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Shock Waves Today

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Shock Wave Users
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Focus:
Sports Medicine

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Clinic J Medical Puts Its
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STORZ MEDICAL

The Prestigious Italian Clinic J Medical Puts Its Trust in Shock Waves from STORZ MEDICAL



Practical workshops on shock wave therapy in the Allianz stadium, Turin

J Medical is not only one of the most advanced sports medicine institutes in Italy, but one of the best in the whole of Europe. With an area of over 3,500 m², it offers an excellent range of diagnosis and treatment options that enjoy the highest reputation even far beyond the northern Italian city of Turin where it is based.

Part of the EXOR Group, J Medical is owned by the famous Agnelli family, which is also the majority owner of the legendary football club

Juventus. This explains the prominent situation of the medical centre, located as it is right in the eastern stands of the Allianz stadium, the home ground of Juventus. The football club and J Medical have worked together closely for many years now in the field of sports medicine – and with excellent results.

In order to guarantee high-quality sports medicine treatment, J Medical only uses the very best cutting-edge technology. In the field of

shock wave therapy, J Medical relies on its partnership with STORZ MEDICAL Italy. The team of doctors and therapists successfully works using focused shock waves and radial pressure waves (DUOLITH® SD1 TOWER »ultra«, MASTERPULS® MP 200 »ultra«), also using them in combination in the treatment of various indications. The partnership is also further intensified by the joint organisation of training events for Italian users of shock wave therapy.

Workshop with a Special Stadium Atmosphere

In summer 2017, J Medical and STORZ MEDICAL Italy held their first exclusive course entitled »Shock waves and the athlete«. The event was held on 1 and 2 July in the »Legends Club« at the Allianz stadium – with a direct view of the pitch. However, it wasn't just the setting that was extra special – it was also the agenda: Scientific lectures and practical workshops familiarised the 50 select participants with the latest trends and techniques in the field of extracorporeal shock wave therapy (ESWT). The workshop concentrated on the use of focused shock waves and radial pressure waves in sports medicine, particularly in top-flight sport. The teaching was done by high-profile experts from a range of fields, including Prof. Dr Sergio Russo, Prof. Dr Marco Gesi and Prof. Dr Fabrizio Angelini. The feedback from participants was overwhelmingly positive.



The J Medical sports medicine institute is headquartered at the Juventus football stadium.



High-profile experts shared their knowledge about shock waves in lectures and workshops.

At a Glance

- One of the best sports medicine institutes in Europe
- When treating (top-flight) athletes, the J Medical team uses both focused shock waves and radial pressure waves
- J Medical and STORZ MEDICAL Italy offer exclusive training sessions

Shock Waves in Sports Medicine: Success Stories from Around the World

Extracorporeal shock wave therapy (ESWT) was introduced to sports medicine and competitive sports over 20 years ago. Today, it is used in many countries – not just in Europe but around the globe. Over the years, many randomised controlled studies have proven the effectiveness and safety of both focused shock waves and radial pressure waves for the treatment of several musculoskeletal disorders. The following success stories from shock wave users from all over the world show why shock wave therapy is well accepted and popular among athletes today.



**Prof. Dr Karsten Knobloch, FACS,
SportPraxis Hanover, Germany**

»The following case shows why ESWT plays a central role in the treatments I offer: Under-21 European football champion Felix Platte benefited from focused shock wave therapy with the DUOLITH® SD1 »ultra« as part of a multimodal, individualised therapy. During the second leg of the German Bundesliga season, the centre forward at SV Darmstadt 98 experienced Achilles tendon problems close to the heel, which strongly limited his ability to train and play. It was possible to apply focused shock wave therapy without any side effects and risks while he continued to play. As a result, the player was appointed to the Germany national Under-21 football team that won the UEFA European Under-21 Championship in 2017.«



Prof. Dr med. Karsten Knobloch and U-21 Football European champion Felix Platte



**Paul Hobrough, Physio & Therapy
UK, author of »Running free of
injuries«, Corbridge, UK**

»I am an avid user of the MASTERPULS® MP100 »ultra« shock wave device. I use shock waves for the treatment of a number of MSDs, including tendinopathies and lumbar spine. I have treated many UK and Olympic athletes, including Steve Cram, Aly Dixon and Paula Radcliffe. I am very impressed at the increase in speed of recovery of all patients who undergo shock wave therapy as part of their treatment.«



