

STORZ MEDICAL in Professional Sports

STORZ MEDICAL publications 2007 – 2020



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Sources: STORZ MEDICAL publications 2007-2020

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No.	Publication	Sport/Event/Team	Title/Topic	Shock Wave
1	Shock Waves Today 01/2020, p. 6	Use of Radial Shock Wave Device MP100 in Professional Sports in Japan	"Radial Shock Wave Therapy Conquers Professional Sports in Japan" / Interview with chief athletic trainer of Júbilo IWATA / Interview with head trainer at ALVARK TOKYO	Radial
2	Shock Waves Today 01/2020, p. 5	Use of ESWT and EMTT® devices in professional sport, First MAGNETOLITH® used at an international sporting event	"STORZ MEDICAL Supports Champions" / Team doctors put their trust in STORZ MEDICAL systems / first MAGNETOLITH used at the World Championship of the International Bobsleigh and Skeleton Federation (IBSF) / team doctor treated Germany's five best female speed athletes / successful deployment of radial shock wave therapy and vibration therapy, in particular to treat their muscular complaints, local tendinoses and joint pains	EMTT Combined
3	Shock Waves Today 02/2019, p. 6	ESWT research at SEMLI	"DUOLITH® SD1 »ultra« Serves the Sport, Exercise Medicine and Lifestyle Institute at the University of Pretoria" / Prof SchwelInus is a renowned physician in the field of sports and exercise medicine	Combined
4	Shock Waves Today 02/2019, p. 3	Introduction of the MAGNETOLITH® and EMTT® Therapy	"The New MAGNETOLITH® Extracorporeal Magnetotransduction Therapy (EMTT®) from STORZ MEDICAL" / Fields of application: chronic diseases of the musculoskeletal system / Non-invasive and outpatient/ seful supplement to shock wave therapy Flexible holding arm for a fatigue-free treatment	EMTT
5	Shock Waves Today 01/2019, p. 3	Successful Treatment with Radial Pressure Waves	"Pain Free Thanks to Radial Pressure Waves: Adventurer Ian Couch Ready for New Expeditions" / British adventurer Ian Couch suffered from elbow pain / Severe Restriction in Training due to Elbow Pain/ Use of Radial Pressure Waves for successful treatment / Pain-free after 3 x radial pressure wave therapy; strength and range of motion significantly improved	Radial
6	Shock Waves Today 02/2018, p.3	Studies prove the success, efficacy and safety of shock wave therapy	"Shock Wave Therapy in Sports Medicine" /Use of ESWT in sports since 1995 /Device technology has undergone huge development to date /Numerous studies prove the efficacy of this kind of therapy in sports medicine /You can find more information in the book »Shock Waves in Sports Medicine«, Level10 Publishing House, 2018, and also in the excerpts on page 5.	Radial
7	Shock Waves Today 02/2018, p. 4,5	Part 2 of the success stories with extracorporeal shockwave therapy (ESWT) in sports medicine	"Shock Waves in Sports Medicine: Success Stories from Around the World – Part 2" /Radial pressure waves and focused shock waves are not only used to treat traditional	Combined

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			indications, but also as a complementary therapy for myofascial pain syndrome /ESWT is also used for acute sports injuries /From the point of view of some doctors, professional athletes benefit particularly as healing processes can be accelerated	
8	Shock Waves Today 01/2018, p. 2	Workshop with stadium atmosphere in Italy	“The Prestigious Italian Clinic J Medical Puts 1st Trust in Shock Waves from STORZ MEDICAL” /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	Combined
9	Shock Waves Today 01/2018, p. 3	Description of Shock Wave therapy in sports medicine around the world First part	“Shock Waves in Sports Medicine: Success Stories from Around the World” /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	Combined
10	Shock Waves Today 01/2018, p.7	New literature: “Shock Waves in Sports Medicine”	“Major Plans for 2018: LEVEL10 Publishing New Shock Waves Book and Optimising Website” /»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	Combined
11	Shock Waves Today 01/2017, p. 4,5	Shock Wave Acupuncture Interview with Dr. med. Heinrich Everke, Constance, Germany	“Shock Wave Acupuncture: Benefits, Treatment Successes, Cost Efficiency” /Perfect complement to traditional acupuncture /Shock wave acupuncture extends treatment options /Painless therapy saves time /Very well accepted by patients /Word of mouth is the best advertising for this type of therapy	Focused
12	STORZ MEDICAL Magazine 2/2016, p. 3	Ukrainian gymnast Ihor Radivilov, French rugby player Dan Carter, national team of New Zealand	“MASTERPULS® Line: Using Radial Shock Waves for Professional Athletes” / Radial shock waves are used to treat professional athletes from a range of disciplines / With MASTERPULS® systems, tendinopathies are treated	Radial
13	Shock Waves Today 3/2016, p. 4	Study conducted at University of Salzburg	“Pre-release of Study Findings: Extracorporeal Shock Wave Therapy (ESWT) Can Heal Muscle Injuries Faster” / Study shows that ESWT accelerates the regeneration of skeletal muscle tissue / DUOLITH® SD1 used in study	Focused

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14	Shock Waves Today 3/2016, p. 4	Case study of treatment by female professional athlete specialized in 400-metre-hurdles	“Case Study: Acute Calf Muscle Injury in a Professional Athlete” / Female professional athlete injured her trial leg while practising the take-off into the hurdles / Combination of radial and focused shock waves / Clear shortening of »return to sport«	Combined
15	Shock Waves Today 2/2016, p. 2/3	General interview with Dr O. Miltner. Vice-President Germany of the Society for Orthopaedic Traumatologic Sports Medicine (GOTS)	“Interview with Dr Oliver Miltner, Berlin: Shock Wave Therapy in the Heart of Germany's Capital” / Combined shock wave therapy with V-ACTOR® opens up a wide range of treatment options / Shock wave therapy is an important component for treating (top-level) athletes / Word-of-mouth is the most effective marketing tool for this treatment form	Combined
16	Shock Waves Today 2/2016, p. 3	Case study for radial shock wave treatment at a professional athlete	“Case Study: Successful Radial ESWT for Functional Muscle Injuries” / Type Ib delayed onset muscle soreness / Treatment with radial shock waves	Radial
17	Shock Waves Today 1/2016, p. 4	Establishing a patient-tailored treatment concept for a runner	“Patient-tailored Treatment Concepts” / Symptomatic treatments based on the »ouch principle« are often unsuccessful / A detailed history and precise diagnostic testing are important prerequisites / Multimodal treatment approach for treating the causes and symptoms	
18	Shock Waves Today 4/2015, p. 2/3	General interview about the use of shock wave therapy in competitive sports	“Interview with Dr Michael Lehnert: Radial Shock Wave Therapy in Sports Medicine and High-level Sport” / Advantages of radial shock wave therapy in comparison to other methods / Successful treatment of professional female football players of German football club 1. FFC Turbine Potsdam	Radial
19	STORZ MEDICAL Magazine 2/2015, p. 3	1. FFC Turbine Potsdam, VfL Wolfsburg (football, women)	“One Year After Market Launch – MASTERPULS® »ultra« Successfully Started” / Positive comment by Dr Michael Lehnert about the treatment of players of German football club 1. FFC Turbine Potsdam with MASTERPULS® MP100 »ultra« / In the future, the MASTERPULS® MP100 »ultra« will also be used for the treatment of women’s team of German football club VfL Wolfsburg	Radial
20	STORZ MEDICAL Magazine 2/2015, p. 5	General article about the renowned Thurgau Hospital in Münsterlingen, Switzerland, which relies on STORZ MEDICAL devices	“Reference Clinic in the Neighbourhood – Spital Thurgau in Münsterlingen, Switzerland” / Hospital is a leading healthcare facility in Switzerland, has strong partnership with STORZ MEDICAL	Combined

