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 efficacy 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. In close co-operation with our medical partners Dr. Heinrich Everke, Dr. Ulrich Dreisilker and Dr. Ulrich Piontkowski, we have developed a new, non-invasive stimulation therapy procedure which is referred to as »shock wave acupuncture«.
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Acupuncture is a very old therapy method that is practised in different ways by many cultures all over the world.

Originally, the skin areas to be treated were stimulated using the techniques available at the time.

Today, we believe that an acupuncture point is an area characterized by an extremely high density of pressure, temperature and pain receptors. In acupuncture therapy, these receptors are stimulated by applying appropriate stimuli, and acupuncture points are combined in such a way that the organism reacts in the desired manner.

The best known acupuncture techniques are rooted in Ancient China. Acupuncture with shock waves is an innovative method of non-invasive stimulation which extends the range of therapy options available today.

The special effects of shock wave acupuncture

Over 70% of acupuncture points coincide with trigger points. This conclusion of the study conducted by Dr. Ronald Melzack, co-author of »The Gate Theory of Pain«, applies especially to the postural and locomotor systems.

In the lumbar-pelvic region, trigger points are found on the quadratus lumborum muscle. These trigger points correlate with the Bladder Meridian points 23, 25 and 54. Also, the acupuncture points on the outer Bladder Meridian coincide with the trigger points on the erector trunci muscle. A remarkably high degree of correspondence between trigger points and acupuncture points is found in the pelvic region. Gallbladder points 28, 29, 30 and 31 overlap with trigger points in the gluteal muscles. These acupuncture points can be easily reached with radial shock waves.

Acupuncture points in the cervical region or in the lumbar-pelvic region or knee joints play a major role in orthopaedic medicine. Shock wave therapy is an ideal alternative to classical acupuncture for patients with a needle phobia. Moreover, it ensures precise localization even of deep target areas. In classical acupuncture, deep acupuncture points usually require long needles. This means that, very often, the point cannot be reached with the desired precision.
Technology

The MASTERPULS® is a compressed air operated ballistic shock wave system with special shock transmitters for acupuncture applications and high-precision ballistic components in its applicator for shock wave generation.

The projectile located in the applicator is accelerated by compressed air. The kinetic energy thus produced is converted into acoustic energy when the projectile strikes an unmoved surface (shock transmitter). This pressure pulse is transmitted to the target tissue by means of gel.

Benefits of shock wave acupuncture over needle acupuncture

Shock wave acupuncture is a non-invasive therapy method that requires very short treatment times (only a few seconds per point) and provides increased efficacy (high-intensity shock waves reach the entire target region at the same time).

Blood circulation in the affected area is decisively improved and the lymphatic flow is accelerated. Provided that the specified contraindications are excluded from shock wave therapy, this treatment method causes virtually no pain or side effects.

Note

Qualified training in classical acupuncture is required for therapeutic use of the MASTERPULS® in shock wave acupuncture.
Proven applications of shock wave acupuncture

The indications for shock wave acupuncture are basically the same as for classical acupuncture. The following disorders have shown to respond particularly well to shock wave acupuncture:

- Osteoarthritis of the large joints (elimination of contractures, synovial stimulation)
- Lumbago (painless therapy even of myogelosis in back muscles, no uncomfortable patient positioning required)
- Cervical syndrome (deep and large-area pressure pulse penetration, better than in acupressure therapy)
- Tennis arm and heel spur (less painful than friction massage)
- Shoulder-hand syndrome (better capsular stretching, pressure applied to tendon insertions acts over a large area, needles only act in specific spots)
- Spastic paresis (distension stimulus through large-area pressure application to acupuncture points on the affected meridians)
- Stress incontinence, irritable bladder
- Blood circulation disorders (pulsating pressure provides the necessary stimulus, painful points can be treated without counter-reaction)
- Lymphedema (similar to lymphatic drainage, but with a focus on acupuncture points along the meridian and on points for the lymphatic system such as SP 4, 6, 9, ST 40)
- Asthma/dry cough (acupuncture points are pressure-sensitive, see tapping massage)
- Foot reflex zone massage (deeper and more precise than finger massage)
- Wound healing disorders (pulsating pressure stimulates blood circulation, combination and joint stimulation of local and peripheral points)
MASTERPULS® – radial shock wave system
The individual pathologies are treated with the same procedure as used in classical acupuncture: local points near the focus of the disease are combined with more distant, influential points.