Paul Hobrough during a treatment session with shock waves



**István Csáki, Head of Sport
Sciences division, Ferenc Puskás
Football Academy, Hungary**

»We have a modular DUOLITH® SD1 »ultra« shock wave system with all available modules. We use the combination of focused shock waves and radial pressure waves successfully for the treatment of various disorders in our football players. We also use V-ACTOR® vibration therapy as well



István Csáki uses shock wave therapy to treat a wide range of symptoms suffered by football players.

as the fascia transmitters almost daily. They are very effective, also for »preventive« treatments.«



**Dr Wilbour Kelsick,
Port Moody, BC, Canada**

»The radial shock wave system MASTERPULS® MP50 »ultra« was an essential therapeutic instrument in my sports injury management tool box at the 2017 London World Track and Field Championships. It was used to manage athletes with a variety of soft tissue injuries. I also found the MASTERPULS® MP50 »ultra« beneficial in treating both acute and chronic myofascial trigger points in large and small muscular structures. Its technical features made it extremely easy to use. I also did not find it overly bulky to manoeuvre. Hence travelling with it was very convenient.«



Dr Wilbour Kelsick uses the MASTERPULS® MP50 »ultra«.

At a Glance

- Today, radial pressure waves and focused shock waves are being used in sports medicine around the globe
- The treatment is well accepted and popular among athletes
- Modern devices such as the MASTERPULS® MP50 »ultra« are easy to transport and are thus suitable for mobile use

Interview with Dr med. Martin Ringeisen

Shock Wave Therapy Undergoing a Major Change: More Is Now Possible with Supplementary Technologies

Dr med. Martin Ringeisen



Dr med. Martin Ringeisen is an orthopaedic specialist. Between 1998 and 2008, he worked as an orthopaedist in a joint practice. Since 2009, he has headed a private orthopaedics practice in Augsburg, Germany. He has been general secretary to the German-Speaking International Society for Extracorporeal Shock Wave Therapy e.V. (DIGEST) since 2013, and general secretary to the German-Speaking International Society for Extracorporeal Magnetotransduction Therapy (DIGEMTT) since 2016.

Dr med. Martin Ringeisen works both with combined shock wave therapy and with new, supplementary technologies such as vibration therapy, »Suction Wave Therapy« and extracorporeal magnetotransduction therapy (EMTT®). At the 2017 German Congress of Orthopaedics and Traumatology (DKOU), we spoke to him about the significance of these complementary therapies and about the movement from shock wave therapy alone to »Soft Tissue Engineering« – a complex treatment strategy involving a variety of therapeutic components.

When did you start using combined shock wave therapy, and which type – radial or focused – do you prefer?

I have been using combined shock wave therapy for around ten years now, with focused shock wave therapy being the clear favourite in my day-to-day practice.

How important has shock wave therapy been in your practice so far?

I have been using shock wave therapy since 1998. This therapy form – and the possibilities it opens up – impressed me from the start, so I started to get more involved with the topic. When shock wave therapy became a bigger part of my day-to-day practice, I joined DIGEST. I have been its general secretary since 2013 and worked with my colleagues on the Management Board to develop the specialist training programme.

So, you prefer focused to radial shock wave therapy. Why is that?

If you look at the physics behind shock waves, it quickly becomes clear that only the focused technique results in a true shock wave. Focused shock waves are acoustic waves that are characterised by high pressure amplitudes and an

abrupt increase in pressure as compared with the ambient pressure. By comparison, the radial shock wave is, from a physics point of view, a pressure wave whose pulse duration is 1,000 times longer and the peak pressures are between ten and 100 times lower than for focused shock waves. This very issue has been discussed within DIGEST for years. Regarding the medical use of shock wave therapy: While our association prefers the focused technique, our training modules take both forms of shock wave into account and even recommend the combination option. The use of focused shock waves is more pleasant in some respects for the patient: For example, there is lower noise and much less pain during treatment – particularly for tendinopathy near the enthesis such as radial epicondylopathy or insertional achillodynia.

What are your main patient groups or indications for shock wave therapy?

In my practice, it has become clear that tendinopathies are the main indication. We treat a lot of amateur and professional athletes. Our local football team, FC Augsburg (currently in the Bundesliga, editor's note), for example, recently decided to start using shock wave therapy on my advice.

For about a year now, your practice has been undergoing a change and increasingly supplementing shock wave and pressure wave therapies with new technologies. Can you provide us with more detail?