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			<p>/ Orthopaedics department has relied on the DUOLITH® SD1 for pain therapy since 2012</p> <p>/ Physical therapy department uses a MASTERPULS® MP100</p> <p>/ STORZ MEDICAL shock wave systems also used in the hospital's new private practice (»Sportpraxis am See«)</p> <p>/ Together with the orthopaedic department of the hospital, the »Sportpraxis am See« was certified as a »Sport Medical Base approved by Swiss Olympic«</p>	
21	Shock Waves Today 2/2014, p. 2/3	General interview about the use of shock wave therapy in competitive sports	<p>“Interview with Prof Dr Heinz Lohrer: Extracorporeal Shock Wave Therapy (ESWT) in Competitive Sports”</p> <p>/ Advantages of ESWT vs. other methods</p> <p>/ Advantages of combined shock wave devices (focused/radial)</p> <p>/ Future of shock wave therapy in professional sports</p>	Combined
22	STORZ MEDICAL Magazine 3/2014, p. 5	General article about ESWT treatment of football injuries	<p>“Successfully Treating Football Injuries with Shock Waves”</p> <p>/ Classic football injuries and their treatment (and diagnosis) with ESWT</p>	Combined
23	STORZ MEDICAL Magazine 3/2014, p. 4	Benfica Lissabon (football)	<p>“Benfica have chosen the DUOLITH® SD1 »ultra«”</p> <p>/ Portuguese football club Benfica Lissabon trusts STORZ MEDICAL devices</p>	Combined
24	STORZ MEDICAL Magazine 3/2014, p. 4	General article, naming all football clubs and national teams that rely on STORZ MEDICAL devices	<p>“ESWT in the History of Professional Football”</p> <p>/ Article on the occasion of the Football World Cup 2014 in Brazil</p> <p>/ Clubs and national teams with STORZ MEDICAL devices</p>	Combined
25	ShockNews 1/2014, p. 3	Villarreal CF (football)	<p>“DUOLITH® SD1 »ultra« Succeeds at Spanish Premier League Club Villarreal CF”</p> <p>/ Villarreal CF relies on STORZ MEDICAL devices for the treatment of its players</p> <p>/ Villarreal CF is the first Spanish football club that uses the DUOLITH® SD1 »ultra«</p>	Combined
26	ShockNews 1/2014, p. 3	General article about the treatment of professional athletes	<p>“Swiss Olympic: Using Shock Waves for High-performance and Talented Young Athletes”</p> <p>/ Successful treatment of athletes with shock waves at the Thurgau Hospital in Münsterlingen, Switzerland</p>	Combined
27	ShockNews 1/2014, p. 2	2014 Winter Olympics in Sochi/Russia	<p>“STORZ MEDICAL at the Sochi Olympics”</p> <p>/ Successful treatment of German bobsleigh and luge teams</p> <p>/ Successful treatment of Russian Ice Hockey stars</p> <p>/ South Korean figure skating star Kim Yuna (Olympic and world champion) uses shock</p>	Radial and combined

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			wave therapy while preparing for Sochi 2014	
28	ShockNews 2/2013, p. 8	Cancan Ren, triple women's boxing world champion from China	"The Women's Boxing World Champion Succeeds Again" / Cancan Ren, triple women's boxing world champion from China, is fully convinced of radial shock wave treatment with the MASTERPULS®	Radial
29	ShockNews 2/2013, p. 8	Taekwondo World Championship in Puebla, Mexico	"Shock Waves for World Champions" / Successful treatment of German Taekwondo fighter Tahir Gülec (first German world champion in 18 years) / Typical Taekwondo injuries	Combined
30	ShockNews 1/2013, p. 8	Bayern Munich (football); Figure skating World Championship 2013 in London/Canada; Bobsleigh World Championship 2013 in St. Moritz/Switzerland	"DUOLITH® SD1 »ultra« in High-performance Sports" / Importance of ESWT in professional sports, using examples from three sports / Successful treatment of players of German football club Bayern Munich / Successful treatment of South Korean figure skating star Kim Yuna during World Championship 2013 (gold medal) / Successful treatment of German and Swiss athletes prior to Bobsleigh World Championship 2013	Combined
31	ShockNews 2/2012, p. 6	2012 Summer Olympics in London/England	"Triumphs at the Summer Olympics thanks to STORZ MEDICAL shock wave systems" / Successful treatment of various Chinese, German, Canadian, Korean and Swiss teams	Combined
32	ShockNews 1/2012, p. 9	Trampoline World Championship 2011 in Birmingham/England	"Gold at Trampoline World Championship 2011 with STORZ MEDICAL shock waves" / Successful treatment of German national team	Combined
33	ShockNews 1/2012, p. 9	Swiss rhythmic gymnastics national team	"Swiss rhythmic gymnastics national team: Success with radial shock waves" / Successful treatment of athletes of Swiss rhythmic gymnastics national team / Reference to successful World Championship 2011 (there: successful treatment of pain with RSWT)	Radial
34	ShockNews 1/2012, p. 8	Borussia Dortmund (football)	"BVB - Borussia Dortmund relies on DUOLITH® and MASTERPULS® shock wave therapy for its professional football team" / When it comes to the treatment of its players, the German football club relies on STORZ MEDICAL devices	Combined
35	ShockNews 3/2011, p. 5	Summer Universiade 2011 in Shenzhen/China	"MASTERPULS® MP100 »elite edition« »in action«" / Successful treatment of German and Chinese athletes with MASTERPULS® MP100 during the Summer Universiade 2011 in Shenzhen/China (14 medals for the German team)	Radial

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36	ShockNews 2/2011, p. 6	BNP Paribas Zurich Open 2011 (tennis)	“»Zurich open« – Schulthess clinic and the tennis world count on DUOLITH® SD1” / Successful treatment of muscle and tendon problems of legendary tennis players	Combined
37	ShockNews 1/2011, p. 6	European Trampoline Championships 2010 in Varna/Bulgaria	“German trampoline national team relies on ESWT” / Successful treatment of German trampoline national team / Focus on typical problems of the athletes	Combined
38	ShockNews 3/2010, p. 5	Bayern Munich (football)	“FC Bayern Munich gets back into the game quickly” / When it comes to the treatment of its players, the German football club relies on STORZ MEDICAL devices	Combined
39	ShockNews 3/2010, p. 4	Six Metre European Championship (6mJl) in Brunnen/Switzerland (sailing)	“Sailing close to the wind with MASTERPULS®” / Successful treatment of typical problems like tennis elbow of the Yacht Adelheid team (sponsored by STORZ MEDICAL)	Radial
40	ShockNews 2/2010, p. 4	2010 Winter Olympics in Vancouver/Canada	“Review Vancouver Olympics” / Review with focus on typical symptoms that were treated during the Winter Olympics	Combined
41	ShockNews 2/2010, p. 4	BNP Paribas Zurich Open 2010 (tennis)	“Game, Set, Match, MASTERPULS®!” / Successful treatment of players with chronic and acute symptoms during the tournament	Radial
42	ShockNews 1/2010, p. 4	2010 Winter Olympics in Vancouver/Canada	“Storz Medical awarded as »Friends of the Olympic Games«” / Successful treatment of Canadian Ice Hockey team (gold medal) / Successful treatment of Canadian bobsleigh team / Successful treatment of South Korean figure skating star Kim Yuna (gold medal) / Successful treatment of Chinese short track team (4 gold medals)	Combined
43	ShockNews 2/2009, p. 4	Dakar Rally 2009 (racing), Hardy Racing Team	“Across the finish line with the help of shock waves” / Fast and effective treatment of Hardy Racing Team drivers during the “world’s toughest off-road race” / The most frequent symptoms were shoulder or neck pain as well as elbow pain	Radial

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1	Shock Waves Today 02/2020	Use of Radial Shock Wave Device MP100 in Professional Sports in Japan	“Radial Shock Wave Therapy Conquers Professional Sports in Japan” / Interview with chief athletic trainer of Júbilo IWATA / Interview with head trainer at ALVARK TOKYO	Radial
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Radial Shock Wave Therapy Conquers Professional Sports in Japan



Interview with Sasaki Tatsuya



Sasaki Tatsuya treating achilles tendinitis with the MASTERPULS® MP100-ultra.

