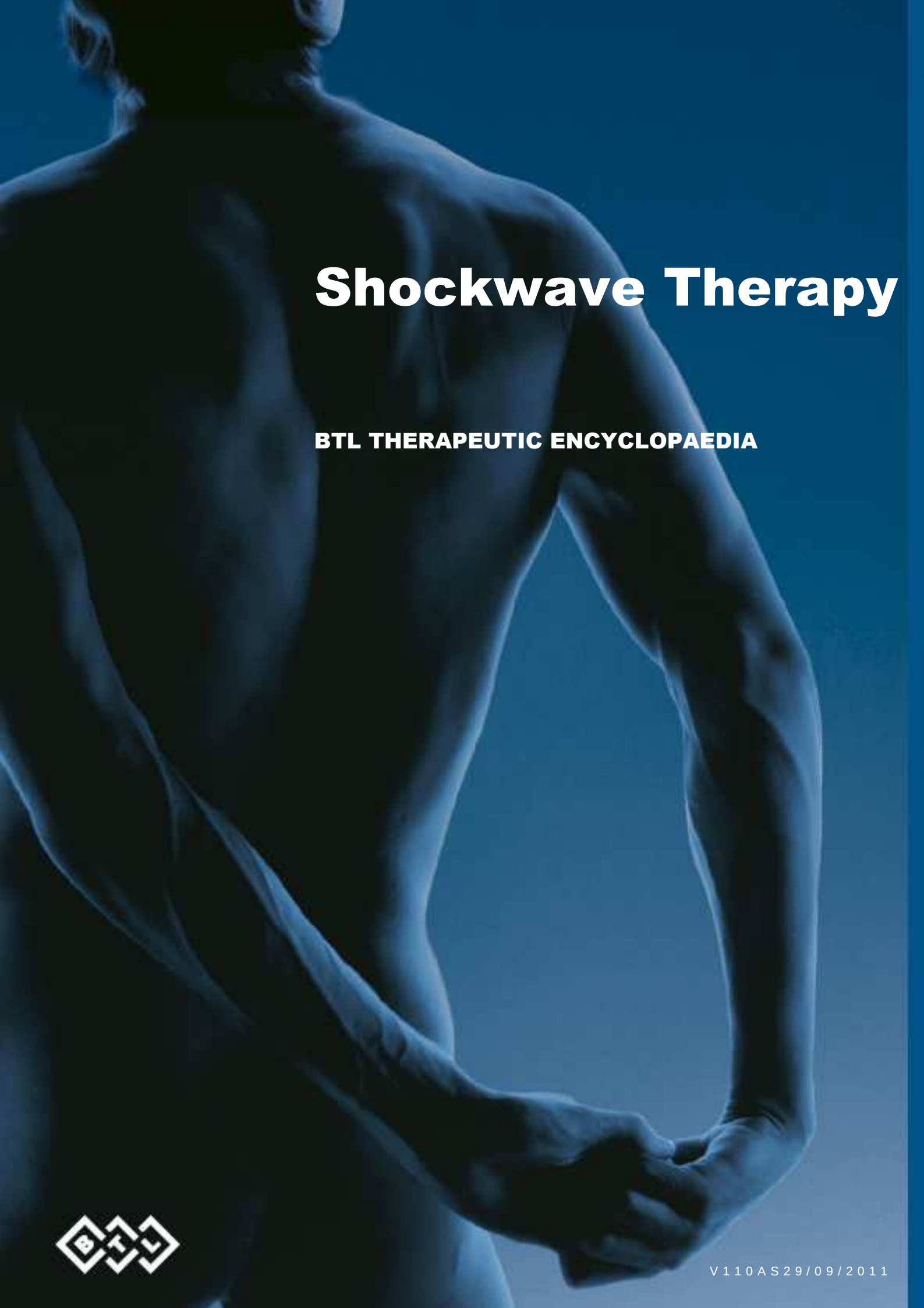


Shockwave Therapy

BTL THERAPEUTIC ENCYCLOPAEDIA

V110AS29/09/2011

WARNING!

APPLICATION OF SHOCKWAVE THERAPY HAS TO ALWAYS BE PRECEDED WITH A COMPLETE CLINICAL EXAMINATION. IN ACUTE INJURY AN ULTRASOUND SCAN OR MRI SHOULD ALWAYS BE ADMINISTERED BEFORE COMMENCING TREATMENT. APPLICATION OF SHOCKWAVE THERAPY CAN ONLY BE ADMINISTERED BY AN EXPERIENCED CLINICIAN WITH EXTENSIVE PRACTICE IN SWT TREATMENT.

THESE THERAPY PROTOCOLS AND RELATED INFORMATION SHOULD ONLY BE USED AS A GUIDELINE.

BTL-6000 SWT: valid from FW No. 7.04.0000R100
BTL-5000 SWT: valid from FW No. 7.07.0000R100

1 ACUTE MUSCLE SPASM

Program	W-0120 program: W-0120 acute muscle spasm
Therapy parameters	type: continual pressure: 2.5 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	Explain the procedure to your patient. Give them an idea of what to expect during the treatment. Reassure the patient that the intense feeling caused by the treatment will not harm them.~The patient's positioning depends on the therapeutic area to be treated. Muscle relaxation of the treated region and the surrounding area, especially the adjacent area, always has to be taken into consideration.
Frequency of treatments	every 3 days
Number of treatments	1 - 4
Process of treatment	Spread an ample amount of transmission gel over the entire area. Make sure that there is always sufficient transmission gel between the surface of the skin and the applicator. Always keep the applicator perpendicular to the skin. Stay in the contact with the skin, and apply soft pressure during the whole treatment. ~Initial part of the treatment: Apply soft pressure with the applicator.~Set the air pressure to about 2 bars and the application frequency to about 10 Hz. Using a "painting" technique, apply 500 shocks around the most painful spot. Avoid application just above this spot (Figure 1). ~Main part of the treatment: Apply medium pressure with the applicator.~Increase the air pressure to the maximum tolerance level of the patient. You may then apply approximately 1000 shocks over hypertonic muscle using a swivelling technique (Figure 2). ~Final part of the treatment: Apply medium pressure with the applicator.~Again using the painting technique, deliver around 500 shocks (air pressure: 2-3 bars / frequency: 15 Hz) to treat other structures surrounding the spastic muscle. This will help increase local blood circulation and it will relieve the muscle stiffness caused by the primary painful irritation. If any other stiff points were located during the treatment, treat each of them with an additional 500-1000 shocks, using the swivelling technique.
Note	In the event of swelling or intense pain in the treated area, the repeated application of a cold pack, for no longer than 30 seconds at a time, is advised.~In the treated body part, shockwave therapy should be combined with the stretching exercises of both the agonistic and the antagonistic muscle groups.~Active training or stretching exercises of the treated muscle is acceptable up to 40% of the maximal muscle performance is acceptable, if the complete elimination of training activities is not possible Intensive, aerobic-level, training should be discontinued during the entire interval between sessions.~Continuation of stretching exercises or other regime precautions if necessary.~Clinical evaluation each week of the ongoing therapy is necessary.
Complications	Haematoma and petechia~Temporary hypersensitivity to or an increase in pain~Localized swelling~Most symptoms will disappear within minutes or hours after treatment.