Regenerative orthopaedics primarily deals with the possibility of provoking a proven biochemical cell reaction via external stimuli. This biological response leads to the release of enzymes and growth factors in the tissues that trigger repair and regeneration mechanisms



Using focused shock waves to treat epicondylitis

within the cell tissue. These effects are possible with a variety of technologies. With regard to the different devices available for shock wave therapy, this means that, when treating tendinopathy, the relevant muscle can also be treated with vibration therapy, for example, to reduce muscle tone. The advantage to vibration therapy (V-ACTOR®) is that large areas can be treated at high frequencies in a time-efficient way. By contrast, »Suction Wave Therapy« works by creating a vacuum, thus releasing tension and relieving pain with myofascial pathologies.

One particularly useful addition to my treatment portfolio within the practice is the ability to offer extracorporeal magnetotransduction therapy (EMTT). Electromagnetic transduction therapy describes the conduction of an electromagnetic impulse through cell structures and their biological response via a change in membrane permeability, the release of regenerative enzymes and the activation of ATP (adenosine triphosphate). As such, the therapy system has a broad range of high-energy electromagnetic impulses of up to 80 mT. An electrical resonant circuit creates an electromagnetic field that oscillates at around 140 μ s with approx. 200 kHz. I prefer to use this device for osseous pathologies, such as bone marrow oedema (primary/secondary), delayed bone healing after a fracture and pseudoarthrosis. The advantage is that osseous pathologies can be treated very easily by applying the treatment band, where the application of focused shock waves re-



Dr Ringeisen primarily uses extracorporeal magnetotransduction therapy for osseous pathologies, such as bone marrow oedema.

quires anaesthetic for the treatment of osseous pathologies. In addition, EMTT complements the classic areas of application of ESWT such as tendinopathy and muscular disorders.

Do you primarily use EMTT to supplement shock waves?

For me, EMTT is much more than a supplement to ESWT. I see it as an independent, useful type of therapy for musculoskeletal disorders. I have used it with particular success in a group of patients with osteitis pubis, who would otherwise have had a much longer road to recovery. This therapy is an absolutely essential part of my work now, particularly in diagnosis and particularly for bone marrow oedema and all other osseous indications.

From your perspective, EMTT is therefore its own type of therapy, but is also the ideal supplement to shock wave therapy. In this context, how do you see the future of the expert associations DIGEST and DIGEMTT, for both of which you are general secretary?

EMTT is the ideal supplement to ESWT and both techniques have great regenerative potential. For that reason, it makes sense to better understand these technologies – not just from the point of view of the user, but also from the point of view of the associations. There is now a clear trend towards what is known as »Soft

Tissue Engineering«. This term unites various therapies that aim to regenerate tissue. With regard to the current level of development, I can say that the idea is to open shock wave-only associations up to supplementary and complementary technologies.

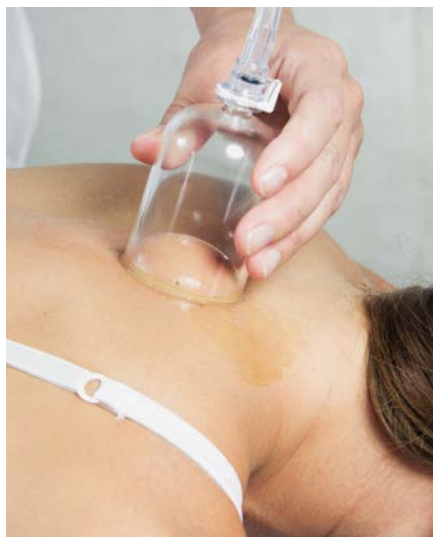
Finally, can you describe a case study from your practice where several of these therapies were used?

I recently treated a 75-year-old patient who presented with severe pain due to plantar fasciitis that he had been suffering for more than two years. MRI diagnostics showed a massive inflammation of the tendon near the enthesis with a partial rupture and established osteitis. According to the patient, several therapies including shoe inserts and injections had all been unsuccessful. For this reason, I initially started with focused shock wave therapy, then supplementing the treatment for the entire plantar area with radial shock waves. After three sessions and gradual weight-bearing exercises adapted for the pain for another four weeks, there was a 70% reduction in symptoms. However, the patient continued to complain of significant residual pain. As a result of the concomitant osteitis, I therefore initiated a programme of treatment with extracorporeal magnetotransduction therapy. After a total of six sessions, the patient is now completely pain-free. This is great example of how this treatment can be used as a supplement to the benefit of the patient.

Thank you very much for taking the time to talk with us.

At a Glance

- Technologies such as vibration therapy, »Suction Wave Therapy« and extracorporeal magnetotransduction therapy (EMTT) are increasingly being used to supplement shock wave therapy
- EMTT expands the treatment portfolio. It is ideal for osseous pathologies, but is also a great supplement to classic ESWT applications
- »Soft Tissue Engineering« is a term that unites various therapies that aim to regenerate tissue



By creating a vacuum, »Suction Wave Therapy« helps to release tension and relieve pain.