Sporting events across the globe have been suspended due to COVID-19 and the Olympic Games in Tokyo have been moved to next year. To shorten the waiting time a little, we report in this issue about two professional sports teams from the hosting country. Read on for an insight into the world of professional sports in Japan as seen through the eyes of three trainers: one from basketball team Alvark Tokyo and two from football team Júbilo IWATA. All of them are licensed judo therapists, a qualification based on a special Japanese osteopathy tradition known as «hone-tsugik» («bone-setter»).

Interview with Sasaki Tatsuya, chief athletic trainer of Júbilo IWATA

What brought radial shock wave therapy to Júbilo IWATA?

One of our Korean teammates mentioned that focused shock wave therapy (F-SW) is a very well-known form of treatment in his country and that it has a good reputation. We knew that some hospitals use F-SW devices here in Japan, mainly clinically. Moreover, some of our players have already been in touch with shock wave therapy. We got the opportunity to try the radial

MASTERPULS® MP100 «ultra» device and did a comprehensive evaluation. Ultimately, we decided to make the purchase based on usability, effectiveness and the feedback from our players. The MASTERPULS® MP100 «ultra» is easy to operate and manage in our team.

Where do you use the MASTERPULS® MP100-ultra?

The medical room where the team doctor, physiotherapists and athletic trainers work is located in our clubhouse beside the team ground. We look after the football players there and provide them with treatment as necessary, mainly before and after training sessions. As the MASTERPULS® MP100 «ultra» is light enough to carry and easy to use, we can even take it with us when we go on trips or to our training camps.

How do you perform treatment with MASTERPULS® MP100-ultra?

The MASTERPULS® MP100 «ultra» is often used in treatments whose aim is to reduce pain, particularly when dealing with the types of tendinitis that are common in athletes, such as plantar fasciitis, achilles tendinitis and patellar tendinitis. In my opinion, the MASTERPULS® MP100

«ultra» is totally different from other physiotherapy devices in terms of pain relief. It is really useful for treating cases in which other devices do not deliver the results we need, and it has widened the range of our treatment options. We often use the PERI-ACTOR® transmitters to treat the iliotibial band, tensor fasciae latae muscle and gluteus medius. From my point of view I would say that the advantage of the PERI-ACTOR® and SPINE-ACTOR® transmitters is to loosen a muscle when stretching is not so effective.

Thank you for the interview.

Júbilo IWATA

Founded in 1972 as the company football team at Yamaha Motor Co., Ltd., Júbilo IWATA is now one of the most successful teams in the Japanese Professional Football League and international club football (where it is represented in the AFC Champions League). Many of its players have also been called up to Japan's national team.





Ikarashi Kiyoshi treating an ALVARK TOKYO player with radial shock waves

Interview with Arao Hirofumi, head trainer, and Ikarashi Kiyoshi, trainer at ALVARK TOKYO

Where do you mainly use radial shock wave therapy at ALVARK TOKYO?

As we have many injury cases especially in lower extremity in basketball, the main subject was the tightness of leg muscles such as lower leg, thigh and plantar muscles. Moreover, it is good for myofascial low back pain. We are satisfied not only with its effect just after the treatment, but also with the duration of its effect. It seems as long as the effect of acupuncture or longer. No one in our team knew about radial shock wave therapy until the installation of the MASTERPULS® MP100 »ultra«. But now, especially the players with muscle contracture who prefer strong treatment have a tendency to request this treatment.

What options does the MASTERPULS® MP100 »ultra« offer compared to other physiotherapy devices?

We think MASTERPULS® MP100 »ultra« can be used for daily care to prevent our basketball players from injuries and for improving their performance, not to mention the treatment of tendinopathies. The huge difference from other therapies is that we can feel the improvement just after the treatment. Both, we as the practitioners and our players can feel the relaxation of muscles in the cases with muscle contracture as soon as applying radial shock wave. We can achieve homogenous results no matter if the practitioner changes. The radial handpiece allows us to control the treatment parameters such as energy level and frequency without taking eyes off the treatment area, which is a huge advantage. Combining MASTERPULS® MP100 »ultra« with other physiotherapy devices



ALVARK TOKYO players in action

ALVARK TOKYO

Founded in 1948 as the Toyota company basketball club, the team currently plays in the B.League, the Japanese professional basketball league. Known for its powerful performances, the team has won two B.League titles in a row.



or manual therapies brings even better results by complementing each.

What protocol do you apply?

We have recently begun varying the protocol that we apply before and after training sessions, even when it comes to treating the same parts of the body. For example, we set the energy level lower before training just to relieve tension in the muscles, and then we raise the energy level after training. We also apply treatment with a lower energy level and fewer pulses as games are approaching.

Which transmitters do you use at ALVARK TOKYO?

We only used the R15 transmitter at first, but now we've got to grips with a whole range – including one that offers deeper penetration when treating deep tissue in hamstrings, for example. For chronic back pain, we use both radial and SPINE-ACTOR® transmitters. We have seen improvements in the ROM (range of motion) of both forward and backward bending after treatment, and the players have been able to feel this too.

Thank you for the interview.



Arao Hirofumi, head trainer, and Ikarashi Kiyoshi, trainer at ALVARK TOKYO

2	Shock Waves Today 01/2020, p. 5	Use of ESWT and EMTT® devices in professional sport First MAGNETOLITH® used at an international sporting event	“STORZ MEDICAL Supports Champions” / Team doctors put their trust in STORZ MEDICAL systems / first MAGNETOLITH used at the World Championship of the International Bobsleigh and Skeleton Federation (IBSF) / team doctor treated Germany's five best female speed athletes / successful deployment of radial shock wave therapy and vibration therapy, in particular to treat their muscular complaints, local tendinoses and joint pains	EMTT Combined I
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STORZ MEDICAL Supports Champions



Dr. Andreas Heinzinger at the IBSF World Championships 2020 in Altenberg, Germany

After the past few unprecedented weeks, we are already looking forward to the return of sport and the new heights set to be achieved. Until then, we are contenting ourselves with a look back at the recent success stories from the 2019/20 winter season. During this time, sporting events worldwide saw both ESWT (extracorporeal shock wave therapy) and EMTT* (extracorporeal mag-

netotransduction therapy) used to help athletes achieve top levels of performance.

World Championships of the International Bobsleigh and Skeleton Federation (IBSF)
 18 February to 1 March 2020
 in Altenberg, Germany

Germany was represented by several teams at the competition. Team doctor Andreas Heinzinger, based in Berlin, looked after athletes including members of the «Bob 1k» four-man bob team who took home the bronze medal.

Using the MASTERPULS® MP100 «ultra» and the MAGNETOLITH®, Dr Heinzinger was able to intensively treat the athletes with two forms of therapy from STORZ MEDICAL at the same time. The MAGNETOLITH® – which had only recently been launched on the market – was immediately put to use at this international competition. The doctor and his team treated the athletes with EMTT* for chronic problems to assist the healing process, for example in the case of pseudarthrosis

of the foot (fatigue fracture) and problems with the patellar tip, hip and shoulder.

Dr Heinzinger used radial shock wave therapy primarily for musculotendinous stress problems. Three treatments per day were the norm. «The advantage of this form of therapy during a competition is above all the fact that it is available quickly and treatment times are short,» explained Dr Heinzinger enthusiastically after the World Championships.