The individual points are treated successively for a few seconds, using either strong or gentle stimulation as required from case to case. Patients should clearly feel the applied shocks. However, shock wave stimulation should be interrupted when it causes pain. If these rules are followed, individual points can be stimulated up to three times in succession.

As symptoms may worsen after the first treatment, there should be a one or two days’ interval between the first and second therapy sessions. In general, therapy is interrupted for two weeks after the sixth session in order to observe the long-term effects of shock wave acupuncture.

When the MASTERPULS® is used for a well selected combination of acupuncture points, complex disorders and pain syndromes can now be treated with extracorporeal shock waves for the first time. Shock wave acupuncture treatment stimulates distant points, master points and local acupuncture points in order to make their effects additive.

General treatment recommendations:

- Localization of acupuncture points
- Gel application
- Shock transmitter: Ø 6 mm, AkuST
- Application: 50 – 100 shocks per acupuncture point, 1.2 – 1.8 bar, 5 – 10 Hz
- Intervals 2 – 3 days
- 6 – 12 sessions
The most important benefit of shock wave acupuncture is that pressure-sensitive points can be stimulated by applying an adequate stimulus.

Shock wave acupuncture is less painful and requires less time than classical needle acupuncture. These factors may be crucial in the treatment of disorders such as chronic lumbago. Acupuncture points that are located deep in the tissue or cover large areas within the body (e.g. GB 30) are difficult to reach and stimulate with needles. These difficulties can be easily eliminated with shock wave acupuncture.

In areas located close to joints, the pulsating pressure of shock waves also allows contracted joint capsules to be stretched and the production of synovial fluid to be stimulated (e.g. in the knee joint). This means that shock wave acupuncture not only alleviates pain, but also enhances the healing process.
Asthma/dry cough

Major acupuncture points:

- **BL 11**: strong stimulation, 10 Hz, repeatedly
- **BL 13**: strong stimulation, 10 Hz, repeatedly
- **BL 17**: strong stimulation, 10 Hz, repeatedly
- **Ren 17**: gentle stimulation, 10 Hz, repeatedly
Treatment examples

A
Strong patient with frequent asthmatic attacks in the morning hours and following physical exertion; no signs of infection, no temperature

BL 11: strong stimulation, 10 Hz, repeatedly
BL 13: strong stimulation, 10 Hz, repeatedly
BL 17: strong stimulation, 10 Hz, repeatedly
Ren 17: gentle stimulation, 10 Hz, repeatedly

Additionally:
LU 6: gentle stimulation, 5 – 10 individual shocks

B
Patient weakened by chronic disease, exhibiting signs of cold such as sensitiveness to cold or tendency to weather-related rheumatic pain, frequent infections, paleness

BL 13 – BL 11: gentle stimulation, 10 Hz, 10 – 20 seconds per point
BL 16 – BL 18: gentle stimulation, 10 Hz, 10 – 20 seconds per point
BL 23 – BL 24: gentle stimulation, 10 Hz, 10 – 20 seconds per point

Ren 17: gentle stimulation, 3 – 5 individual shocks
Ren 6: strong stimulation, 5 Hz, 10 seconds
ST 36: strong stimulation, 5 Hz, 10 seconds
KI 1: gentle stimulation, 5 Hz, 10 seconds

Treatment is repeated at weekly intervals.
Cervical syndrome

Major acupuncture points in the treatment of dorsal strain

DU 16: brief strong stimulation
DU 14: brief strong stimulation
BL 10 – BL 15: slight stimulation along the meridian moving upwards
BL 42 – BL 45: slight stimulation along the meridian moving upwards
SI 3: brief strong stimulation
BL 60: strong stimulation, repeatedly, 10 Hz, 10 seconds
KI 1: brief strong stimulation, repeatedly
Major acupuncture points in the treatment of lateral strain

