

EXTRACORPOREAL SHOCK WAVE THERAPY  
IN VETERINARY MEDICINE

STORZ MEDICAL





## Shock waves in nature

In nature, shock waves occur during every thunderstorm. In medicine, shock waves are usually generated in an extracorporeal energy source, directed into the body and concentrated on the region to be treated.

It has been observed that shock waves stimulate local blood circulation, microcirculation and cell metabolism. This is caused, by the increased permeability of the cell membrane and by the release of nitrogen monoxide, an important messenger which causes vasodilation. Shock waves also trigger a release of numerous growth factors and have an anti-inflammatory effect.

## Focused shock wave

Focused shock waves are sound waves that are bundled (focused) in deep regions of the body. This is where they reach their maximum energy. Focused shock waves are used in the treatment of deep trigger points or areas. Damage to tissue layers located closer to the skin surface is thus avoided.

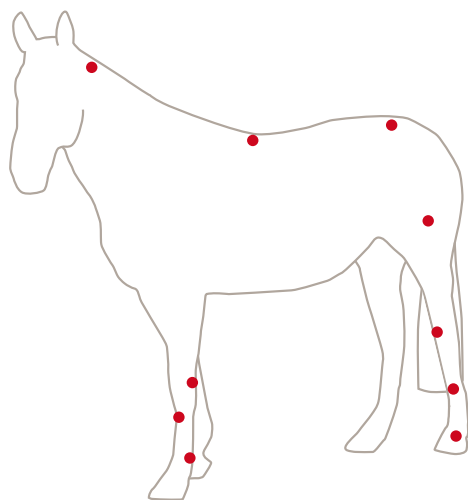
## Radial shock wave

Radial shock waves are generated by means of a pneumatic system. A projectile is accelerated with compressed air and decelerated by a transmitter. The generated energy is then transmitted to the body and propagates radially in the tissue. The maximum energy is reached in superficial body areas. Radial sound wave propagation in the tissue provides excellent therapy results when treatment is performed on larger surface areas of application or large regions of the body.





## Indications for horses



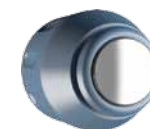
Extracorporeal shock wave therapy (ESWT) is a non-invasive treatment of pain and disorders in close-to-bone soft tissue of the postural and locomotor systems. Tendinopathies and insertional desmopathies are the most common indications for shock wave application by means of the ESWT transmitter.

**Trigger point shock wave therapy (TrST)** of myofascial pain syndromes: the transmitter is positioned directly on the trigger point area. High frequency acoustic pulses (10 Hz) are introduced into the trigger zone to eliminate the trigger points.

### Indications likely to benefit from ESWT include:

- ▶ Insertional desmopathies
- ▶ Tendinopathy with and without calcification
- ▶ Osteoporosis
- ▶ Myopathies
- ▶ Arthrosis
- ▶ Podotrochlosis syndrome
- ▶ Trigger points, sore muscles

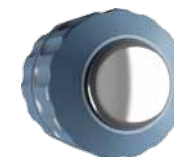
## Radial transmitters for horses



**R15**  
Ø 15 mm, ESWT transmitter  
for all tendinopathies



**D115**  
Ø 15 mm, Deep Impact® power transmitter  
for deep-seated diseases, trigger therapy



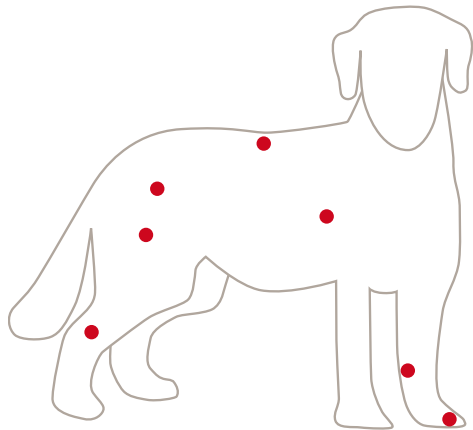
**D20-S**  
Ø 20 mm, D-ACTOR® transmitter,  
radial shock waves and vibration pulses for  
myofascial trigger therapy



**D35-S**  
Ø 35 mm, D-ACTOR® transmitter,  
radial shock waves and vibration pulses for  
myofascial trigger therapy



## Indications for small animals, especially dogs

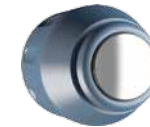


Experimental treatment of dogs using ESWT began almost 10 years ago and good results have been reported for treatment of various orthopaedic conditions.

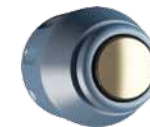
### Indications likely to benefit from this treatment include:

- ▶ Tendinopathy
- ▶ Hip and elbow dysplasia
- ▶ Coxarthrosis
- ▶ Cubarthrosis
- ▶ Painful scar tissue
- ▶ Chronic back pain

## Radial transmitters for small animals, especially dogs



**R15**  
Ø 15 mm, ESWT transmitter  
for all tendinopathies



**DI15**  
Ø 15 mm, Deep Impact® power transmitter  
for deep-seated diseases, trigger therapy



STORZ MEDICAL

 4.0 bar

 888.225 

 1.9 Hz  



MASTERPULS® MP100 VET



## MASTERPULS® MP100 VET – Mobile radial power

- ▶ Mobile use
- ▶ System weight: 9.5 kg (20.94 lbs)
- ▶ Built-in high-performance compressor
  - »Silent« version with noise enclosure
- ▶ Precise pressure setting
- ▶ Optional battery-powered operation
- ▶ Transport bag or case