Shock wave therapy in action at the German Ski Association (DSV)

Prof. Dr Hans Latta, from Bayreuth, has been the team doctor for the German alpine speed skiing team since 2001, working in particular with the Women's World Cup team. He also looks after Germany's national ski cross team.

At the end of January/start of February 2020, Prof. Dr Latta accompanied the German women's alpine skiing team to the World Cup races in Bansko, Bulgaria and Rosa Khutor/Sochi, Russia, bringing with him a DUOLITH® SD1 T-TOP «ultra» and a MASTERPULS® MP100 «ultra». During training and the World Cup super-G and downhill races, the team doctor treated Germany's five best female speed athletes. He was able to successfully deploy radial shock wave therapy and vibration therapy, in particular to treat their muscular complaints, local tendinoses and joint pains.

«Our racers were extremely impressed by shock wave therapy. We are therefore planning to use it again for the 2020/21 season,» said Prof. Dr Latta, expressing his delight with the results.



STORZ MEDICAL employee Thomas Stierle (centre) handing over the new shock wave devices to Prof. Dr Latta (left) and his colleague Martina Weiss

At a Glance

- Team doctors put their trust in STORZ MEDICAL systems
- Use of ESWT and EMTT* devices in professional sport
- First MAGNETOLITH* used at an international sporting event

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3	Shock Waves Today 02/2019, p. 6	ESWT research at SEMLI	«DUOLITH® SD1 »ultra« Serves the Sport, Exercise Medicine and Lifestyle Institute at the University of Pretoria» / Prof Schwellnus is a renowned physician in the field of sports and exercise medicine	Combined
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DUOLITH® SD1 »ultra« Serves the Sport, Exercise Medicine and Lifestyle Institute at the University of Pretoria



Sport, Exercise Medicine and Lifestyle Institute (SEMLI) at the University of Pretoria, South Africa

The University of Pretoria has identified sport, exercise medicine and lifestyle interventions for chronic disease as one of its four main strategic niche areas for research activity in the next decade. To realise this strategic goal the Sport, Exercise Medicine and Lifestyle Institute (SEMLI) was established in June 2015, under the directorship of Prof Martin Schwellnus.

The vision of the SEMLI is to be an international leader in scientific, translational research that promotes health and well-being in the population through lifestyle interventions, reducing exercise related injuries and medical complications, and promoting sporting excellence.

Fundamental to the success of the institute is its unique multi-disciplinary approach to research and scientific/clinical services, allowing constant interaction and collaboration between experts,



Prof Schwellnus is a renowned physician in the field of sports and exercise medicine and director of SEMLI

and fostering an invaluable culture of research informing best clinical practice, and vice versa.

Prof Schwellnus is a renowned physician in the field of sports and exercise medicine and is credited with the establishment of the first postgraduate training programme in Sports Medicine in South Africa, which was established at the University of Cape Town in 1989. Over the past 25 years, Prof Schwellnus has had a very active career in clinical service, teaching and research, for which he received international recognition. He is a former president of the South African Sports Medicine Association (SASMA), a former vice-president of the International Sports Medicine Federation (FIMS), and has served in the international Olympic Committee (IOC) Medical and Science Group for 14 years. For the past six years, Prof Schwellnus also served as the director of one of only four IOC-accredited international research centres. He has published more than 100 peer-reviewed articles in accredited international scientific medical journals and has supervised numerous master's and PhD students. He is a dedicated clinician who provides clinical care to athletes and patients with chronic lifestyle-related diseases through a comprehensive lifestyle intervention programme.

»Many randomized controlled studies have demonstrated the effectiveness and safety of both focused and radial Extracorporeal Shock Wave Therapy (ESWT), especially for the treat-

ment of musculoskeletal pathologies in sports medicine.«, explains Prof Schwellnus. »Today, ESWT with the DUOLITH® SD1 »ultra« is a well-established research and treatment option in our institute.«

To strengthen and support the University of Pretoria's commitment to the ESWT development it was decided to focus on

- Providing an environment where the value of further research on ESWT can support young sportsmen and women in an integrated and holistic manner.
- Providing facilities and expertise that will enhance the ESWT development and performance of sports talent on provincial, national and international levels.
- Leading and mentoring similar research initiatives/institutes countrywide and for the continent.
- Protecting and securing sustainable long term treatment results, based on sustained research.
- Conducting further ESWT research.
- Educating students and sports professionals in the potential use of ESWT.
- Supporting international ESWT workshop series

At a Glance

- Prof Schwellnus is a renowned physician in the field of sports and exercise medicine
- ESWT research at SEMLI

4	Shock Waves Today 02/2019, p. 3	Introduction of the MAGNETOLITH® and EMTT® Therapy	“The New MAGNETOLITH® Extracorporeal Magnetotransduction Therapy (EMTT®) from STORZ MEDICAL® / Fields of application: chronic diseases of the musculoskeletal system / Non- invasive and outpatient/ seful supplement to shock wave therapy Flexible holding arm for a fatigue-free treatment	EMTT
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The New **MAGNETOLITH®** Extracorporeal Magnetotransduction Therapy (**EMTT®**) from **STORZ MEDICAL**



Fatigue-free EMTT® treatment of the shoulder thanks to flexible holding arm

Extracorporeal Magnetotransduction Therapy (EMTT®) with **MAGNETOLITH®** is a non-invasive treatment solution that opens up new possibilities in regeneration and rehabilitation. The areas of application include chronic diseases of the musculoskeletal system such as lower back pain, tendinopathies of the rotator cuff or Achilles tendon. Due to its properties, EMTT® is also ideally suited as a supplement to extracorporeal shock wave therapy (ESWT), as is shown in current study data³.

Method

In the course of EMTT®, painful areas of the body are treated with high-energy magnetic pulses,



EMTT® treatment of the elbow

the field strength of which lies within the therapeutically effective range – of 10 mT (millitesla) and upward. The generated energy is transferred via an applicator to the body areas to be treated. With this pulse intensity it is possible to achieve a therapeutic effect in the cell. The individual pulses penetrate the tissue so that even deeper tissue layers can be reached. There is no temperature increase in the tissue, due to the short duration of the individual pulses.

Effect on the cell

EMTT® treatment can cause a positive cell modulation. Every cell undergoes chemical reactions that serve to generate energy. The prerequisite

for this is membrane permeability. A stable cell membrane ensures permeability for vital substances. A pathological change leads to dysfunction – a metabolic disorder that can ultimately lead to disease. The chemical reactions of the cell potential can be positively influenced by EMTT®. The sodium-potassium pump can be reactivated and physiological cell processes can be normalized.

EMTT® in everyday practice

The treatment requires little effort, is non-invasive and practically free from side effects. The treatment is comfortable and uncomplicated for patients. One session lasts between 5 and 20 minutes; depending on the indication, 6 to 8 sessions are required. The applicator is positioned on the region of the body to be treated without the need to remove clothing. The user can also employ the practical holding arm for fatigue-free treatment. The pulse intensity is adjusted depending on the clinical picture. After the first treatment by the doctor, further treatments can be carried out by qualified personnel.

Summary

EMTT® from **STORZ MEDICAL** expands the treatment portfolio of orthopaedic practices. Due to its properties, it is particularly suitable as a supplement to extracorporeal shock wave therapy (ESWT).