- **GB 20**: slight stimulation along the meridian moving upwards
- **GB 21**: strong stimulation, 5 Hz, repeatedly for up to 10 seconds
- **BL 42 – BL 45**: strong stimulation along the meridian
- **GB 34**: strong stimulation, 5 Hz, repeatedly for up to 10 seconds
- **SJ 5**: strong stimulation, 5 Hz, repeatedly for up to 10 seconds
**Coxarthrosis**

Commonly used acupuncture points:

- **GB 30**: very strong stimulation, 10 Hz, repeatedly for 5 seconds
- **GB 31**: strong stimulation, 10 Hz, 5 seconds
- **Ashi point**: distal to the greater trochanter, strong stimulation, 10 Hz, 5 seconds
- **GB 34**: strong stimulation, 10 Hz, 5 seconds
- **SP 9**: strong stimulation, 10 Hz, 5 seconds
- **BL 23 – BL 25**: strong stimulation, 10 Hz, repeatedly for 5 seconds
Where necessary, the aforementioned acupuncture points are combined with peripheral influential points to achieve additional pain-reducing, anti-inflammatory or decongestive effects. The use of distant points depends on the specific pathological conditions:

GB 42 or GB 37 in case of weather-related pain with lateral pain radiation
BL 54, 40, 60, KI 1 in case of cold weather-related pain with dorsal pain radiation
SP 6 or SP 10 in case of congestion or disturbed distribution of tissue fluid
KI 1, KI 3 or Ren 6 in case of exhaustion
LV 3 in case of signs of heat or spasms
Heel pain

The following acupuncture points respond particularly well to shock wave therapy:

**Ashi points or local pain points**

The most important local point is a small area directly above the plantar tendon insertion of the calcaneus. This area is the site of maximum pain on standing or walking. Brief series of shocks taking 1 to 2 seconds are applied to stimulate the area without causing any significant pain.

- **KI 1**: strong stimulation, 10 Hz, repeatedly
- **GB 34**: strong stimulation, 10 Hz, repeatedly
- **GB 37**: strong stimulation, 10 Hz, within a 2 – 3 cm long band
- **LV 3**: strong stimulation with several individual shocks
- **LV 2**: strong stimulation with several individual shocks
- **BL 60**: strong stimulation, 10 Hz, towards the Achilles tendon
- **KI 3**: strong stimulation, 10 Hz, towards the Achilles tendon
- **BL 58**: strong stimulation, 10 Hz, repeatedly
- **ST 36**: strong stimulation, 10 Hz, repeatedly
Major acupuncture points:

Heding + Dubi + EX 32: brief strong stimulation
Ashi points above the inner and outer joint space: brief gentle stimulation
BL 40: strong stimulation, 10 Hz, repeatedly
KI 10: strong stimulation, 10 Hz, repeatedly
SP 9: strong stimulation, 10 Hz, repeatedly
LV 8: strong stimulation, 10 Hz, repeatedly

These acupuncture points form the »pillars« of the therapy. They should be stimulated regularly in cases of uncomplicated osteoarthritis of the knee joint in order to improve blood circulation in the joint capsule, enhance capsular stretchability and alleviate pain in general.

These points can be combined with the acupuncture points listed below. Apart from acting locally, these points have special additional effects:

Reduction of muscle tone: GB 32: strong stimulation, 10 Hz, repeatedly
Reduction of muscle tone: GB 34: strong stimulation, 10 Hz, repeatedly
Pain relief: ST 36: strong stimulation, 10 Hz, repeatedly
Lymphedema: SP 6: strong stimulation, 10 Hz, repeatedly
Strain: ST 40: strong stimulation, 10 Hz, repeatedly
Strain, calf muscles: BL 58: gentle stimulation, 10 Hz, repeatedly
Strain, calf muscles: BL 57: gentle stimulation, 10 Hz, repeatedly
General weakness: KI 3: gentle stimulation, 10 Hz, repeatedly
General weakness: KI 1: gentle stimulation, 10 Hz, repeatedly
Pain relief: LV 3: gentle stimulation, several individual shocks

