



*Radial shock waves are used for a variety of applications in physiotherapy. Christel Auer's treatment concept aims at the relaxation of soft tissue.*

*Photos: Kröner Medizintechnik, hfr*

# Shock wave therapy in equestrian sports

## Use in physiotherapy

Christel Auer, human physiotherapist and FN-approved equine physiotherapist, offers various treatment options to maintain the structural and functional balance of the equine sports partner. Christel Auer started to work in veterinarian medicine 16 years ago, focusing primarily on horses. In the treatment of equine patients, she also relies on the benefits of shock wave therapy.

Christel Auer's focus is on the therapy of horses used in competitive sports – in particular on restoring their natural movement patterns. Treatment is performed on the musculoskeletal system, soft tissue and myofascial pain syndromes.

While manual therapy is the basic treatment method, shock wave therapy, for example, may be used as an ideal complement. In general, musculoskeletal disorders are attributable to three main causes: "Non-use, misuse, overuse!" In other words: lack of movement, incorrect movement and excessive movement resulting in overuse disorders.

### **The challenge: correct diagnosis**

Horses are motion-oriented animals. Their movements need to be balanced and uniform. Many conditions of muscle tone dysbalance may cause blockages and deficits that need to be counteracted. Here is an example: A horse may be ridden with excessive weight on its forehand. It is crucial that the rider becomes aware of this situation and eliminates the problem. While people are able to learn and implement remedial recommendations, the horse is dependent on its human counterpart and requires guided and controlled therapy. The major challenge here is to establish the correct diagnosis and, consequently, to give the right therapy recommendations.

### **Positive results in equine top sports**

Years of experience have shown that young horses treated with these therapy methods have far less problems during their training and that even sport horses are able to maintain their performance level to an advanced age. It becomes evident that physiotherapy, in addition to

having a curative effect, also contributes substantially to keeping the horse's performance at a high level. Many famous riders and equestrian sport stables have long recognised the benefits of physiotherapy and have been using the services of Christel Auer for years. Auer's clients are located primarily in Germany, Sweden, Turkey, Luxembourg, the Netherlands, Hungary and Great Britain. Some of her long-standing regular clients are:

- Samantha McIntosh (World Cup, European Championship and Olympic Games participant for New Zealand, jumping)
- Katharina Offel (World Cup, European Championship and Olympic Games participant for the Ukraine, jumping)
- Cameron Hanley (World Cup, European Championship and Olympic Games participant for Ireland, jumping)
- Holger Wulschner (German national team and Nations Cup rider, jumping)
- Jonny Hilberath (dressage discipline trainer)
- Marie-Line Wettstein (World Cup participant and Swiss Champion, dressage)
- SIEC Istanbul (Sabanci International Equestrian Centre, Turkey)

#### Spectrum from dressage to driving

Christel Auer treats primarily horses used in equine top sports (Class M up to Grand Prix level, national and international), and she is frequently requested to be available at horse shows. The spectrum of equine patients ranges from dressage, jumping and racehorses up to driving horses. Clients should be aware that their horses require regular treatment so that preventive care can be provided rather than just treating specific pathological movement deficits. Equine physiotherapist Christel Auer recommends therapy intervals of between three and six weeks. However, shorter intervals, especially after horse shows, are the rule. Recreational horses are treated at intervals of eight to twelve weeks. Close co-operation with veterinarians is essential.



*Radial shock wave therapy is well-tolerated because it uses no painful high-energy shock waves. Horses become accustomed to it rather quickly.*

*Photo: Kröner Medizintechnik, hfr*



*The mobile radial shock wave therapy system  
Storz MASTERPULS® MP100 Vet.  
Photo: Storz Medical AG, hfr*

#### Radial shock waves (RSW)

Christel Auer has been using radial shock wave systems from Storz Medical for about a year now and has been able to achieve high success rates with this approach. "At first, I tested radial shock waves on several horses and quickly found out that this technology is very beneficial in my daily work", says Auer. Of course, the horses need to get accustomed to the procedure, but in most cases this takes only little time and effort and the therapy is very well tolerated. Excellent results are achieved with the combined soft tissue / shock wave therapy. It is important that the horses undergo regular treatment, ideally at weekly intervals. A one-off treatment is not suggested. And – as in many other disciplines – the technology is only as good as its user.

## What are shock waves?

#### Focused shock waves

Shock waves are acoustic pulses that are capable of temporarily transmitting energy from the point of generation to remote regions to cause window panes to shatter, for instance. Modern therapy systems are equipped with electromagnetic shock wave generators. As the focal zone is relatively small, it should be targeted at the therapy region with maximum precision. Focused shock waves are used primarily in the treatment of deep-sited target areas such as suspensory ligaments or calcifications (penetration depth up to 12 cm). Due to their considerable weight and size, therapy systems for focused shock waves are generally designed for stationary use in clinics. Initially, focused shock waves were used for lithotripsy applications to fragment kidney stones.