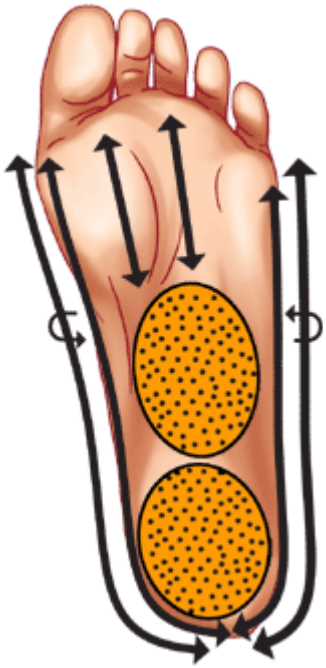
Contraindications	Application on head, neck, spinal cord, myocardium, gonad, kidney, liver, large nerves and vessels, gas containing organs~Sensational deficite in the focal area~Blood coagulation disorder and during the use of anticoagulants~Pregnancy~Thrombosis~Cancer, tumor diseases~Extensive swelling in the therapeutic area~Growing cartilage and bone in children
	(1803)

2 ACHILLODYNIA

Program	W-0101 program: W-0101 achillodynia
Therapy parameters	type: continual pressure: 2 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	lying prone, leg supported under the ankle
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Manual localization of painful points by means of palpation along the Achilles tendon. ~Application of gel. ~Start the therapy with 400 shocks, 2.5 bar, 5 Hz around the most painful point, subsequently treat the most painful point with approx. 1000 shocks, always longitudinally along the tendon, then apply successively on additional painful points in the calf. Increase the energy gradually up to 3 bar according to the patient's reaction, last 400 shocks apply with a frequency of 10 Hz. If needed, the number of shocks may be increased by additional 2000 during one application.
Note	We recommend ultrasound examination of the Achilles tendon, especially in the patients who have formerly received local administration of corticosteroids. Painful points are indicated by the dotted areas in the picture. The arrows indicate the direction of movement of the applicator on related areas. (1108)

3 CALCAR CALCANEI, PLANTAR FASCIITIS

Program	W-0100 program: W-0100 calcar calcanei, plantar fasciitis
Therapy parameters	type: continual pressure: 2.5 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	Lying prone, leg supported under the ankle. Manual localization of the painful point by means of palpation.
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Manual localization of painful points by means of palpation around the heel and on the sole. ~Application of gel. ~Start the therapy with 400 shocks, 2.5 bar, 10 Hz around the most painful point, subsequently treat the most painful point with approx. 1000 shocks, then apply successively in the surrounding tissues including the plantar aponeurosis and the Achilles tendon. Increase the energy gradually up to 3.5 bar according to the patient's reaction, last 400 shocks apply with a frequency of 15 Hz.
Note	If needed, the number of shocks may be increased to 2,500 during one application. Painful points are indicated by the dotted areas in the picture. The arrows indicate the direction of movement of the applicator on related areas. (1107)

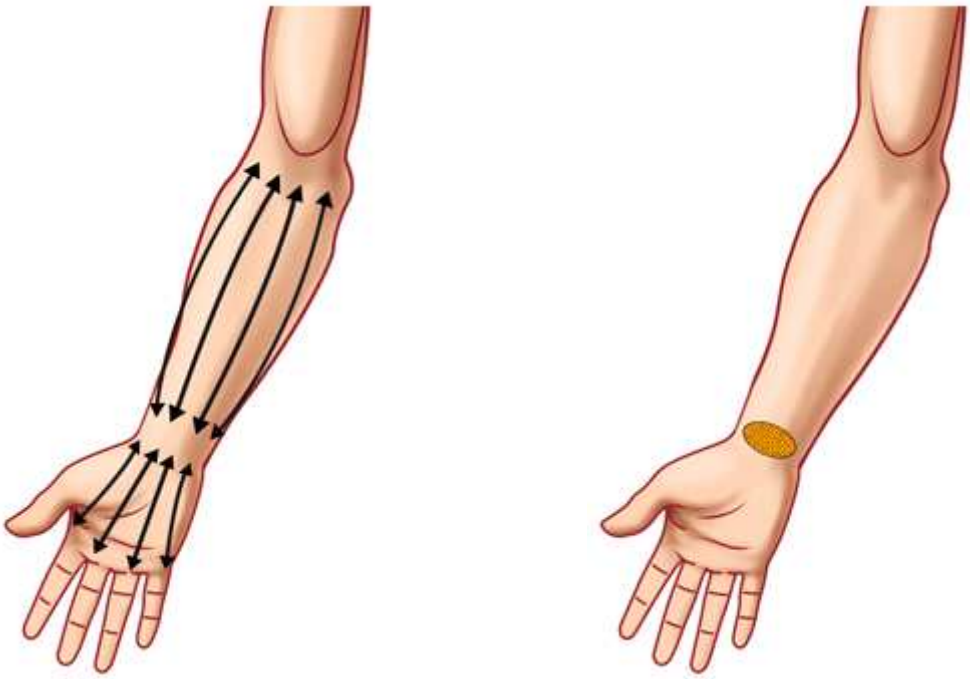


4 CALCIFICATION EXTRAARTICULAR

Program	W-0127 program: W-0127 calcification extraarticular
Therapy parameters	type: continual pressure: 2.5 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	Explain the procedure to your patient. Give them an idea of what to expect during the treatment. Reassure the patient that the intense feeling caused by the treatment will not harm them.~The patient's positioning depends on the therapeutic area to be treated. Muscle relaxation of the treated region and the surrounding area, especially the adjacent area, always has to be taken into consideration.
Frequency of treatments	every 4 - 7 days
Number of treatments	4 - 6
Process of treatment	Spread an ample amount of transmission gel over the entire area. Make sure that there is always sufficient transmission gel between the surface of the skin and the applicator. Always keep the applicator perpendicular to the skin. Stay in the contact with the skin, and apply soft pressure during the whole treatment. ~Initial part of the treatment: Apply soft pressure with the applicator.~Set the air pressure to about 2 bar and the application frequency to 10 Hz. Using a "painting" technique, apply 500 shocks above the whole muscle group where the calcification is located (Figure 1). ~Main part of the treatment: Apply medium pressure with the applicator.~Increase the air pressure to 2,5 bars. You may now apply approximately 1000 shocks (Figure 2) over the area of calcification muscle a swivelling technique (air pressure: 2-3 bars / frequency: 15 Hz). If any other trigger points were located during the treatment, treat each trigger point with an additional 500-1000 shocks, using the swivelling technique.
Note	In the event of swelling or intense pain in the treated area, the repeated application of a cold pack, for no longer than 30 seconds at a time, is advised.~In the treated body part, shockwave therapy should be combined with the stretching exercises of both the agonistic and the antagonistic muscle groups.~Active training or stretching exercises of the treated muscle is acceptable up to 40% of the maximal muscle performance, if the complete elimination of training activities is not possible. Intensive, aerobic-level, training should be discontinued during the entire interval between sessions.~Continuation of stretching exercises or other regime precautions if necessary.~Clinical evaluation each week of the ongoing therapy is necessary.
Complications	Haematoma and petechia~Temporary hypersensitivity to or an increase in pain~Localized swelling~Most symptoms will disappear within minutes or hours after treatment.
Contraindications	Application on head, neck, spinal cord, myocardium, gonad, kidney, liver, large nerves and vessels, gas containing organs~Sensational deficite in the focal area~Blood coagulation disorder and during the use of anticoagulants~Pregnancy~Thrombosis~Cancer, tumor diseases~Extensive swelling in the therapeutic area~Growing cartilage and bone in children
	(1832)