Treatment with the **MAGNETOLITH®**

At a Glance

- Fields of application: chronic diseases of the musculoskeletal system
- Non-invasive and outpatient
- Useful supplement to shock wave therapy
- Flexible holding arm for a fatigue-free treatment

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

5	Shock Waves Today 01/2019, p. 3	Successful Treatment with Radial Pressure Waves	“Pain-Free Thanks to Radial Pressure Waves: Adventurer Ian Couch Ready for New Expeditions” / British adventurer Ian Couch suffered from elbow pain / Severe Restriction in Training due to Elbow Pain/ Use of Radial Pressure Waves for successful treatment / Pain-free after 3 x radial pressure wave therapy; strength and range of motion significantly improved	Radial
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Pain-free Thanks to Radial Pressure Waves: Adventurer Ian Couch Ready for New Expeditions

Ian Couch is an experienced British adventurer, ocean rower and endurance athlete. His previous successes are more than impressive: He rowed across the Atlantic twice and is the only person ever to have crossed the Indian Ocean in a rowing boat. Over the years he has set a total of six world records in rowing. What's more, he has broken a British record for the fastest Greenland crossing on skis, he's run through the Gobi Desert and the Namib Desert and has mastered numerous other ultra running events.

Severe Restriction In Training due to Elbow Pain

Even coming up to 50, Couch still participates in endurance events or even leads them. For his body, these feats of high performance are a huge strain and take their toll. In 2018, Couch suffered from elbow pain (epicondylitis humeri medialis) due to overuse, which worsened further while training for a rowing challenge from San Francisco to Hawaii. In the end the pain was so intense that he couldn't go on. The arm was immobilised and Couch took medication, but this was ineffective and brought about no improvement.

Successful Treatment with Radial Pressure Waves

As a result of the persistent complaints, Couch went to the Abbeyfields Clinic (Bury St Edmunds, Suffolk, England) for treatment from the ex-



As an endurance athlete, Ian Couch puts his body under tremendous strain, here rowing in the Indian Ocean



Adventurer Ian Couch in the Gobi Desert

perienced osteopath James Woledge. He had already successfully treated Couch's running and martial arts injuries several times in the past. In order to reduce or eliminate Couch's pain, Woledge treated the epicondylitis humeri medialis with radial pressure waves, which (although incorrect in physics terms) are often referred to as radial shock waves. A total of three treatments were performed (device: MASTERPULS® MP100; R15 transmitter; pulses: 2500; frequency: 12 Hz; pressure: 1.6 – 2.6 bar).



Radial treatment of epicondylitis humeri medialis

Prior to treatment, Couch's elbows hurt at every touch and his movements were very limited. The very first pressure wave session led to immediate improvement and the pain diminished. After the third treatment, touch no longer caused any pain. Couch after the therapy: »The strength and range of motion of my arm are better than they have been for years and are around 95 percent of my previous best values, and added: »I can unreservedly recommend pressure wave therapy. It's by far the best treatment I've ever had.

At a Glance

- Record rower and extreme athlete Ian Couch
- Epicondylitis humeri medialis due to excessive strain during training
- Pain-free after 3 x radial pressure wave therapy; strength and range of motion significantly improved
- »It [pressure wave therapy] is by far the best treatment I've ever had.

6	Shock Waves Today 02/2018, p.3	Studies prove the success, efficacy and safety of shock wave therapy	“Shock Wave Therapy in Sports Medicine” /Use of ESWT in sports since 1995 /Device technology has undergone huge development to date /Numerous studies prove the efficacy of this kind of therapy in sports medicine /You can find more information in the book »Shock Waves in Sports Medicine«, Level10 Publishing House, 2018, and also in the excerpts on page 5.	Radial
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Shock Wave Therapy in Sports Medicine



Radial treatment of medial tibial stress syndrome with the DUOLITH® SD1 »ultra«

Extracorporeal shock wave therapy (ESWT) has been used specifically for treatment of musculoskeletal disorders since the mid 1990s. Meanwhile, it has become established as an important treatment method in sports orthopaedics.

The first portable focused shock wave device, MINILITH® SL1, was already used in 1996 at



Focused shock wave treatment of an athlete, Olympic Games 1996 in Atlanta

the Olympic Games in Atlanta for conservative treatment of German athletes. Whereas osseous indications (delayed bone fracture healing, pseudarthrosis) were at the heart of focused shock wave therapy at the start, a whole range of other indications in sports orthopaedics gradually opened up (e.g. (insertional) tendinopathy, stress fractures, myofascial pain syndromes, and Osgood-Schlatter disease, calcaneal apophysitis).

Device technology has also developed greatly since then: focused shock wave therapy is combined with radial pressure wave therapy and complemented practically with add-on treatment options using vibration technology. Handling has also become more practicable: the devices are more compact, convenient and above all also easier to use. Thanks to numerous radial transmitters, a variety of tissues can be addressed optimally.



Prof. Dr. Heinz Lohrer and Dr. Tanja Nauck present the book »Shock Waves in Sports Medicine« from the »Shock Wave Therapy in Practice« book series at the 2018 VSOU congress in Baden-Baden, Germany.

Numerous studies published over the last few decades have proven the safety and efficacy of shock wave therapy for a variety of musculoskeletal disorders, also in athletes.

Prof. Dr. Heinz Lohrer
Dr. Tanja Nauck


At a Glance

- Use of ESWT in sports medicine since 1995
- Device technology has undergone huge development to date.
- Numerous studies prove the efficacy of this kind of therapy in sports medicine.
- You can find more information in the book »Shock Waves in Sports Medicine«, Level10 Publishing House, 2018, and also in the excerpts on page 5.

7	Shock Waves Today 02/2018, p. 4,5	Part 2 of the success stories with extracorporeal shockwave therapy (ESWT) in sports medicine	“Shock Waves in Sports Medicine: Success Stories from Around the World – Part 2“ /Radial pressure waves and focused shock waves are not only used to treat traditional indications, but also as a complementary therapy for myofascial pain syndrome /ESWT is also used for acute sports injuries /From the point of view of some doctors, professional athletes benefit particularly as healing processes can be accelerated	Combined
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Shock Waves in Sports Medicine: Success Stories from Around the World – Part 2


We already reported some outstanding success stories of extracorporeal shock wave therapy (ESWT) in sports medicine in our 01/2018 issue. We are continuing the series here – after all, we don't want to deprive you of anything.

 **Oliver Pütz, Team Doctor of the German National Basketball Team, Cologne, Germany**

»As part of my role as Sports Orthopaedist, I use radial pressure wave and focused shock wave therapy not only to treat traditional indications, such as calcified shoulder or heel spur, but also as a complementary therapy, e.g. for myofascial pain syndrome or chronic tendinopathies. In particular, muscle and tendon disorders with a vertebral aetiology can be successfully treated by the combination of focused and radial ESWT.«



Oliver Pütz, Team Doctor of the German National Basketball Team


 **Adj. Prof. Dr med. Florian Elser, Team Doctor of the National League Football Club FC Augsburg, Augsburg, Germany**

»My clinical work at the Hessianpark Clinic in Augsburg focuses on caring for amateur and professional athletes. At HPC, ESWT is part

of the conservative range of treatment in patient care. In addition to the traditional ESWT indications, I use shock waves specifically for acute sports injuries to the musculoskeletal system. Professional athletes, in particular, gain maximum benefit from the treatment as healing processes can be accelerated ensuring a faster return to sports.«



Adj. Prof. Dr med. Florian Elser, Team Doctor of the National League Football Club FC Augsburg


 **Dr med. Christoph Seeger, Team Doctor of the National League Football Club Eintracht Frankfurt, Langen, Germany**

»We treat a lot of competitive athletes with ESWT. Here is a specific example: in my prac-



Dr med. Christoph Seeger, Team Doctor of the National League Football Club Eintracht Frankfurt

tice a 32-year old competitive athlete presented with pain in their heel that they had been suffering from for weeks, caused by plantar fasciitis with plantar heel spurs detected by radiography. In addition to physiotherapy, ESWT was performed using the DUOLITH® SD1 »ultra« device. A combination of focused shock waves and radial pressure waves was used 6 times in total. There was a significant improvement in the symptoms already after two weeks so that a return to team training was achieved.«

 **Dr Chakarg Pongurgsom, Team Doctor of the Thai National Gymnastics Team (SEA Games 2017), Thailand**

»During the preparation for the Southeast Asian Games (SEA Games) 2017 in Kuala Lumpur, Malaysia, ESWT played an important role in the medical care of the Thai National Gymnastics Team – both as sole therapy and in combination with other procedures. Of the many successful treatment examples I would like to highlight one of them: a 21-year old rhythmic gymnast had pain in her left hip, which was diagnosed as iliopsoas tendinitis. Radial ESWT was used with the maximum tolerated intensity (2,000 impulses per treatment, once a week). Cold compresses were used after the treatments and the training sessions were continued. The patient



Dr Chakarg Pongurgsom, Team Doctor of the Thai National Gymnastics Team (SEA Games 2017)

was free of pain after three weeks and was able to perform her normal training exercises.»