Gonarthrosis
Lumbago

Major acupuncture points in the treatment of lumbago:

Local points (brief gentle stimulation of individual points):
- Ashi points in the lower back and pelvic regions
- Hua Tuo points above the lumbar spine
- Du Mai 3 and Du Mai 4

BL 23 – BL 27: massage over large area
BL 52 – BL 54: massage over large area
GB 30: strong stimulation, 10 Hz, repeatedly
Die Applikationsenergie

Die Stosswellenbehandlung bewirkt einen analgetischen Effekt der die Behandlung für Ihren Patienten möglichst angenehm gestaltet:

• Beginnen Sie mit einer Anfangsenergie von ca. 1.5 – 2 bar, Energien bis 3 bar sind in der Regel ausreichend
• Berichtet Ihr Patient von einem Nachlassen des Schmerzes, können Sie die Energie durch die Pfeiltasten langsam steigern
• Orientieren Sie sich an der Schmerzempfindlichkeit des Patienten (Biofeedback).

Die Frequenzeinstellung

Beginnen Sie die Behandlung mit 5 Hz. Da die Schmerzempfindung bei jedem Patienten anders ist, sollten Sie während der Behandlung durch Umschalten der Frequenz testen, welche Einstellung Ihr Patient besser verträgt.

Stosswellen-Koppelkissen

Ist eine hygienische Patientenankoppelung gewünscht, erfolgt die Anwendung mit dem Druckwellen-Koppelkissen für 6 mm bzw. 15 mm- Applikator. Koppelöl muss zwischen Membran und Applikator aufgetragen werden.

GB 34: strong stimulation, 10 Hz, repeatedly
BL 40: strong stimulation, 10 Hz, repeatedly
BL 60: brief strong stimulation, 2 – 3 times
SI 3: brief strong stimulation, 2 – 3 times
Lumbago: distant points

BL 11: brief strong stimulation, 5 Hz, 2 – 3 times
Ren 4: strong stimulation
ST 36: strong stimulation, repeatedly
GB 34: strong stimulation, repeatedly
Die Applikationsenergie

Die Stosswellenbehandlung bewirkt einen analgetischen Effekt, der die Behandlung für Ihren Patienten möglichst angenehm gestaltet:

• Beginnen Sie mit einer Anfangsenergie von ca. 1.5 – 2 bar, Energien bis 3 bar sind in der Regel ausreichend
• Berichten Sie von einem Nachlassen des Schmerzes, können Sie die Energie durch die Pfeiltasten langsam steigern
• Orientieren Sie sich an der Schmerzempfindlichkeit des Patienten (Biofeedback).

Die Frequenzeinstellung

Beginnen Sie die Behandlung mit 5 Hz. Da die Schmerzempfindung bei jedem Patienten anders ist, sollten Sie während der Behandlung durch Umschalten der Frequenz testen, welche Einstellung Ihr Patient besser verträgt.

Stosswellen-Koppelkissen

Ist eine hygienische Patientenankoppelung gewünscht, erfolgt die Anwendung mit dem Druckwellen-Koppelkissen für 6 mm bzw. 15 mm - Applikator. Koppelöl muss zwischen Membran und Applikator aufgetragen werden.

| KI 1: | brief strong stimulation, 10 Hz, 2 – 3 times |
| KI 3: | brief strong stimulation, 10 Hz, 2 – 3 times |
| SP 6: | brief strong stimulation, 10 Hz, 2 – 3 times |

Lumbago therapy is performed by selecting 4 to 6 of the previously listed local points in the lumbar spine region which correspond to the local pain radiation described by the patient. These points are combined with 1 to 2 distant points to treat the pain that radiates along the meridian. Depending on the additional symptoms experienced by the patient, 1 to 2 influential points are also used. The total number of acupuncture points should be limited to about 12 points, and the selected combination should remain unchanged over at least six therapy sessions.
Symptoms of irritable bladder include pain and spasms in the bladder and lower abdominal region, frequent urge to urinate, occasional incontinence, general unrest and nervousness.