5 CARPAL TUNNEL SYNDROME

Program	W-0126 program: W-0126 carpal tunnel syndrome
Therapy parameters	type: continual pressure: 2 Bar frequency: 10 Hz number of shocks: 2500
Diameter of the head	15 mm
Patient position	Explain the procedure to your patient. Give them an idea of what to expect during the treatment. Reassure the patient that the intense feeling caused by the treatment will not harm them.~Preferably, the patient should lie on their back or sitting in such a position as to allow complete muscle relaxation of the arm.
Frequency of treatments	every 4 - 7 days
Number of treatments	4 - 6
Process of treatment	Spread an ample amount of transmission gel over the entire area. Make sure that there is always sufficient transmission gel between the surface of the skin and the applicator. Always keep the applicator perpendicular to the skin. Stay in the contact with the skin, and apply soft pressure during the whole treatment. ~Initial part of the treatment: Apply soft pressure with the applicator.~Set the air pressure to about 2 bar and the application frequency to 10 Hz. Using a “painting" technique, apply 500 shocks over the frontal side of forearm, wrist and palm (Figure 1). ~Main part of the treatment: Apply soft pressure with the applicator.~You may then apply approximately 1000 shocks over carpal joints area using a swivelling technique (Figure 2). ~Final part of the treatment: Apply medium pressure with the applicator.~Again using the painting technique, deliver around 1000 shocks (air pressure: 2,5 bars / frequency: 15 Hz) to treat over the frontal side of forearm, wrist and palm (Figure 1). This will help increase local blood circulation and it will relieve the muscle stiffness caused by the primary painful irritation. If any other stiff points were located during the treatment, treat each of them with an additional 500-1000 shocks, using the swivelling technique.
Note	In the event of swelling or intense pain in the treated area, the repeated application of a cold pack, for no longer than 30 seconds at a time, is advised.~In the treated body part, shockwave therapy should be combined with the stretching exercises of both the agonistic and the antagonistic muscle groups.~Active training or stretching exercises of the treated muscle is acceptable up to 40% of the maximal muscle performance, if the complete elimination of training activities is not possible.~Intensive, aerobic-level, training should be discontinued during the entire interval between sessions.~Continuation of stretching exercises or other regime precautions if necessary.~Clinical evaluation each week of the ongoing therapy is necessary.
Complications	Haematoma and petechia~Temporary hypersensitivity to or an increase in pain~Localized swelling~Most symptoms will disappear within minutes or hours after treatment.
Contraindications	Application on head, neck, spinal cord, myocardium, gonad, kidney, liver, large nerves and vessels, gas containing organs~Sensational deficite in the focal area~Blood coagulation disorder and during the use of anticoagulants~Pregnancy~Thrombosis~Cancer, tumor diseases~Extensive swelling in the therapeutic area~Growing cartilage and bone in children
	(1831)



6 EXOSTOSES OF SMALL HAND JOINTS IN CASE OF GRADE 1 ARTHROSIS

Program	W-0109 program: W-0109 exostoses of small hand joints in case of grade 1 arthrosis
Therapy parameters	type: continual pressure: 2 Bar frequency: 10 Hz number of shocks: 1500
Diameter of the head	15 mm
Patient position	lying on back or sitting, arms in the right-angled flexion in the elbow, comfortably supported, preferably with a soft elastic pad
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Palmar manual localization of painful points. ~Application of gel. ~Start the therapy with 400 shocks, 2 bar, 5 Hz around the most painful points, subsequently treat the most painful points with approx. 1000 shocks, last 400 shocks can be applied on the palm with a frequency of 10 Hz.
Note	Painful points are indicated by the dotted areas in the picture. The arrows indicate the direction of movement of the applicator on related areas. (1116)

7 HEALING ENHANCEMENT

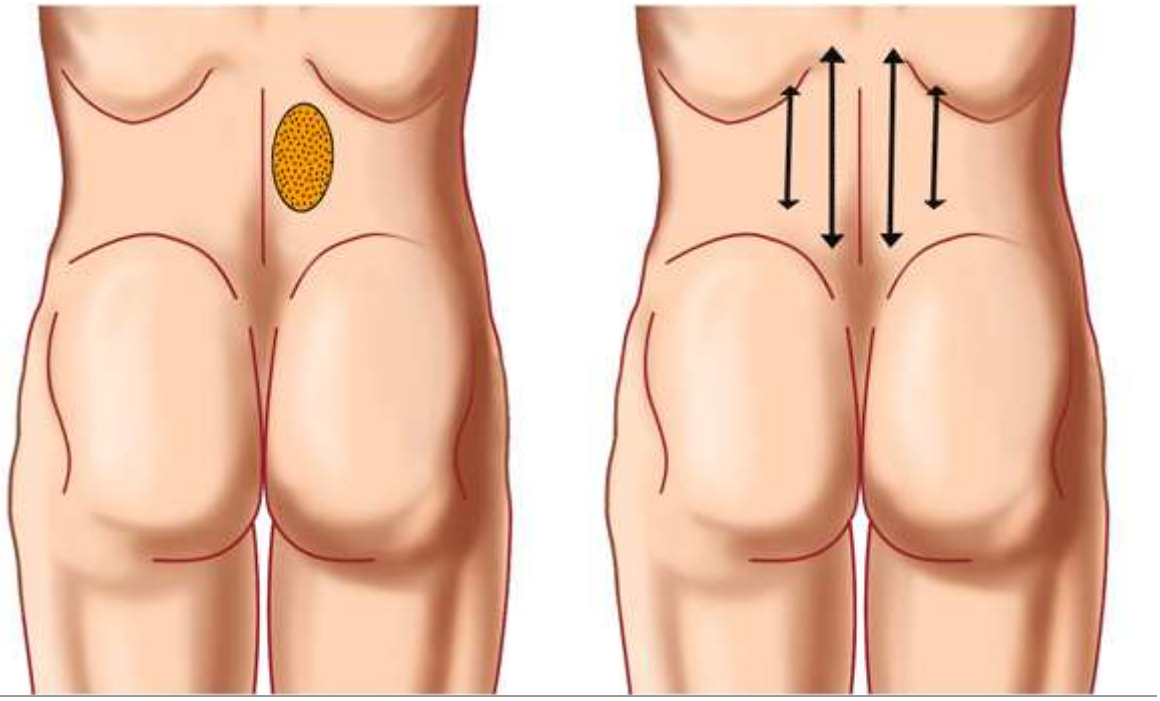
Program	W-0121 program: W-0121 healing enhancement
Therapy parameters	type: continual pressure: 1.5 Bar frequency: 15 Hz number of shocks: 1500
Diameter of the head	15 mm
Patient position	Explain the procedure to your patient. Give them an idea of what to expect during the treatment. Reassure the patient that the intense feeling caused by the treatment will not harm them.~The patient's positioning depends on the therapeutic area to be treated. Muscle relaxation of the treated region and the surrounding area, especially the adjacent area, always has to be taken into consideration.
Frequency of treatments	every 3 days
Number of treatments	3
Process of treatment	Spread an ample amount of transmission gel over the entire area. Make sure that there is always sufficient transmission gel between the surface of the skin and the applicator. Always keep the applicator perpendicular to the skin. Stay in the contact with the skin, and apply soft pressure during the whole treatment. ~Initial part of the treatment: Apply soft pressure with the applicator~Set the air pressure to about 1.5 bars and the application frequency to about 15 Hz. Using a "painting" technique, apply 500 shocks around the whole treatment area. This includes all the soft tissues surrounding the injured joint (Figure 1). Avoid application above the distended part of the joint capsule or tendon. ~Main part of the treatment: Apply medium pressure with the applicator.~Increase the air pressure to about 2 bars, if it is well tolerated. You may now apply approximately 1000 shocks again over the whole area of the injured joint or tendon. Using the painting technique, distribute the shocks uniformly all over the entire area (Figure 2). ~Final part of the treatment: Apply medium pressure with the applicator~Again using the painting technique, deliver around 500 shocks (air pressure: 2-3 bars / frequency: up to 20 Hz) to treat other structures surrounding the key trigger point. This will help increase local blood circulation and it will relieve the muscle stiffness caused by the primary painful irritation. If any other trigger points were located during the treatment, treat each trigger point with an additional 500-1000 shocks, using the swivelling technique.
Note	Always respect the restrictions resulting from your patients injury. Shockwave therapy brings immediate pain reduction, but the recovery time for the healing process is still necessary.~In the event of swelling or intense pain in the treated area, the repeated application of a cold pack, for no longer than 30 seconds at a time, is advised.~In the treated body part, active training should be reduced, optimally to stretching.~Active training of the treated muscle is acceptable up to 40% of the maximal muscle performance, when the complete elimination of training activities is not acceptable
Complications	Haematoma and petechia~Temporary hypersensitivity to or an increase in pain~Localized swelling~Most symptoms will disappear within minutes or hours after treatment.
Contraindications	Application on head, neck, spinal cord, myocardium, gonad, kidney, liver, large nerves and vessels, gas containing organs~Sensational deficite in the focal area~Blood coagulation disorder and during the use of anticoagulants~Pregnancy~Thrombosis~Cancer, tumor diseases~Extensive swelling in the therapeutic area~Growing cartilage and bone in children
	(1804)