Sports Medicine Department of the most successful Slovenian Football Club, NK Maribor

»A special recent success story is shock wave treatment of our player Kassim Doumbia. The 27-year old defender suffered a knee injury in training in March 2018. The diagnosis was a partial intra-articular ligament rupture. Our medical team opted for conservative treatment/rehabilitation. Doctors worked with focused, low-intensity shock waves to accelerate healing. As of June 2018, the player is training again, both by himself and with the team. For the preparation for the new season, he is fully recovered and back in training.«



The defender Kassim Doumbia was treated with focused shock waves.

The following contributions are excerpts from the book »Shock Waves in Sports Medicine« edited by Prof. Dr Heinz Lohrer and Dr Tanja Nauck. It was published in March 2018 by Level10 Publishing House. You can find more information on the publisher's website: www.level-books.com



Jens Lundgren, Dr of Naprapathy, Stockholm, Sweden

»I am always on the lookout for methods that enable a faster and safer return to training or competition. The positive effects of ESWT have been documented in the past for a wide range of chronic pain syndromes. But what about acute sports injuries? My colleagues and I examined this in a retrospective case study on eight patients with muscle injuries (4 x injury to the posterior thigh muscle/hamstring, 4 x injury to the medial gastrocnemius/»tennis leg«). Patients were treated between 5 – 7 times with a combination of focused shock waves and radial pressure waves. All patients in the hamstring group were able to resume their activities 6 weeks after the injury, while patients in the »tennis leg« group were able to resume their activities 4 to 10 weeks after the injury. At the follow-up after 3 months, no new injuries had occurred in either group. Due to the small number of cases no definite conclusions can be drawn, but the idea of ESWT treatment for acute muscle injuries should be discussed and explored further.«



Focused treatment of an injury to the medial gastrocnemius muscle

At a Glance

- Radial pressure waves and focused shock waves are not only used to treat traditional indications, but also as a complementary therapy for myofascial pain syndrome.
- ESWT is also used for acute sports injuries.
- From the point of view of some doctors, professional athletes benefit particularly as healing processes can be accelerated.



Dr Nikos Malliaropoulos, Sports and Exercise Medicine Clinic, Thessaloniki, Greece

»We recently investigated the effect of radial ESWT in the treatment of unilateral subacute and chronic hamstring muscle injuries in a retrospective study. The 37 patients, all athletes of various disciplines, were treated with customised radial ESWT. Compared to the baseline scores, pain scores were significantly reduced in all follow-up examinations, and the functional improvements were also significant.«



Radial treatment of a hamstring muscle injury

8	Shock Waves Today 01/2018, p. 2	Workshop with stadium atmosphere in Italy	“The Prestigious Italian Clinic J Medical Puts Its Trust in Shock Waves from STORZ MEDICAL“ /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	Combined
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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

9	Shock Waves Today 01/2018, p. 3	Description of Shock Wave therapy in sports medicine around the world First part	“Shock Waves in Sports Medicine: Success Stories from Around the World” /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	Combined
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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 Highbrough, 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 Highbrough 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

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

10	Shock Waves Today 01/2018, p.7	New literature: "Shock Waves in Sports Medicine"	"Major Plans for 2018: LEVEL10 Publishing New Shock Waves Book and Optimising Website" /»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	Combined
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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

11	Shock Waves Today 01/2017, p. 4,5	Shock Wave Acupuncture Interview with Dr. med. Heinrich Everke, Constance, Germany	“Shock Wave Acupuncture: Benefits, Treatment Successes, Cost Efficiency” /Perfect complement to traditional acupuncture /Shock wave acupuncture extends treatment options /Painless therapy saves time /Very well accepted by patients /Word of mouth is the best advertising for this type of therapy	Focused
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Interview with Dr Heinrich Everke, Konstanz, Germany Shock Wave Acupuncture: Benefits, Treatment Successes, Cost Efficiency

Dr med. Heinrich Everke



Dr med. Heinrich Everke is a specialist in family medicine and acupuncture in Konstanz on Lake Constance. He applies oriental diagnosis and therapy, Chinese medicine and Western procedures. He has been a member of the German Medical Society for Acupuncture for many years and is a lecturer in acupuncture at the University of Tübingen. Worldwide he has published articles on the topic of acupuncture and shock waves and he presents his results at international congresses. For further information go to www.dr-everke.de

In the range of therapy offered by Dr Heinrich Everke shock wave acupuncture plays a key role. We talked to him about the importance and benefits of shock wave acupuncture in the treatment of chronic disorders of the musculoskeletal system, cost efficiency and patient satisfaction.

Dr Everke, how and when did you start looking into shock wave acupuncture?

In 1995 I had the idea of stimulating acupuncture points with shock waves. I then contacted industry in order to suggest technical implementation. In 2003 the technology of radial shock wave systems at the STORZ MEDICAL company was so far advanced that there were no more obstacles to practical implementation. A small transmitter had to be designed and the levels of energy required for such an application had to be generated.

What do you think about the mode of action of shock waves in acupuncture?

In virtually every part of the body there are pressure receptors, for example in the fascia, in muscles, in blood vessels and on tendons. It is those pressure receptors that are stimulated by the shock waves. If pressure is increased significantly at a certain point, the body has to respond. The acupuncture points selected are generally about 0.5 to 1 cm wide and 0.5 cm deep. An area of that size cannot be simultaneously stimulated by a single needle. A shock wave, on the other hand, can reach precisely that area so it can be responded to by all the pressure receptors simultaneously. Shock waves are the most suitable stimulation for appropriate acupuncture points. That is why the stimulus response turns out to be much more distinct. Shock wave acupuncture is a cross between traditional acupuncture and acupuncture.

What are the main indications that you treat by this method?

I would divide the indications into four categories: knee and hip arthrosis, circulatory disorders in muscles in order to increase sports performance, asthma and muscle tension/lumbago.

What are the benefits of shock wave acupuncture in conjunction with traditional needle acupuncture?

The impact of the combination is more effective than just needle acupuncture on its own. In this way it is possible to combine the benefits of the two techniques. There are points, in the large



Acupuncture points for the treatment of lumbago



Shock wave acupuncture for knee complaints

back muscles for example, which are easier to treat with shock waves because the patient does not have to remain in one position for a long time. As a result, treatment in a posture that is uncomfortable for the patient is reduced considerably. Pain-relieving points in peripheral regions (hands/feet/head) are easier to treat with needle acupuncture. Another benefit is that shock wave treatment is not painful. In my opinion, the effects of chronic lumbago and arthrosis are best suited to this combination.

What makes the shock wave acupuncture type of therapy so important for your practice?

Shock wave therapy has become my trademark. That is what makes my practice stand out from others that only offer one type of therapy. As far as I am concerned, the shock wave unit has now evolved to become a genuine »tool« that I wouldn't do without. It appears to be very advantageous to be able to make an appropriate stimulus available for each point. Shock wave therapy thus provides an extension to the stimulus repertoire for acupuncture treatment and gives me new healing options for chronic pain patients.

How cost-efficient do you think this type of therapy is?