### Patient benefits

- ▶ No anaesthesia required
- ▶ Wide range of applications
- ▶ Successful therapy
- ▶ No side effects
- ▶ Out-patient treatment

### Radial handpiece (R-SW)



- ▶ Application pressure: 1.0 – 4.0 bar
  - ▶ Therapeutic penetration depth: 0 – 30 mm
  - ▶ Shock frequency: 1 – 15 Hz
  - ▶ Large coupling area without energy loss
  - ▶ Over 1 million shocks per handpiece revision
- = proven STORZ MEDICAL ballistic technology


### Mobile use



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ESWT *unlimited*

Mode    ▲    Menu

T-SW 8-SW 

0.50 <small>ml/min</small>	Energy +/-
500 shocks	Shocks +/-
2.0 Hz	Frequency +/-
0	FOCUSED
0	

Configuration    ▼    02/15/2010 12:30



DUOLITH® VET

## Focused, radial and vibrating power combined in one unit – The DUOLITH® VET solution

### Combined shock wave therapy

- ▶ Combined F-SW/R-SW system
- ▶ Also available as pure F-SW system
- ▶ Easy to transport
- ▶ Available with low-noise oil compressor or ENERGY II compressor
- ▶ Modern touch screen technology
- ▶ Load pre-configured indications and save patient data
- ▶ Copy files and keep updated through LAN port
- ▶ Save treatment protocols using easy touch screen

### Patient benefits

- ▶ No general anaesthesia required
- ▶ Wide range of applications
- ▶ Reliable therapy for deep penetration areas
- ▶ Excellent healing rate, even in animals with unfavourable prognosis
- ▶ No side effects

### Handpieces and penetration depth

The patented STORZ MEDICAL electromagnetic cylindrical coil and the unique radial shock wave technology guarantee a uniform energy discharge, long lifecycle and easy handling of focused and radial handpiece.

### DUOLITH® VET applications for competitive sports

For horses in competitive sports the D-ACTOR® and V-ACTOR® technology can support the regeneration of muscle work just like the prevention of the entire muscle system.

### Penetration depths – Focused handpiece

Without stand-off



**Focal area**  
35 – 65 mm  
**Therapeutic efficacy**  
0 – 125 mm

Stand-off I



**Focal area**  
15 – 45 mm  
**Therapeutic efficacy**  
0 – 105 mm

Stand-off II



**Focal area**  
0 – 30 mm  
**Therapeutic efficacy**  
0 – 90 mm

### Penetration depth – Radial handpiece



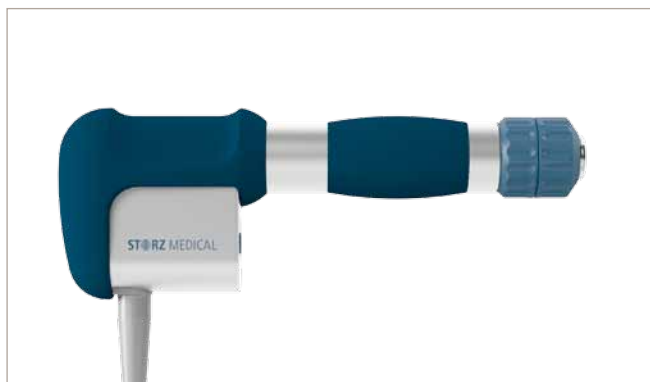
Max. energy at transmitter tip

**Transmitter R15**  
0 – 30 mm  
**Transmitter DI15**  
0 – 60 mm  
**Transmitters D20-S/D35-S**  
0 – 50 mm



## Focused, radial and vibrating power combined in one unit – The DUOLITH® VET solution

### Radial handpiece (R-SW)



- ▶ Application pressure: 1.0 – 5.0 bar
- ▶ Therapeutic penetration depth: 0 – 30 mm
- ▶ Shock frequency: 1 – 21 Hz
- ▶ Large coupling area without energy loss
- ▶ Over 1 million shocks per handpiece revision
- = proven STORZ MEDICAL ballistic technology

### Focused handpiece (F-SW)



- ▶ Dynamic energy range low-high: 0.01 – 0.55 mJ/mm<sup>2</sup>
- ▶ Therapeutic penetration depth: 0 – 125 mm
- ▶ High shock frequency: 1 – 8 Hz
- ▶ Over 1 million shocks per handpiece revision
- = unique STORZ MEDICAL cylindrical source

### V-ACTOR®



- ▶ High-frequency vibration therapy: 1 – 35 Hz
- ▶ Available transmitters: 25 or 40 mm
- = adjuvant STORZ MEDICAL innovation



## Leader in shock waves

### Better therapies through new technologies.

Established in 1987, STORZ MEDICAL AG is a Swiss member company of the KARL STORZ Group. The objective pursued by our physicists and engineers is to conduct ongoing research into shock wave technology and to develop new system concepts. Our products have proved their ef-

ficacy all over the world in the fields of urology, orthopaedics, rehabilitation, gastroenterology, cardiology and dermatology. New compact systems have recently been developed so that other medical disciplines can also gain access to the benefits of non-invasive shock wave technology.

With its pioneering technological innovations, STORZ MEDICAL is setting new standards in aesthetic medicine and in the treatment of pain in close-to-bone soft tissue of the postural and locomotor systems. As a reliable partner of doctors, we are committed to making a vital contribution to medical progress in the service of new therapy methods.



HUMANE TECHNOLOGY – TECHNOLOGY FOR PEOPLE



**STORZ** MEDICAL

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