8 KNEE ARTHROSIS

Program	W-0122 program: W-0122 knee arthrosis
Therapy parameters	type: continual pressure: 2 Bar frequency: 10 Hz number of shocks: 3000
Diameter of the head	15 mm
Patient position	Explain the procedure to your patient. Give them an idea of what to expect during the treatment procedure. Reassure the patient that the intense sensations caused by the treatment will not harm them.~~Preferably, the patient should lie on their back in such a position allowing complete muscle relaxation. The entire lower limb being treated should lie in a relaxed position, supported by a foam roll.
Frequency of treatments	every 4 - 7 days
Number of treatments	10
Process of treatment	Spread an ample amount of transmission gel over the entire area. Make sure that there is always sufficient transmission gel between the surface of the skin and the applicator. Always keep the applicator perpendicular to the skin. Stay in the contact with the skin, and apply soft pressure during the whole treatment. ~Main part of the treatment:~Set the air pressure to about 2 bars and the application frequency to 10 Hz. Apply about 1000 shocks above the joint capsule or preferably above the joint fissure (Figure 1). ~Final part of the treatment:~Increase the air pressure to about 3 bars, if it is well tolerated. Eventually you may increase the pressure with the applicator to medium pressure. Now apply approximately 2000 shocks using the painting technique. Distribute the shocks uniformly all over the surrounding areas (Figure 2). This will help increase local blood circulation and it will relieve the muscle stiffness caused by the primary painful irritation (air pressure: 3 bars / frequency: 15 Hz). If any other trigger points were located during the treatment, treat each trigger point with an additional 500-1000 shocks, using the swivelling technique.
Note	In the event of swelling or intense pain in the treated area, the repeated application of a cold pack, for no longer than 30 seconds at a time, is advised.~In the treated body part, shockwave therapy should be combined with the stretching exercises of both the agonistic and the antagonistic muscle groups.~Active training or stretching exercises of the treated muscle is acceptable up to 40% of the maximal muscle performance is acceptable, if the complete elimination of training activities is not possible.~Intensive, aerobic-level, training should be discontinued during the entire interval between sessions.~Continuation of stretching exercises or other regime precautions if necessary.~Clinical evaluation each week of the ongoing therapy is necessary.
Complications	Haematoma and petechia~Temporary hypersensitivity to or an increase in pain~Localized swelling~Most symptoms will disappear within minutes or hours after treatment.
Contraindications	Application on head, neck, spinal cord, myocardium, gonad, kidney, liver, large nerves and vessels, gas containing organs~Sensational deficite in the focal area~Blood coagulation disorder and during the use of anticoagulants~Pregnancy~Thrombosis~Cancer, tumor diseases~Extensive swelling in the therapeutic area~Growing cartilage and bone in children
	(1827)

9 LOW BACK PAIN

Program	W-0124 program: W-0124 low back pain
Therapy parameters	type: continual pressure: 2 Bar frequency: 10 Hz number of shocks: 3000
Diameter of the head	15 mm
Patient position	Explain the procedure to your patient. Give them an idea of what to expect during the treatment. Reassure the patient that the intense feeling caused by the treatment will not harm them.~Optimal patient's position should be lying prone with supported shanks. Muscle relaxation of the treated region and the surrounding area, especially the adjacent area, always has to be taken into consideration.
Frequency of treatments	every 4 - 7 days
Number of treatments	4 - 6
Process of treatment	Spread an ample amount of transmission gel over the entire area. Make sure that there is always sufficient transmission gel between the surface of the skin and the applicator. Always keep the applicator perpendicular to the skin. Stay in the contact with the skin, and apply soft pressure during the whole treatment. Maximum therapeutic pressure in the lumbar area should not exceed 2 bars. During the whole application you should strictly avoid area above spinous processes! ~Initial part of the treatment: Apply soft pressure with the applicator.~Set the air pressure to 2 bars and the application frequency to about 10 Hz. Using a "painting" technique, apply 500 shocks around the most painful spot. Avoid application just above this spot (Figure 1). ~Main part of the treatment: Apply medium pressure with the applicator.~You may then apply approximately 1000 shocks over hypertonic muscle using a swivelling technique (Figure 1). ~Final part of the treatment: Apply medium pressure with the applicator.~Again using the painting technique, deliver around 1500 shocks (air pressure: 2 bars / frequency: 15 Hz) to treat both spinal extensor muscle groups bilaterally (Figure 2).This will help increase local blood circulation and it will relieve the muscle stiffness caused by the primary painful irritation. If any other stiff points were located during the treatment, treat each of them with an additional 500-1000 shocks, using the swivelling technique.
Note	~Shockwave therapy is contraindicated in case of acute disc hernia or protrusion!~In lumbar area the aplication is limited only onto the zone of trunk extensor muscles.~Active training or stretching exercises of the treated muscle up to 40% of the maximal muscle performance is acceptable, if the complete elimination of training activities is not possible.~Clinical evaluation each week of the ongoing therapy is necessary.
Complications	Haematoma and petechia~Temporary hypersensitivity to or an increase in pain~Localized swelling~Most symptoms will disappear within minutes or hours after treatment.
Contraindications	Application on head, neck, spinal cord, myocardium, gonad, kidney, liver, large nerves and vessels, gas containing organs~Sensational deficite in the focal area~Blood coagulation disorder and during the use of anticoagulants~Pregnancy~Thrombosis~Cancer, tumor diseases~Extensive swelling in the therapeutic area~Growing cartilage and bone in children
	(1829)