Current Trend: Why More and More Physicians Prefer Combined Shock Wave Therapy



»The whole is more than the sum of its parts.« Aristotle

Until just a few years ago, either focused shock waves or radial pressure waves (from a physical point of view, they are radial pressure waves, not shock waves) were used for orthopaedic pain management, depending on the indication. Lately, however, there has been a change: In order to achieve even better therapy results, more and more physicians prefer to combine both technologies for many indications. This trend towards combined shock wave therapy can be observed not only in daily practice but also in case reports and training events. The reasons for this development become clear when we take a closer look at the two therapy options.



»By combining the two technologies, their advantages can be fully exploited.«
Prof. Dr Sergio Russo
 Naples, Italy

Both Methods Have Advantages

Radial pressure waves spread throughout the body in a radial way. They can reach regions with a depth of up to 5 cm, although the energy decreases as the depth increases. As a result, radial pressure waves are especially useful for an exten-

sive therapy of superficial zones. The wide range of transmitters permits both localised and generalised treatments. Muscle chains can be treated functionally in the longitudinal direction. Tissue layers are mobilised, which breaks up adhesions and trigger points. In addition, the shifting of the tissue layers causes a myofascial release – an important prerequisite for fascial therapy.

On the other hand, the therapeutic efficacy of focused shock waves reaches a depth of up to 12.5 cm. Therefore, they are mainly used for the treatment of deeper regions. Focused technology allows for precise, pinpoint treatment (for example of trigger points or tendon insertion) because the energy is applied exactly where it is needed.



»Often, the overall symptoms can only be treated by combining focused shock waves and radial pressure waves.«
Prof. Dr Karsten Knobloch
 Hanover, Germany

Better Patient Care with Combination Therapy

As the short overview shows: Radial pressure waves and focused shock waves have different

advantages and offer specific therapy options. In practice, clinical presentations are often complex (for example, myofascial pain syndrome). In order to achieve long-lasting results, it is not enough to use radial pressure waves or focused shock waves alone. If, for example, the treatment regions are located at different depths, only the combination of both technologies allows for the precise treatment of the overall symptoms and leads to better patient care.



»Combined shock wave therapy offers many treatment options. This maximises the benefit for the patient.«
Prof. Dr Heinz Lohrer
 Wiesbaden, Germany

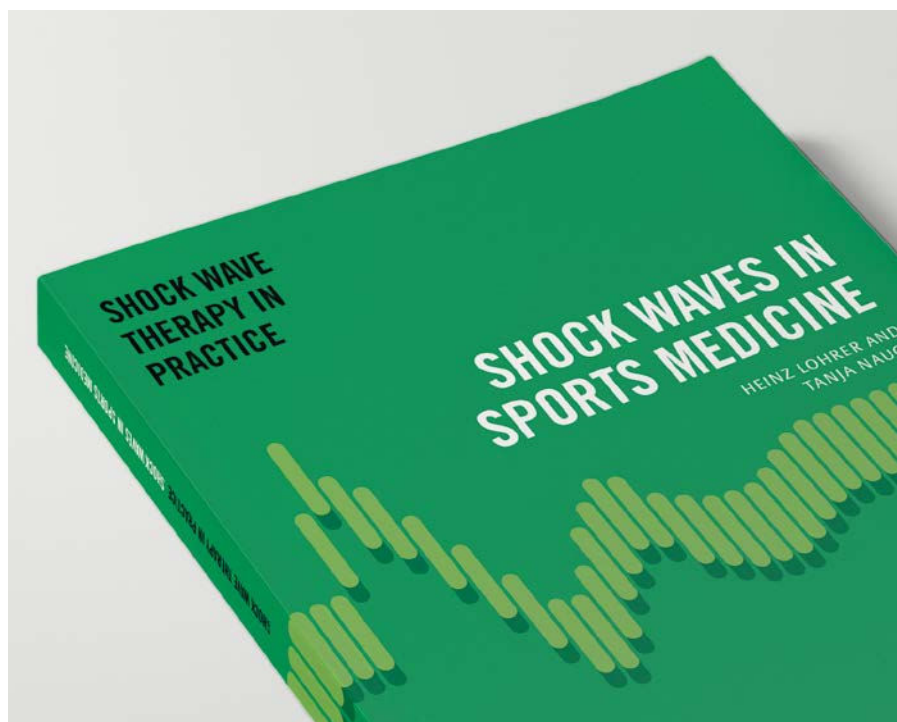
Inclusion of Additional Therapies

Combined shock wave therapy points the way to a more complex and overall treatment strategy for musculoskeletal soft tissue disorders. This strategy not only includes focused shock waves and radial pressures waves, but also complementary therapies such as vibration therapy (V-ACTOR®), »Suction Wave Therapy« (VACU-ACTOR®) or (as of late) extracorporeal magnetotransduction therapy (EMTT®). In this context, the term »Soft Tissue Engineering« – an umbrella term for therapies that focus on tissue regeneration – is frequently discussed at the moment. To find out more about this topic, read our interview with Dr Ringeisen (see pages 4/5).

