

TRIGGER SHOCK WAVE THERAPY (TST®)

A new application of shockwave therapy for the causal treatment of musculoskeletal pain and problems in sports medicine

As a result of Dr. Wolfgang Bauermeister's discoveries, trigger shockwave therapy (TST®) offers new possibilities for treating the causes of pain in the musculoskeletal system and in problems in sports medicine.

The goal of TST® is to break down triggers, thickened and permanently shortened segments of muscle fibres within the muscle. Triggers are the principal cause of pain in the back, neck, shoulder and limbs. A characteristic of triggers is that they produce so-called transmitted phenomena such as pain, tingling, numbness and muscle cramps. That means that pain is felt far from the area where it originates - the trigger area. This is what makes the diagnosis of the cause of the pain so difficult, because the site of the pain and the site of its origin are not identical. However, conventional therapies assume that the cause of the pain is in the area of the pain and therefore treat the symptom and not the cause. The failure of most therapies, e.g. in chronic back pain, speaks for itself.

The German-American specialist in Physical Medicine and Rehabilitation, Dr. Wolfgang Bauermeister from Munich, has developed a novel method of investigation for discovering the cause of the pain. It is based on the concept of American trigger medicine, which has been established in conventional American medicine for the past two decades. The real meaning of this concept is only now becoming clear through the new diagnostic possibilities developed by Dr. Bauermeister.

The basis of trigger diagnosis is the realisation that high pressures have to be applied to the muscle in order to produce the transmitted phenomena. That means that the symptoms from which the patient is suffering can be

produced exactly by strong pressure on the trigger area, similarly to pressing on a doorbell. When the right bell buttons have been found, the therapy can begin.

Originally, Dr. Bauermeister used about the pressure that he needed to diagnose the trigger areas (approx. 10 to 40 kg) for therapy, employing a device he had developed, the TRIGGOsan key. This was painful for the patients and caused haematomas, and in addition it was very strenuous for the operator. With the introduction of Radial Extracorporeal Shockwave Therapy (RSWT), the treatment became painfree. No more haematomas occurred and the operator no longer had to exert himself physically.

Preliminary studies show that TST[®] can be used successfully in back pain, sciatica, vertebral disc problems, neck and shoulder pain and the shoulder impingement syndrome. Other promising indications are problems in sports medicine such as insertion tendinopathy, tendon, tendon sheath and muscle problems. In these cases, Dr. Bauermeister finds the cause in trigger areas of the affected muscles themselves.

Because of the trigger areas, the muscle becomes susceptible to injury because it is shortened, indurated and inelastic. The functioning of contractile elements, elastic in series and in parallel, in the muscle is impaired, so that the muscle is weakened, in turn leading to a reduction in strength and endurance. Due to increased tension in the muscle, especially under loading, tendons, tendon sheaths and tendon insertions are over-strained, giving rise to premature degeneration and susceptibility to injury. A further consequence of this overstraining of the tendon insertion is axial deformity, which leads to mechanical overstressing of individual joint segments, through which secondary arthritis can develop.

Dr. Bauermeister can find trigger areas in most pain and sports medicine problems, and treating them then leads to a solution to the problem. Many prolonged and even treatment-resistant problems can be treated suc-

cessfully through the causal approach of TST®. In particular, TST® can shorten the period of rehabilitation after injuries and operations, which is particularly important in professional sport.

Although the precise mechanism of action of TST® is still unclear, it can be assumed that regeneration is hastened by means of the increase in the microcirculation. Immediate effects of TST® are a reduction in pain, muscle lengthening and relaxation, increased range of movement of the joints, increased strength, and a rise in the amplitude and muscle action potentials on EMG.

TST® has particular significance in prevention because it is possible to diagnose trigger areas before they produce perceptible symptoms.

Successful TST® treatment demands sound training in trigger diagnosis, structural kinesiology (functional anatomy) and the dosage and operation of the shockwave therapy device in order to avoid complications.

Two-day courses are available, which are organised for individual areas of the body:

1. Low back pain and sciatica
2. Lower limb with hip, knee and ankle
3. Head, neck and shoulder girdle
4. Upper limb with shoulder, elbow and wrist.

Further courses are available with the emphasis on the sports of football, tennis, golf and Itarck and field athletics.

Indications:

1. Muscle:

- Muscle sprain
- Muscle fibre tear
- Muscle aches
- Muscle cramps
- Restoration of muscle function after immobilisation
- Prevention of muscle injury
- Muscle tension
- Muscle induration

2. Tendon:

- Insertion tendinopathies :
 - Lateral epicondylitis (tennis elbow)
 - Medial epicondylitis (golfer's elbow)
 - Coracoid (biceps tendon, coracobrachialis muscle)
 - Ulnar styloid process
 - Radial styloid process
 - Olecranon (triceps tendon)
 - Pubic tubercle (adductor insertion)
 - Ischium (footballer's groin strain)
 - SIAS (Rect)
 - SIAI
 - Pes anserinus
 - Quadriceps tendon insertion
 - Patellar tendon insertion
 - Achilles tendon insertion
 - Medial tibial border
 - Lateral tibial border
 - Peroneus brevis insertion on 5th metatarsal
 - Vertebral spinous processes, interspinous ligaments, trapezius muscle

3. Tendinosis

4. Tendovaginitis (forearm):

- Tendovaginitis stenosans
- Tendovaginitis crepitans

5. Peritendinitis (Achilles tendon)

6. Other indications in sport:

- Increasing performance in the area of sport and fitness
- Increasing endurance
- Improving coordination
- Prevention of overuse problems
- Reduction in the risk of injury

7. Pain syndromes

- Cervical syndrome
- Thoracic syndrome
- Lumbar syndrome
- Sciatica
- Shoulder-arm syndrome
- Impingement syndrome
- Pseudovisceral pain
- Headache
- Temporomandibular joint (TMJ) dysfunction
- Pain of hip dysplasia
- Early osteoarthritis of the hip
- Knee joint pain
- Recurrent knee effusion
- Calcaneal spur
- Metatarsalgia
- Hallux valgus

- Postoperative pain syndromes of the foot
- Speeding up rehabilitation after injuries, fractures and operations

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