10 MUSCLE REGENERATION

Program	W-0119 program: W-0119 muscle regeneration
Therapy parameters	type: continual pressure: 1.5 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	Explain the procedure to your patient. Give them an idea of what to expect during the treatment. Reassure the patient that the intense feeling caused by the treatment will not harm them.~The patient's positioning depends on the therapeutic area to be treated. Muscle relaxation of the treated region and the surrounding area, especially the adjacent area, always has to be taken into consideration.
Frequency of treatments	every 3 days
Number of treatments	3
Process of treatment	Spread an ample amount of transmission gel over the entire area. Make sure that there is always sufficient transmission gel between the surface of the skin and the applicator. Always keep the applicator perpendicular to the skin. Stay in the contact with the skin, and apply soft pressure during the whole treatment. ~Initial part of the treatment: Apply soft pressure with the applicator.~Set the air pressure to about 1.5 bar and the application frequency to 10 Hz. Using a "painting" technique, apply 500 shocks above the whole muscle group to be regenerated. ~Main part of the treatment: Apply medium pressure with the applicator.~Increase the air pressure to 2 bars. You may now apply approximately 1000 shocks over the entire muscle group using a swivelling technique. Eventually you may treat other muscles surrounding the primary muscle group, again with the use of painting technique. This will help increase local blood circulation and it will relieve the muscle stiffness caused by the primary painful irritation.
Note	In the event of swelling or intense pain in the treated area, the repeated application of a cold pack, for no longer than 30 seconds at a time, is advised.~Refrain from physical/sport activities for 1 week or an individualised adjustment of the patient's program should be considered.~Continuation of stretching exercises or other regime precautions if necessary.~Clinical evaluation 8 - 12 weeks after treatment.
Complications	Haematoma and petechia~Temporary hypersensitivity to or an increase in pain~Localized swelling~Most symptoms will disappear within minutes or hours after treatment.
Contraindications	Application on head, neck, spinal cord, myocardium, gonad, kidney, liver, large nerves and vessels, gas containing organs~Sensational deficite in the focal area~Blood coagulation disorder and during the use of anticoagulants~Pregnancy~Thrombosis~Cancer, tumor diseases~Extensive swelling in the therapeutic area~Growing cartilage and bone in children
	(1802)

11 MUSCLE STRAIN

Program	W-0118 program: W-0118 muscle strain
Therapy parameters	type: continual pressure: 2.5 Bar frequency: 15 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	Explain the procedure to your patient. Give them an idea of what to expect during the treatment. Reassure the patient that the intense feeling caused by the treatment will not harm them.~The patient's positioning depends on the therapeutic area to be treated. Muscle relaxation of the treated region and the surrounding area, especially the adjacent area, always has to be taken into consideration.
Frequency of treatments	every 2-4 days
Number of treatments	7-10
Process of treatment	Therapeutic procedures are divided into two diverse stages. First stage is 1-4 days from the injury and has to take into consideration the acute healing status in the traumatized muscle. Second stage when the majority of the healing processes runs over is from the 5th-28th day after injury. ~~THERAPY PROCEDURE-STAGE 1 (1-4 days after injury): ~In first three days after the injury strong respect to the acute trauma is necessary. Shockwave therapy is concentrated on the structures surrounding the muscle strain. Application straight above the injured spot is unsuitable. Shockwave brings local vasodilatation and myorelaxation of the surrounding muscles, what supports the acute healing reactions. The shockwave treatment should be applied on second and fourth day from the injury. ~Initial part of the treatment: Apply soft pressure with the applicator.~Set the air pressure to about 2.5 bars and the application frequency to about 15 Hz. Using a "painting" technique and very soft pressure, apply 500 shocks to the soft tissues surrounding the location of the muscle strain (Figure 1). Avoid application directly above the injured spot. ~Main part of the treatment: Apply medium pressure with the applicator.~Increase the air pressure to about 3.5 bars and set the application frequency to about 12 Hz. Using a "painting" technique apply 1500 pulses to the soft tissues surrounding the area of the muscle strain (Figure 1). You may now use a more intense "medium" pressure with the applicator. Again avoid application directly above the injured spot. If any trigger or tender points were localized during the treatment, treat each of them with additional 500 shocks, whilst using a swivelling motion. ~~THERAPY PROCEDURE-STAGE 2 (5-28 days after injury):~From the fourth day from the time of injury shockwave therapy is recommended to be used both above the injured area as well as the surrounding structures. Application pressure over the strain has to be increased gradually from session to session. The frequency of sessions is optimally every fourth day. ~Initial part of the treatment: Apply soft pressure with the applicator.~Set the air pressure to about 2.5 bars and the application frequency to about 15 Hz. Using a "painting" technique, apply 500 pulses to the soft tissues surrounding the place of the muscle strain (Figure 1). Do not apply straight above the injured spot in this initial part of the treatment. ~Main part of the treatment: Apply medium pressure with the applicator~Continue with the air pressure 2.5 bars and decrease the application frequency to about 12 Hz. Using a "swivelling" technique apply 1500 pulses above the muscle strain and closely around the surrounding area (Figure 2). You may now use a more intense "medium" pressure with the applicator.~Important: During the following therapeutic sessions, you may

	increase the application pressure up to 3.5 bars, if the therapy is well tolerated. ~Final part of the treatment: Apply medium pressure with the applicator.~Now using the painting technique, deliver around 500 shocks (air pressure: 3.5 bars / frequency: 15 Hz) to treat the entire muscle group where the trauma is located. This will help increase local blood circulation and it will relieve any muscle stiffness caused by the primary painful irritation. If any stiff points were localized during the treatment, treat each of them with an additional 500-1000 shocks, using the swivelling technique. In this case you may increase the intensity to the maximum tolerance level of your patient.
Note	In the event of swelling or intense pain in the treated area, the repeated application of a cold pack, for no longer than 30 second intervals, is advised.~In the treated body part, active training is restricted, during the first stage of the treatment.~Active training or stretching exercises of the treated muscle is acceptable up to 40% of the maximal muscle performance is acceptable in the second stage of the treatment, if the complete elimination of training activities is not possible.~Intensive, aerobic-level, training should be discontinued during the entire interval between sessions. Preferably, rest therapy, is recommended between the swt sessions.~Clinical evaluation each week of the ongoing therapy is necessary.
Complications	Haematoma and petechia~Temporary hypersensitivity to or an increase in pain~Localized swelling~Most symptoms will disappear within minutes or hours after treatment.
Contraindications	Application on head, neck, spinal cord, myocardium, gonad, kidney, liver, large nerves and vessels, gas containing organs~Sensational deficite in the focal area~Blood coagulation disorder and during the use of anticoagulants~Pregnancy~Thrombosis~Cancer, tumor diseases~Extensive swelling in the therapeutic area~Growing cartilage and bone in children
	(1801)

12 PAIN IN THE AREA OF THE HIP AND THE ILIOTIBIAL TRACT

Program	W-0104 program: W-0104 pain in the area of the hip and the iliotibial tract
Therapy parameters	type: continual pressure: 2.5 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	lying on side
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Manual localization of painful points in the trochanter major region and along the iliotibial tract. ~Application of gel. ~Start the therapy with 400 shocks, 2.5 bar, 10 Hz around the most painful point, subsequently treat the most painful point with approx. 1000 shocks, then apply successively along the iliotibial tract, last 400 shocks apply with a frequency of 15 Hz. ~If needed, the number of shocks may be increased by additional 2000 during one application.
Note	Caution: Aim the shockwave at soft tissues only, avoid direct application on the bone! Painful points are indicated by the dotted areas in the picture. The arrows indicate the direction of movement of the applicator on related areas. (1111)

13 PAIN IN THE GROIN AREA

Program	W-0106 program: W-0106 pain in the groin area
Therapy parameters	type: continual pressure: 2.5 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	lying on back, lower extremity supported in slight semiflexion both in the hip joint and knee joint and in slight abduction
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Manual localization of painful points in the groin region and along the muscles on the front and inner side of the thigh. ~ Application of gel. ~ Start the therapy with 400 shocks, 2.5 bar, 10 Hz around the most painful point, subsequently treat the most painful point with approx. 1000 shocks, then apply successively over the inner and front side of the thigh, last 400 pulses apply with a frequency of 15 Hz. ~ If needed, the number of shocks may be increased by additional 2000 during one application.
Note	Caution: Avoid application on the inguinal channel (passage of large vessels and nerve bundles, lymph nodes). Painful points are indicated by the dotted areas in the picture. The arrows indicate the direction of movement of the applicator on related areas. (1113)