At a Glance

- More and more physicians are using combined shock wave therapy
- Combination enables the treatment of general symptoms and produces the best long-term therapy results
- Additional technologies can further optimise treatment

Major Plans for 2018: LEVEL10 Publishing New Shock Waves Book and Optimising Website



The latest handbook »Shock Waves in Sports Medicine« is to be published in March 2018.

Since it was founded in 2010, LEVEL10 publishing house from Heilbronn, Germany, has become a major name in the international shock waves community. And it's with good reason: The publishing house has specialised in the field of shock wave therapy and often publishes its titles in several languages. The publishing house is headed by owner Daniela Bamberg, who, right from the start, wanted to publish practical books. In concrete terms, this means that shock wave therapy is not just presented in an in-depth and compact way, but also in one that is easy to understand and graphically appealing. The aim is to give readers useful inspiration and tips for their day-to-day work with patients.

Coming Soon:

»Shock Waves in Sports Medicine«

The latest reference book will appear in March 2018. »Shock Waves in Sports Medicine« is

already the eighth volume in the successful series »Shock Wave Therapy in Practice«. The publication issued by Prof. Dr Heinz Lohrer and Dr Tanja Nauck highlights the broad range of applications for ESWT in sports medicine and provides plenty of information for practical application. In addition to contributions from international experts on the use of focused shock wave therapy and radial pressure wave therapy, the handbook also has an informative



The website www.shockwave-practice.com will be optimised in 2018.

overview of the application of sonography for tendon injuries.

Website to Be Optimised

One undisputed highlight from LEVEL10 publishing house is the international website »Shock wave therapy in practice« (www.shockwave-practice.com). Since its launch in 2014, well over 100 reports, user videos, interviews and treatment recommendations have been posted on individual indications. In addition, the website also hosts a news area and information about events. The website is free to use – all that is required is to sign up first. The next steps are already in the pipeline in order to make the information platform even more appealing. In doing so, the focus is not only on user-friendliness but also expanding the range of topics: In addition to focused shock wave therapy and radial pressure wave therapy, supplementary technologies will feature more prominently in the future. More details will be issued by the publishing house throughout the course of 2018.

LEVEL10 

Information about the publisher:

www.level-books.com

Orders available from:

info@level-books.com

At a Glance

- »Shock Waves in Sports Medicine«
- Editors: Prof. Dr Heinz Lohrer and Dr Tanja Nauck
- Price: €68
- Language: English
- Published in March 2018
- ISBN: 978-3-945106-09-9

30 Years of Humane Technology – Technology for People Celebrate with Us at the Following Exhibitions and Conferences:



April 2018

- **ISMST 2018**
12 – 14 April 2018
Auckland, New Zealand
www.shockwavetherapy.org
- **TIHE – 23rd Tashkent International Healthcare Exhibition**
18 – 20 April 2018
Tashkent, Uzbekistan
<http://tihe.uz/>
- **66th Annual Conference of the Association of Southern German Orthopaedists and Trauma Surgeons**
26 – 28 April 2018
Baden-Baden, Germany
<http://jahrestagung2018.vsou.de>

May 2018

- **ESPRM 2018 – 21st European Congress of Physical and Rehabilitation Medicine**
1 – 6 May 2018
Vilnius, Lithuania
www.esprm2018.com
- **SHOCK WAVE Moscow**
18 May 2018
Moscow, Russia
- **SHOCK WAVE Athens**
19 – 20 May 2018
Athens, Greece
- **AFRICA HEALTH**
29 – 31 May 2018
Johannesburg, South Africa
www.africahealthexhibition.com

June 2018

- **SHOCK WAVE Brussels**
09 June 2018
Brussels, Belgium
- **2nd Congress of the KAMST**
17 June 2018
Seoul, South Korea
- **3rd Congress of the JOSST**
24 June 2018
Tokyo, Japan
<http://josst.org/en.html>

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