Generally speaking, it can be stated that shock

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

12	STORZ MEDICAL Magazine 2/2016, p. 3	Ukrainian gymnast Ihor Radivilov, French rugby player Dan Carter, National team of New Zealand	“MASTERPULS® Line: Using Radial Shock Waves for Professional Athletes” / Radial shock waves are used to treat professional athletes from a range of disciplines / With MASTERPULS® systems, tendinopathies are treated	Radial
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MASTERPULS® Line: Using Radial Shock Waves for Professional Athletes



2016 is a big year for sports. One highlight was the UEFA European Football Championship in France, where Portugal emerged as the winner at the beginning of July. But this was only one of the sports events taking place this year! That's reason enough to take a look at how shock wave therapy is used to treat top-level athletes.



In France, where football has played a special role ever since the national team won the World Championship in 1998, women's football teams are also very successful. For example, the top-level football club Paris Saint-Germain Féminines also plays internationally in the UEFA Women's Champions League. The club has used the MASTERPULS® MP50 to treat its players since 2012.



In addition to football, rugby is also a popular sport in France. More than 200,000 licenced athletes play rug-

by in over 1,600 clubs in France. The sport attracts at least as many spectators as football. Racing 92, Paris, is one of the top clubs in the French National Rugby League. One of the world's most successful players, Dan Carter, plays for Racing 92. Carter also plays for New Zealand's national team, the «All Blacks», the 2015 Rugby World Champions, and was named the International Rugby Board Player of the Year for the third year running.

Tendinopathies are typical rugby player ailments, with the patellar tendinopathy one of the most common conditions. Dan Carter also suffered from this condition. The Racing 92 team of medics works with the MASTERPULS® MP100 «ultra» when treating patellar tendinopathies.



The Ukrainian gymnast Ihor Radivilov is showing his skills in different disciplines. Radivilov was a gold medalist in Rings at the 2013 European Championships

in Moscow. In 2014, he won the silver medal in Vault at the World Artistic Gymnastics Championships. His shoulder, elbow and

2016 – A year of sports



ankle problems are regularly treated with the MASTERPULS® MP200. Radivilov is enthusiastic about the efficiency of shock wave therapy.

Ukrainian gymnast Ihor Radivilov undergoing radial shock wave treatment.

STORZ MEDICAL wishes all of the athletes a great deal of success in their competitions this year. (sih)



MASTERPULS® MP100 «ultra»



Dan Carter, rugby player for Racing 92 and for New Zealand's national team, the «All Blacks».

At a Glance

- Radial shock waves are used to treat professional athletes from a range of disciplines.
- With MASTERPULS® systems, tendinopathies are treated.
- For more information on the use of STORZ MEDICAL shock wave systems for professional athletes, go to the e-dialogue at «Orthopaedics/Literature» (www.e-dialogue.ch).

13	Shock Waves Today 3/2016, p. 4	Study conducted at University of Salzburg	“Pre-release of Study Findings: Extracorporeal Shock Wave Therapy (ESWT) Can Heal Muscle Injuries Faster” / Study shows that ESWT accelerates the regeneration of skeletal muscle tissue / DUOLITH® SD1 used in study	Focused
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Pre-release of Study Findings: Extracorporeal Shock Wave Therapy (ESWT) Can Heal Muscle Injuries Faster



MSc. Angela Zissler
 Vascular & Exercise
 Biology Unit, Department
 of Cell Biology &
 Physiology, University of
 Salzburg, Austria

Muscle injuries play a central role for recreational athletes and for professional athletes, even more. For professional athletes in particular, it is essential for injuries to heal as quickly as possible so that they can return to their training schedule and prepare for competitions.

When it comes to sports medicine, efficient treatment and successful regeneration of skeletal muscle are fundamental. Despite a range of therapy options, healing of muscle injuries tends to be slow and in many cases, incomplete. Established therapy options are often ineffective, are sometimes controversial and are often difficult to implement in regular routine. In addition, side effects cannot always be fully prevented. Now, for the first time, a study conducted at the University of Salzburg has shown that extracorporeal shock wave therapy (ESWT)

accelerates the regeneration of skeletal muscle tissue.

A study performed on rats investigated the effects of focused shock waves (DUOLITH® SD1) on muscle precursor cells and on the growth of newly formed muscle fibres. It documented that the therapy significantly accelerated the division rate of the muscle precursor cells and newly formed muscle fibres increase their size more quickly. The



Handpiece with focused shock waves

healing stage, which in untreated animals is exhibited after 7 days, is already reached after 4 days in treated animals after only a single approx. 15-minute ESWT session.

This efficient therapy form is already used successfully in various medical disciplines, including orthopaedics, dermatology, cardiology and urology. However, the mechanisms of action at the cellular level have not yet been fully explained. The therapy is non-invasive, can be performed without a great deal of effort, is painless and thus can easily be combined with other treatment methods, such as physiotherapy. ESWT could therefore be highly significant in this area in future.

Source: Press release University of Salzburg, dated 26 July 2016, www.uni-salzburg.at

14	Shock Waves Today 3/2016, p. 4	Case study of treatment by female professional athlete specialized in 400-metre hurdles	“Case Study: Acute Calf Muscle Injury in a Professional Athlete” / Female professional athlete injured her trail leg while practising the take-off into the hurdles / Combination of radial and focused shock waves / Clear shortening of »return to sport«	Combined
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Case Study 1: Acute Calf Muscle Injury in a Professional Athlete



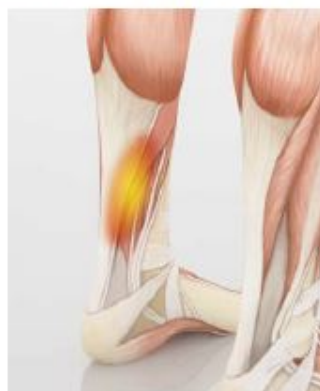
Dr Ulrich Piontkowski
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Germany

In the following case study, we describe an acute calf muscle injury sustained by a professional athlete specializing in the 400-metre hurdles. The 24-year-old athlete injured her trail leg while practising the take-off into the hurdle. The injury manifested as a stabbing pain in the medial side of the calf, forcing her to discontinue training.

The pain extended across the Achilles' heel into the calcaneal region. A diagnostic MRI showed oedema in the distal plantaris tendon region.

An ultrasound with functional testing showed a partial rupture of the medial soleus muscle with oedema at the medial margin of the Achilles' tendon and fluid retention in the region of the distal plantaris tendon. The tear zone was classified as grade 3 and was treated with compression and with shock wave therapy.

With the patient supine, we initiated treatment with the fascia technique (radial shock wave therapy) and the V-ACTOR® technology (vibration therapy) for primary oedema reduction during lymph drainage. In further sessions, we combined the radial shock



The acute calf muscle injury was treated with radial shock waves.


wave therapy (D20-S transmitter) with focused high-energy shock wave therapy in the region of the intermuscular fascia of the gastrocnemius muscle, in the plantar fascia region and focused in the area of the tear. In response to this therapy, which was performed 3 times a week, as well as wearing compression knee stockings, the patient's gait was quickly harmonized after 10 days. After 13 days, the patient was able to perform plantigrade heel strike and raise the forefoot adequately. She was able to resume easy running after 3 weeks and train at her former training level after 4 weeks. In our opinion, the athlete's clearly shorter »return to sport« period can be attributed to the combined shock wave therapy.