14 PAIN IN THE HAMSTRING INSERTIONS

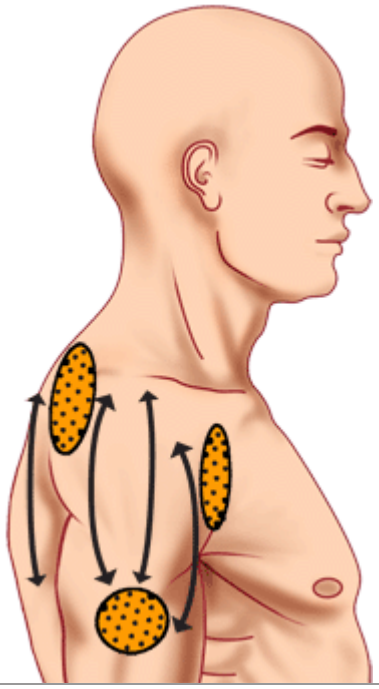
Program	W-0105 program: W-0105 pain in the hamstring insertions
Therapy parameters	type: continual pressure: 2.5 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	lying prone
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Manual localization of painful points in the area of tuber ischiadicum and along the hamstrings. ~Application of gel. ~Start the therapy with 400 shocks, 2.5 bar, 10 Hz around the most painful point, subsequently treat the most painful point with approx. 1000 shocks, then apply successively over the rear side of the thigh, last 400 shocks apply with a frequency of 15 Hz.
Note	If needed, the number of shocks may be increased by additional 2,000 during one application. Painful points are indicated by the dotted areas in the picture. The arrows indicate the direction of movement of the applicator on related areas. (1112)

15 PAIN ON THE PALMAR SIDE OF THE WRIST

Program	W-0110 program: W-0110 pain on the palmar side of the wrist
Therapy parameters	type: continual pressure: 2 Bar frequency: 10 Hz number of shocks: 1500
Diameter of the head	15 mm
Patient position	lying on back or sitting, arms in the right-angled flexion in the elbow, comfortably supported, preferably with a soft elastic pad
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Palmar manual localization of painful points. Application of gel. Start the therapy with 400 shocks, 2 bar, 5 Hz around the most painful point, subsequently treat the most painful point with approx. 1000 shocks, last 400 shocks apply with a frequency of 10 Hz.
Note	Caution: Avoid the area of the passage of vessels and nerve bundles on the wrist! Painful points are indicated by the dotted areas in the picture. The arrows indicate the direction of movement of the applicator on related areas. (1117)

16 PAINFUL SHOULDER (CALCIFICATION, TENDONITIS, IMPINGEMENT SYNDROME)

Program	W-0107 program: W-0107 painful shoulder (calcification, tendonitis, impingement syndrome)
Therapy parameters	type: continual pressure: 3 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	lying on back or sitting
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Manual localization of painful points in soft tissues around the shoulder joint by means of palpation, localization of painful points located in deeper structures by means of shockwaves. Application of gel. Start the therapy with 400 shocks, 3 bar, 10 Hz around the most painful point, subsequently treat the most painful point with approx. 1000 shocks, then apply successively in the entire shoulder girdle, last 400 shocks apply with a frequency of 15 Hz.
Note	We recommend performing ultrasound localization of calcifications. Painful points are indicated by the dotted areas in the picture. The arrows indicate the direction of movement of the applicator on related areas. (1114)

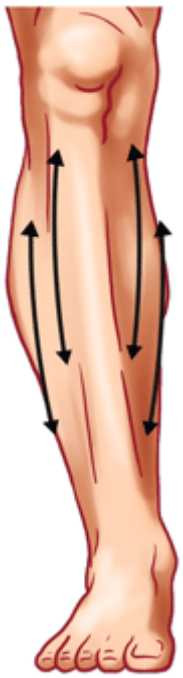


17 PATELLAR TENDINOPATHY (JUMPERS KNEE)

Program	W-0102 program: W-0102 patellar tendinopathy (jumpers knee)
Therapy parameters	type: continual pressure: 2 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	lying on back, supported knee
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Manual localization of painful points by means of palpation on the edges of the patella and the insertion of m.quadriceps femoris. ~Application of gel. ~Start the therapy with 400 shocks, 2 bar, 5 Hz around the most painful point, subsequently treat the most painful point with approx. 1000 shocks, then apply successively on additional painful points on the thigh. Increase the energy gradually up to 3 bar according to the patient's reaction, last 400 shocks apply with a frequency of 10 Hz.
Note	If needed, the number of shocks may be increased by additional 2,000 during one application. Painful points are indicated by the dotted areas in the picture. The arrows indicate the direction of movement of the applicator on related areas. (1109)

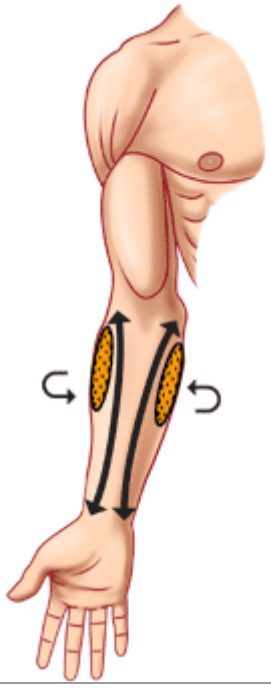
18 PSEUDOARTHROSIS

Program	W-0128 program: W-0128 pseudoarthrosis
Therapy parameters	type: continual pressure: 2 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	Explain the procedure to your patient. Give them an idea of what to expect during the treatment. Reassure the patient that the intense feeling caused by the treatment will not harm them.~The patient's positioning depends on the therapeutic area to be treated. Muscle relaxation of the treated region and the surrounding area, especially the adjacent area, always has to be taken into consideration.
Frequency of treatments	every 4 days
Number of treatments	6 - 8
Process of treatment	Spread an ample amount of transmission gel over the entire area. Make sure that there is always sufficient transmission gel between the surface of the skin and the applicator. Always keep the applicator perpendicular to the skin. Stay in the contact with the skin, and apply soft pressure during the whole treatment.~Initial part of the treatment: Apply soft pressure with the applicator.~Set the air pressure to about 2 bar and the application frequency to 15 Hz. Using a "painting" technique, apply 1000 shocks above the whole muscle groups surrouding the area of pseudoarthrosis location (Figure 1).~Main part of the treatment: Apply soft pressure with the applicator.~You may now apply approximately 1000 shocks (Figure 2) over the area of pseudoarthrosis using a swivelling technique (air pressure: 2 bars / frequency: 15 Hz). If any other trigger points were located during the treatment, treat each trigger point with an additional 500-1000 shocks, using the swivelling technique.
Note	In the event of swelling or intense pain in the treated area, the repeated application of a cold pack, for no longer than 30 seconds at a time, is advised.~In the treated body part, shockwave therapy should be combined with the stretching exercises of both the agonistic and the antagonistic muscle groups.~Active training or stretching exercises of the treated muscle up to 40% of the maximal muscle performance is acceptable, if the complete elimination of training activities is not possible.~Intensive, aerobic-level, training should be discontinued during the entire interval between sessions.~Continuation of stretching exercises or other regime precautions if necessary.~Clinical evaluation each week of the ongoing therapy is necessary.
Complications	Haematoma and petechia~Temporary hypersensitivity to or an increase in pain~Localized swelling~Most symptoms will disappear within minutes or hours after treatment.
Contraindications	Application on head, neck, spinal cord, myocardium, gonad, kidney, liver, large nerves and vessels, gas containing organs~Sensational deficite in the focal area~Blood coagulation disorder and during the use of anticoagulants~Pregnancy~Thrombosis~Cancer, tumor diseases~Extensive swelling in the therapeutic area~Growing cartilage and bone in children
Warning	APPLICATION OF SHOCKWAVE THERAPY HAS TO ALWAYS BE PRECEDED WITH A COMPLETE CLINICAL EXAMINATION. IN ACUTE INJURY AN ULTRASOUND SCAN OR MRI SHOULD ALWAYS BE ADMINISTERED BEFORE COMMENCING TREATMENT. APPLICATION OF SHOCKWAVE THERAPY CAN ONLY BE ADMINISTERED BY AN EXPERIENCED CLINICIAN WITH EXTENSIVE PRACTICE IN SWT TREATMENT.~~THESE THERAPY PROTOCOLS AND RELATED INFORMATION SHOULD ONLY BE USED AS A GUIDELINE. (1833)