**Major acupuncture points:**

- **BL 23:** strong stimulation, 10 Hz, repeatedly, over large area
- **BL 28:** gentle stimulation, 10 Hz, 10 seconds
- **LV 2:** strong stimulation, several individual shocks
- **LV 3:** strong stimulation, several individual shocks
- **SP 6:** strong stimulation, 10 Hz, along the meridian
- **SP 9:** strong stimulation, 10 Hz, 10 seconds
- **Ren 4:** strong stimulation, 10 Hz, repeatedly

Shock wave acupuncture is performed twice a week until six sessions have been completed. Treatment is then interrupted for two weeks to observe the effects achieved. A second series of therapy sessions can be started after the two weeks’ interval.
Local pain point above the tendon insertion

Repeated strong stimulation from the distal aspect of the tendon insertion. No direct shock wave application to the bone.

Additional points:

- LI 11: strong stimulation, 10 Hz, repeatedly
- LI 10: strong stimulation, 10 Hz, repeatedly
- LI 4: strong stimulation, 10 Hz, repeatedly
- GB 20: strong stimulation, 10 Hz, repeatedly

Pain above the olecranon:

- SJ 10: strong stimulation, 10 Hz, repeatedly
- SJ 12: strong stimulation, 10 Hz, repeatedly
- SJ 5: strong stimulation, 10 Hz, repeatedly

Distant points:

- GB 20: repeated gentle smoothing moving upwards from the bottom, 10 Hz
- GB 34: strong stimulation, 10 Hz, repeatedly
Other proven applications

Shoulder-hand syndrome

Recommended basic points, 10 Hz, 1.4 – 1.6 bar:
Sanjiao Meridian 15, SJ 14, SJ 13, SJ 5, Large Intestine 15, Small Intestine 3, SI 9
Die Applikationsenergie
Die Stosswellenbehandlung bewirkt einen analgetischen Effekt der die Behandlung für Ihren Patienten möglichst angenehm gestaltet:

• Beginnen Sie mit einer Anfangsenergie von ca. 1.5 – 2 bar, Energien bis 3 bar sind in der Regel ausreichend
• Berichten Sie nicht, können Sie die Energie durch die Pfeiltasten langsam steigern
• Orientieren Sie sich an der Schmerzempfindlichkeit des Patienten (Biofeedback).

Die Frequenzeinstellung
Beginnen Sie die Behandlung mit 5 Hz. Da die Schmerzempfindung bei jedem Patienten anders ist, sollten Sie während der Behandlung durch Umschalten der Frequenz testen, die für seinen Patienten die beste Verträglichkeit aufweist.

Stosswellen-Koppelkissen
Ist eine hygienische Patientenankoppelung gewünscht, erfolgt die Anwendung mit dem Druckwellen-Koppelkissen für 6 mm bzw. 15 mm-Applikator. Koppelöl muss zwischen Membran und Applikator aufgetragen werden.

Trochanteric insertional tendinitis
Recommended basic points, 10 Hz, 1.4 – 1.6 bar:
Gallbladder Meridian 30, GB 31, GB 34, GB 29, Bladder 54

Lumbar spine syndrome
Recommended basic points, 10 Hz, 1.4 – 1.6 bar:
Bladder 23, BL 24, BL 25, BL 54, BL 40, BL 60, Gallbladder 34
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Worldwide sales and service

Medical specialists all over the world benefit from our experience using systems developed by STORZ MEDICAL AG.

Based in Tägerwilen/Switzerland, the company operates around the globe through its branch offices and partners, making sure that qualified service personnel are there when you need them.

Creating synergies

Complex technology is only as good as the skills of the people who use it. Our training concepts are geared to the interaction between doctors, systems and patients. We provide on-the-spot training to our medical partners to ensure efficient use and operation of our systems right from the very start.

Rely on us to support you in the development of new application methods. After all, it is your know-how and ideas that pave the way for the continuous development of leading-edge technology.