#### Radial shock waves

Strictly speaking, radial shock waves are acoustic pressure waves that are generated by ballistic collision of two solid bodies: a projectile is accelerated until it strikes a transmitter. The pressure waves produced in this manner propagate radially, i.e. spherically, inside the tissue. This ensures a very gentle treatment. The maximum energy level is applied at the skin surface, although modern materials research and state-of-the-art transmitters have enabled penetration depths of up to six centimetres to be achieved with radial shock waves. These waves are used primarily in the treatment of muscle disorders and insertional tendinitis, that is pathologies of the tendon/bone junction, but also in the treatment of suspensory ligament conditions. Therapy systems for radial shock wave application are ideal for mobile on-site use.



*Radial shock wave therapy can be performed on an outpatient basis. Therapy systems are flexible and ideal for mobile use. Photo: Kröner Medizintechnik, hfr*

### Technology requiring detailed explanations

Clients unfamiliar with shock wave therapy need to be informed in detail before treatment is started. Even if they do know how high-energy focused shock waves work, technological differences between focused and radial waves need to be explained. Horses treated with radial waves do not require sedation as no "painful" high-energy waves are applied. In these cases, it often takes a lot of convincing to get clients to believe in the painlessness of the therapy modality. Quite a few clients choose to undergo the therapy themselves before treating their horses to the procedure. "This clearly shows that radial shock wave therapy as an alternative treatment is not much known so far. As far as my personal therapy approach is concerned, radial shock waves work very well though and the good treatment results speak for themselves", says equine physiotherapist Christel Auer. It is the overall therapy concept that matters here.

In Christel Auer's field of work, radial shock waves are used as preventive care in the treatment of soft tissue and, more importantly, for the treatment of myofascial trigger points. When tendon insertions need to be treated, Auer would recommend a combination therapy using both focused and radial shock waves – provided that repeated treatments are performed over a period of four to six weeks. Radial shock wave systems are flexible and mobile and can be used for outpatient therapy.

### Reaction of horses to RSW therapy

Each horse reacts differently to the procedure. In general, show horses are used to different noise levels and are more relaxed during the therapy, while recreational horses need to be gently prepared for the treatment. Equine physiotherapist Christel Auer always starts the

procedure on an insensitive spot. It is important to keep the frequency constant while adjusting the pressure as needed. This allows the horse to signal pain. As horses may tense up during the therapy, the target areas to be treated need to be approached very cautiously. In order to prepare the horse for the procedure, it is also possible to use the V-ACTOR handpiece with massaging option available from Storz Medical before the actual shock wave therapy is started. The natural muscle fibre frequency is about 10 to 15 Hz, which explains why horses tolerate shock wave therapy or massaging if conducted at the specified frequencies. The therapy approach adopted by Christel Auer focuses on the relaxation of soft tissue. The combination of vibration and shock wave therapy substantially improves the effectiveness of her treatment modality. Tying the horse during the therapy is only necessary in very rare cases. "Shock wave therapy has become a mainstay of my work. The handpiece is like an extension of my fingers", says equine physiotherapist Christel Auer.

### Benefits of RSWT

Horses often perform to their maximum potential in a short period of time. Afterwards they require brief rest periods to regenerate. Shock waves promote and improve muscle relaxation and tension relief.

### About Christel Auer...

Christel Auer (PT, EqTPM) opened her own physiotherapy practice in 1991 (photo on the right, courtesy of Christel Auer). She works as an animal physiotherapist for the ZVK (German Physiotherapy Association), Equine Section, and has obtained FN approval (German Equestrian Federation). One of her main fields of specialisation is neuro-orthopaedics. Christel Auer followed various training courses in human physiotherapy. Moreover, in 1982 she started Bobath training, a therapy concept for patients with neurological pathologies. In 1995, Auer qualified as an Advanced Bobath



Instructor, a qualification held by only 18 therapists worldwide. Christel Auer is also a trained manual therapist, cranio-sacral therapist and myofascial trigger point therapist. In 1996, Auer underwent training in the United States to qualify as an equine physiotherapist (EqMPT). Christel Auer has been involved with horses for a long time (an active rider herself and Baden-Württemberg Show Jumping Champion) and is committed to maintaining and improving the performance level of sport horses. Auer started to focus on horses 16 years ago and primarily treats horses in top sports. Among other equipment, she uses radial shock wave systems from the Swiss manufacturer Storz Medical. These systems are distributed by Kröner Medizintechnik in Altenkirchen, Germany, for example.

### Further Information:

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