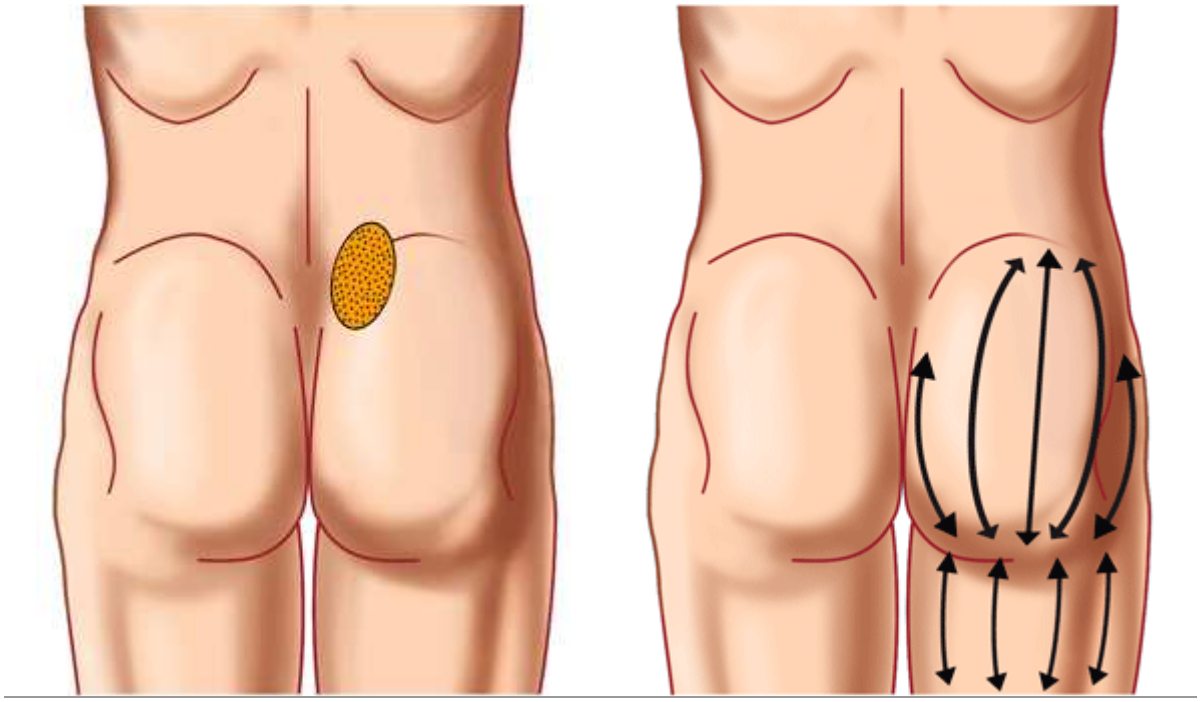
19 RADIAL/ULNAR EPICONDYLITIS

Program	W-0108 program: W-0108 radial/ulnar epicondylitis
Therapy parameters	type: continual pressure: 2 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	lying on back or sitting, arms in the right-angled flexion in the elbow, comfortably supported, preferably with a soft elastic pad
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Manual localization of painful points in the area of radial/ulnar epicondyle and along the related muscle groups of the forearm. ~Application of gel. ~Start the therapy with 400 shocks, 2 bar, 5 Hz around the most painful point, subsequently treat the most painful point with approx. 1000 shocks, then apply successively in the related muscle groups of the forearm, last 400 shocks apply with a frequency of 10 Hz.
Note	Painful points are indicated by the dotted areas in the picture. The arrows indicate the direction of movement of the applicator on related areas. (1115)



