



Combined shock wave therapy

in the treatment of sports injuries and defects

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Sports injuries or stress problems in athletics are often caused by a hardening of the muscles. This can limit athletes to such an extent that sporting activity may need to be discontinued immediately or performance is significantly diminished.

In addition, a hardened muscle can, if subjected to further strain, also lead to structural damage in the form of ruptures of muscle fibre or muscle bundles or even tendon lesions. Typical problems of this kind include, for example, a hardening of calf muscles in sports such as sprinting, which can then result in a tennis leg or achylydynia. Another classic instance is groin pain of muscular origin, which can lead to inflammation of the public bone at the insertion of the adductor muscles.

Good and rapid success

Good and mostly very rapid success was achieved with the combined shock wave therapy device DUOLITH® SD1 while treating athletes in various sports, categories and age groups, following differentiated diagnostics with radial (R-SW) and focused shock wave therapy (F-SW). Complete athletic capacity was restored in most cases after 3-4 treatment sessions.

First, the affected muscle was precisely identified and the responsible trigger points were isolated (this is done manually, partly with the use of F-SW), after which they were treated initially with focused shock waves. In most cases, several trigger points are found in the painful muscle, and an average of 4-5 trigger points per treatment session were treated. The energy quantities applied ranged from 0.05 (foot muscles) to 0.25 (gluteal region) mJ/mm^2 per pulse; approximately 200-500 pulses were applied per trigger point. Depending on the patient's pain sensation and the localisation of the trigger point (e.g. with trigger points of the M. gluteus minimus or M. gastrocnemius), treatment with the R-SW was also used. Here, approximately 2,000 pulses at 1.6-2.0 bar and a frequency of 8-15 Hz were applied. For larger-area problems,

such as fascia adhesions of the painful muscle, radial shock waves were the treatment of choice. Following the spray and stretch technique of Travell and Simons, the muscles were then smoothed with a large area applicator top piece fitted to the radial handpiece (D-ACTOR). A higher frequency, usually 15 – 18 Hz, was used in conjunction with the same intensity. Subsequently, the courses of treatment were, as a rule, completed with manual treatment, during which the affected muscle was stretched with PIR (post-isometric relaxation), or an underlying dysfunction, e.g. of the SI Joint (sacroiliac joint) or of the proximal fibulotibial joint, was rectified.

As early as after only one treatment, a significant reduction of pain symptoms was reported by nearly all of the athletes, and improved ROM (range of motion) of the neighbouring joints was detected as a rule.

The majority of disorders in the tendomuscular transition or tendinopathies were treated with radial shock waves. 2,000 – 3,000 pulses with an intensity of 1.2-1.6 bar were applied. Discomfort was also regressive in such cases after 4-5 courses of treatment.

Looking back on 7 years of experience and approximately 3,500 instances of treating athletes, combined shock wave therapy with DUOLITH® SD1 has been very successful in our practice for the rapid treatment of sports injuries and associated stress problems.

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