsselheim-Bauschheim, Germany, the SUN Orthopaedic Group, Lewisburg, Pennsylvania, and the Department of Trauma and Orthopaedic Surgery, Keele, University of Medicine, Staffordshire, England

Background:

Few randomized controlled trials compare different methods of management in chronic achilles pain.

Purpose:

To compare the effectiveness of 3 management strategies – group 1, eccentric loading; group 2, repetitive low-energy pressure wave therapy; and group 3, wait and see – in patients with chronic tendinopathy of the main body of Tendo Achillis.

Study Design:

Randomized controlled trial; level of evidence, 1.

Methods:

75 patients with a Chronic Recalcitrant (>6 months) non-insertional achilles pain were enrolled in a randomized controlled study. All patients had received unsuccessful management for >3 months, including at least (1) peritendinous local injections, (2) non-steroidal anti-inflammatory drugs, and (3) physiotherapy. A computerized random-number generator was used to draw up an allocation schedule. Analysis was on intention-to-treat basis.

Results:

At 4 months from baseline, the Victorian Institute of Sport Assessment' (VISA)-A score increased in all groups, from 51 to 76 points in group 1 (eccentric loading), from 50 to 70 points in group 2 (repetitive low-energy pressure wave therapy), and from 48 to 55 points in group 3 (wait and see). Pain rating decreased in all groups, from 7 to 4 points in group 1, from 7 to 4 points in group 2, and from 8 to 6 points in group 3. 15 of 25 patients in group 1 (60%), 13 of 25 patients in group 2 (52%), and 6 of 25 patients in group 3 (24%) reported a Likert scale of 1 or 2 points ("completely recovered" or "much improved"). For all outcome measures, groups 1 and 2 did not differ significantly. For all outcome measures, groups 1 and 2 showed significantly better results than group 3.

Conclusion:

4-month follow-up, eccentric loading and pressure wave therapy showed comparable results. The wait-and-see strategy was ineffective for the management of achilles pain.

Source:

American Journal of Sports Medicine, 2007; 35: 3 DOI: 10.1177/0363546506295940





Study #6 - Radial Pressure Wave Therapy in Shoulder Pain – A Prospective Study

By P. Magosch, S. Lichtenberg, P. Habermeyer. Schulter- und Ellenbogenchirurgie, ATOS-Praxisklinik, Heidelberg, Germany

Aim:

The aim of the study was to evaluate the influence of radial pressure wave therapy on the course of shoulder pain.

Material and Methods:

35 patients with a mean age of 47.5 years suffering for an average of 28 months from shoulder pain with a Gaertner type 2 calcific deposit with a mean size of 16.6 mm in typical location (true a.p. view) were treated by low energy pressure wave therapy three times. The acromiohumeral distance averaged 10.4 mm measured on the true a.p. view. All patients were followed up clinically and radiologically 4 weeks, 3, 6 and 12 months after the last treatment.

Results:

The constant score improved significantly (p < 0.0001) during the first 4 weeks after pressure wave therapy from a mean of 68.5 to a mean of 80.5 points and remained approximately constant at 3, 6 and 12 months follow-up. After 4 weeks, 25.7% of the patients had no pain and 54.3% reported pain relief. 80.8% of the patients were painfree and 19.2% reported pain relief 12 months after pressure wave therapy. Radiologically, no calcific deposit was visible in 17.6% 4 weeks after

pressure wave therapy. There was disintegration in 20.5% and no change in the calcific deposit was apparent in 61.5%. At further follow-up we found complete resorption of the calcific deposit in 75% up to 12 months after pressure wave therapy and there was no change in 25%. Overall three patients (8.5%) had to undergo surgical treatment 3-7 months after pressure wave therapy.

Conclusion:

Pressure wave therapy leads to significant pain relief and an improvement in shoulder function within the first 4 weeks. In view of the long history, the size and the spontaneous resorption rate of the calcific deposit, an inductive effect of pressure wave therapy on the resorption of the calcific deposit can be assumed.

Source:

Z Orthop Ihre Grenzgeb. 2003 Nov-Dec;141(6):629-36.





When you consider all the superior benefits, you can understand why is the only choice that makes sense.



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