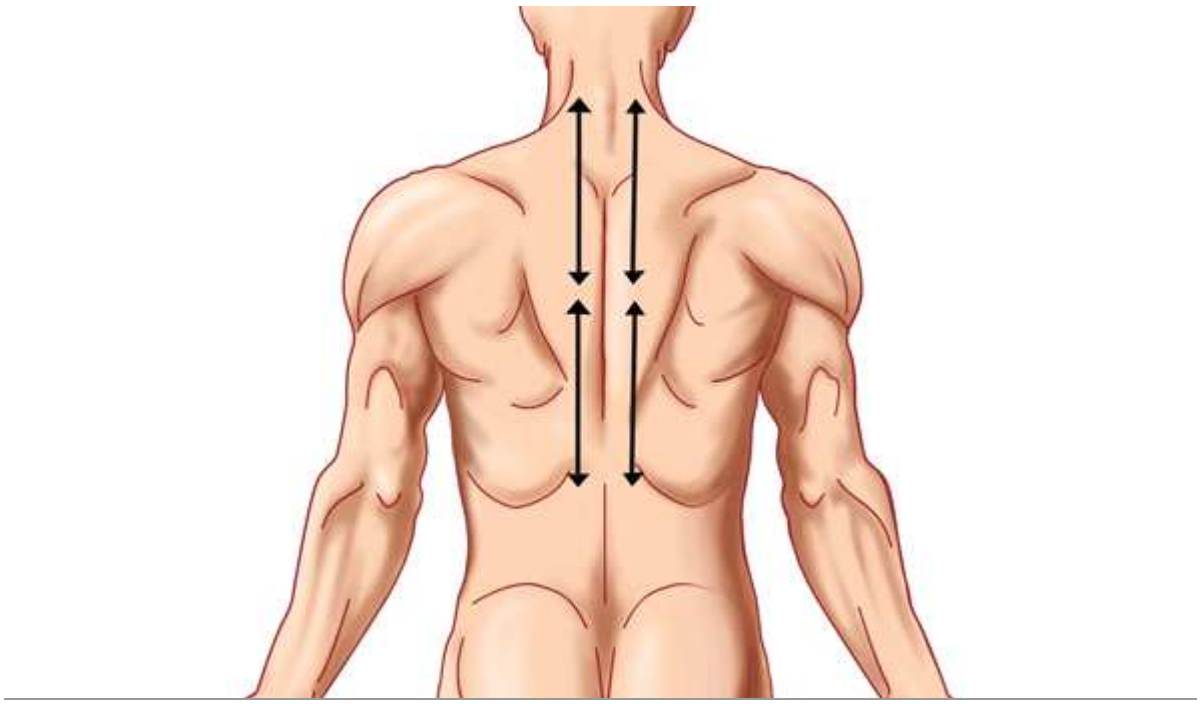
20 SACROILIAC JOINT PAIN

Program	W-0123 program: W-0123 sacroiliac joint pain
Therapy parameters	type: continual pressure: 3 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	Explain the procedure to your patient. Give them an idea of what to expect during the treatment. Reassure the patient that the intense feeling caused by the treatment will not harm them.~Optimal patient's position should be lying prone with supported shanks. Muscle relaxation of the treated region and the surrounding area, especially the adjacent area, always has to be taken into consideration.
Frequency of treatments	every 4 - 7 days
Number of treatments	4 - 6
Process of treatment	Spread an ample amount of transmission gel over the entire area. Make sure that there is always sufficient transmission gel between the surface of the skin and the applicator. Always keep the applicator perpendicular to the skin. Stay in the contact with the skin, and apply soft pressure during the whole treatment.~Main part of the treatment:~Set the air pressure to about 3 bars and the application frequency to 10 Hz. Apply about 1000 shocks above the joint capsule or preferably above the joint fissure (Figure 1).~Final part of the treatment:~Increase the air pressure to 3,5 bars, if it is well tolerated. Eventually you may increase the pressure with the applicator to medium pressure. Now apply approximately 1000 shocks using the painting technique. Distribute the shocks uniformly all over the surrounding areas (Figure 2). This will help increase local blood circulation and it will relieve the muscle stiffness caused by the primary painful irritation (air pressure: 3,5 bars / frequency: 15 Hz). If any other trigger points were located during the treatment, treat each trigger point with an additional 500-1000 shocks, using the swivelling technique.
Note	Shockwave therapy is contraindicated in case of acute disc hernia or protrusion. ~Active training or stretching exercises of the treated muscle up to 40% of the maximal muscle performance is acceptable, if the complete elimination of training activities is not possible.~Clinical evaluation each week of the ongoing therapy is necessary.
Complications	Haematoma and petechia~Temporary hypersensitivity to or an increase in pain~Localized swelling~Most symptoms will disappear within minutes or hours after treatment.
Contraindications	Application on head, neck, spinal cord, myocardium, gonad, kidney, liver, large nerves and vessels, gas containing organs~Sensational deficite in the focal area~Blood coagulation disorder and during the use of anticoagulants~Pregnancy~Thrombosis~Cancer, tumor diseases~Extensive swelling in the therapeutic area~Growing cartilage and bone in children
Warning	APPLICATION OF SHOCKWAVE THERAPY HAS TO ALWAYS BE PRECEDED WITH A COMPLETE CLINICAL EXAMINATION. IN ACUTE INJURY AN ULTRASOUND SCAN OR MRI SHOULD ALWAYS BE ADMINISTERED BEFORE COMMENCING TREATMENT. APPLICATION OF SHOCKWAVE THERAPY CAN ONLY BE ADMINISTERED BY AN EXPERIENCED CLINICIAN WITH EXTENSIVE PRACTICE IN SWT TREATMENT.~~THESE THERAPY PROTOCOLS AND RELATED INFORMATION SHOULD ONLY BE USED AS A GUIDELINE. (1828)



21 SPONDYLITIS ANKYLOSING - BECHTEREV'S DISEASE

Program	W-0125 program: W-0125 spondylitis ankylosing - Bechterev's disease
Therapy parameters	type: continual pressure: 2 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	Explain the procedure to your patient. Give them an idea of what to expect during the treatment. Reassure the patient that the intense feeling caused by the treatment will not harm them.~Optimal patient's position should be lying prone with supported shanks. Muscle relaxation of the treated region and the surrounding area, especially the adjacent area, always has to be taken into consideration.
Frequency of treatments	every 4 - 7 days
Number of treatments	6 - 8
Process of treatment	Spread an ample amount of transmission gel over the entire area. Make sure that there is always sufficient transmission gel between the surface of the skin and the applicator. Always keep the applicator perpendicular to the skin. Stay in the contact with the skin, and apply soft pressure during the whole treatment. Maximum therapeutic pressure in the thoracic area should not exceed 2 bars. During the whole application you should strictly avoid area above spinous processes! ~Initial part of the treatment: Apply soft pressure with the applicator. ~Set the air pressure to 2 bars and the application frequency to about 10 Hz. Using a "painting" technique, apply 1000 shocks to treat spinal extensor muscle groups bilaterally in the whole thoracic area (Figure 1). ~Main part of the treatment: Apply medium pressure with the applicator ~Using a "painting" technique, apply 1000 shocks with frequency 15 Hz to treat spinal extensor muscle groups bilaterally in the whole thoracic area (Figure 1). If any other stiff points were located during the treatment, treat each of them with an additional 500-1000 shocks, using the swivelling technique.
Note	~Shockwave therapy is contraindicated in case of acute disc hernia or protrusion.~In thoracic area the aplication is limited only onto the zone of trunk extensor muscles. ~Active training or stretching exercises of the treated muscle up to 40% of the maximal muscle performance is acceptable, if the complete elimination of training activities is not possible.~Clinical evaluation each week of the ongoing therapy is necessary.
Complications	Haematoma and petechia~Temporary hypersensitivity to or an increase in pain~Localized swelling~Most symptoms will disappear within minutes or hours after treatment.
Contraindications	Application on head, neck, spinal cord, myocardium, gonad, kidney, liver, large nerves and vessels, gas containing organs~Sensational deficite in the focal area~Blood coagulation disorder and during the use of anticoagulants~Pregnancy~Thrombosis~Cancer, tumor diseases~Extensive swelling in the therapeutic area~Growing cartilage and bone in children
Warning	APPLICATION OF SHOCKWAVE THERAPY HAS TO ALWAYS BE PRECEDED WITH A COMPLETE CLINICAL EXAMINATION. IN ACUTE INJURY AN ULTRASOUND SCAN OR MRI SHOULD ALWAYS BE ADMINISTERED BEFORE COMMENCING TREATMENT. APPLICATION OF SHOCKWAVE THERAPY CAN ONLY BE ADMINISTERED BY AN EXPERIENCED CLINICIAN WITH EXTENSIVE PRACTICE IN SWT TREATMENT.~~THESE THERAPY PROTOCOLS AND RELATED INFORMATION SHOULD ONLY BE USED AS A GUIDELINE. (1830)



22 STIMULATION OF ACUPUNCTURE POINTS

Program	W-0112 program: W-0112 stimulation of acupuncture points
Therapy parameters	type: continual pressure: 1.5 Bar frequency: 10 Hz number of shocks: 500
Diameter of the head	15 mm
Patient position	depending on the treated area
Frequency of treatments	preferably within 2 - 5 days
Number of treatments	3 - 10 sessions
Process of treatment	Apply directly on acupuncture points. (1119)

23 TIBIAL EDGE SYNDROME

Program	W-0103 program: W-0103 tibial edge syndrome
Therapy parameters	type: continual pressure: 1.5 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	lying on back, supported knee
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Manual localization of painful points along the tibia. ~Application of gel. ~Start the therapy with 400 shocks, 1.5 bar, 5 Hz around the most painful point, subsequently treat the most painful point with approx. 1000 shocks, then apply successively on additional painful points. Increase the energy gradually up to 2.5 bar according to the patient's reaction, last 400 shocks apply with a frequency of 10 Hz. ~If needed, the number of shocks may be increased by additional 500 during one application.
Note	Caution: Aim the shockwave at soft tissues only, avoid direct application on the bone! Painful points are indicated by the dotted areas in the picture. The arrows indicate the direction of movement of the applicator on related areas. (1110)

24 TRIGGER POINTS

Program	W-0111 program: W-0111 trigger points
Therapy parameters	type: continual pressure: 2 Bar frequency: 10 Hz number of shocks: 2000
Diameter of the head	15 mm
Patient position	depending on the treated area
Frequency of treatments	preferably within 5 - 10 days
Number of treatments	3 - 5 sessions
Process of treatment	Manual localization of trigger points by means of palpation. ~Application of gel. ~Apply directly on trigger points in the whole area. (1118)