15	Shock Waves Today 2/2016, p. 2/3	General interview with Dr O. Miltner. Vice-President Germany of the Society for Orthopaedic Traumatologic Sports Medicine (GOTS)	“Interview with Dr Oliver Miltner, Berlin: Shock Wave Therapy in the Heart of Germany’s Capital” / Combined shock wave therapy with V-ACTOR® opens up a wide range of treatment options / Shock wave therapy is an important component for treating (top-level) athletes / Word-of-mouth is the most effective marketing tool for this treatment form	Combined
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Interview with Dr Oliver Miltner, Berlin:

Shock Wave Therapy in the Heart of Germany’s Capital

Dr Oliver Miltner



Dr Oliver Miltner is an orthopaedist and trauma surgeon. He holds a number of offices, including the positions of Vice President Germany of the Society for Orthopaedic Traumatologic Sports Medicine (GOTS) and the Vice President of the Sport Orthopaedics section of the German Society for Orthopaedics and Orthopaedic Surgery (DGOOC). Miltner and his practice partners own and run »DocOrtho – the Motion Professionals« in Berlin.

Dr Oliver Miltner is the co-owner of the »DocOrtho« group practice in Friedrichstrasse in the district of Berlin-Mitte. His patients include a number of top-level athletes. We spoke with him about the significance of shock wave therapy and its advantages, specifically for treating athletes. We also discussed how a shock wave therapy practice can make its mark in a highly competitive setting like Berlin and what physicians expect these days in terms of equipment service in order to ensure that a practice runs smoothly and efficiently.

Dr Miltner, how long has your practice been in business?

The practice has been around since 2004. Before we opened our practice, my two partners and I planned everything together. However, due to other commitments, I didn't actually officially join until 1 January 2005.

Your practice is located in Friedrichstrasse, one of Berlin's top addresses. Why did you select such an exclusive location for your practice?

The person mainly responsible for the decision was Dr Andreas Heinzinger, one of my two practice partners. We had looked for the right location for two years until we finally found the perfect building – one with potential for the future that has allowed us to grow and expand.

What role does shock wave therapy play in your practice?

Today, we have five shock wave devices: four at our practice and a mobile device that we use for a top-level sport club we care for. For us, shock wave therapy is a very important part of our holistic therapy concept. It is a perfect complementary module for treating functional disorders.

How economically efficient do you think this form of therapy is?

Working with shock wave therapy can be very economically efficient. However, when calculating the costs, you have to keep in mind that performing shock wave therapy properly takes time.

What are the main areas and indications you use shock wave therapy for?

We use it for conventional problems like heel spur, calcific shoulder tendinitis and tennis elbow, but we also frequently use it when we perform trigger point therapy, along the lines of trigger osteopractice. We use shock wave therapy for treating chronic back pain or tendinitis, to name just two examples.

When it comes to shock wave therapy, your practice is located in a highly competitive setting, with a number of shock wave devices in Berlin. How do you stand out from the crowd?

We aim to offer high quality and help our patients. Not everyone out there performing shock wave therapy is all that well-versed. In 2004, we conducted a marketing campaign on shock wave therapy as part of a radio broadcast. While it did serve to attract new patients, we decided not to use any more such marketing campaigns in the future. Our most important marketing tool is our patients' recommendations.

What's your overall approach to marketing your practice?

We have a modern website, for instance, which is very important. Our marketing strategy also meant changing the name of our practice. We used to be called the »Practice for Holistic Orthopaedics«. Today, we are »DocOrtho – the Motion Professionals«. On top of our work in our practice, we are also active in the field of research. We contribute insights from our practice at meetings, both as conference organizers and speakers. But as I already mentioned, the key pillar of our marketing strategy is our high-quality work. Our best advertising is word of mouth.

One of your focuses is sports medicine. You treat top-level athletes in various disciplines. Can you describe the treatment success in this area brought about by shock wave therapy?

Shock wave therapy is a key component for treating athletes, especially high-level athletes. Take the volleyball players on the German volleyball team the Berlin Recycling Volleys. These athletes' most frequent complaint is not acute injury, but rather overuse injuries, acute blocked joints of the spine, and tendinitis. Shock wave therapy is indispensable for treating these conditions. For this reason, the teams we take care of always have a shock wave device with them.



Shock wave therapy is a very important component for treating athletes, especially high-level athletes.

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STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

You are a specialist for muscular chains. How can shock wave therapy be used to successfully treat problems in this area?

Shock wave therapy is an important tool for treating muscular chains. It often allows us to get problems under control more quickly. If shock wave therapy is performed properly, you can achieve a great deal more in 20 to 30 minutes than you can with manual treatment in an hour. To be specific, this means that you can dissolve more trigger points in less time. This is also one of the reasons that shock wave therapy is so well accepted by the top-level athletes we support. We see this every season. It usually doesn't take long for the new members of the teams we take care of to become convinced of the merits of shock wave therapy.

What kind of shock wave do you use the most, and how important are the two modes – radial and focused – especially for treating muscular chain problems?

We use the DUOLITH® SD1 »ultra« with a radial and a focused module, for instance. We find it very practical. Another model is the V-ACTOR® integrated in the radial module,

which we use for trigger point diagnosis and for massage therapy. In my opinion, it's essential to have this wide range of treatment options. Depending on the depth of a trigger point, on the athlete's tension level, or the proximity of a trigger point to other structures, I am able to choose which of the three options I am going to use and which one will offer me the best results. It also allows us to tailor the treatment to the athlete's individual symptoms. Depending on the problem, it is sometimes better to initially use only the V-ACTOR® for treatment instead of initiating radial shock wave therapy right away.

You work with five shock wave devices from a single manufacturer. How important for you is personal contact to the manufacturer or distributor and what role does equipment service play?

Because our devices are constantly in use, we always need to make sure things are resolved quickly. In this area, we are very satisfied with the manufacturer of the devices. At present, we can't imagine anything better. For instance, I know that a problem that

comes up on a Saturday will usually be resolved on Monday. For our planning, and for things to go without a hitch during our regular treatment times, that's very valuable. The overall package, meaning the equipment quality, service, and our personal relationship with the distributor, is excellent.

Dr Miltner, thank you very much for taking the time to talk with us.

At a Glance

- Combined shockwave therapy with V-ACTOR® opens up a wide range of treatment options
- Shock wave therapy is an important component for treating (top-level) athletes
- Word-of-mouth is the most effective marketing tool for this treatment form
- Reliable equipment service eliminates problems at your practice

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Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

16	Shock Waves Today 2/2016, p. 3	Case study for radial shock wave treatment at a professional athlete	“Case Study: Successful Radial ESWT for Functional Muscle Injuries” / Type Ib delayed onset muscle soreness / Treatment with radial shock waves	Radial
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Case Study: Successful Radial ESWT for Functional Muscle Injuries



Using radial shock waves to treat the thigh

Mr F. (31), a professional athlete, presents with pain in the region of the rectus femoris muscle after stress from jumping during

preseason preparations. Structural damage was ruled out by ultrasound. Clinically, in addition to the thigh problems, the patient also complains of blockage of the lower lumbar joints. The blockage can be resolved with manual therapy. The athlete therefore has a type Ib delayed-onset muscle soreness (neurogenic) (see the list of muscular disorders).

Radial shock wave therapy is a key component of the treatment algorithm for functional muscle injuries. The athlete underwent two radial shock wave treatments with 4,500 shock wave impulses each at 2.6 bar. He also received physical therapy. After three days, the athlete could train again without any restrictions.

Conclusions

In the case study presented above, radial shock wave therapy was used very effectively for treating functional muscle injury.

Overview of Muscular Disorders

Functional Disorder

- Ia: Fatigue-induced disorder
- Ib: Delayed-onset muscle soreness
- II: Neuromuscular muscle disorder

Structural Disorder

- IIIa: Minor partial muscle tear (tear with a maximum diameter of less than a muscle fascicle bundle)
- IIIb: Moderate partial muscle tear (tear with a diameter of greater than a fascicle/bundle)
- IV: (Sub)total muscle tear/tendinous avulsion

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Sources: STORZ MEDICAL publications 2007-2020

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17	Shock Waves Today 1/2016, p. 4	Establishing a patient-tailored treatment concept for a runner	“Patient-tailored Treatment Concepts” / Symptomatic treatments based on the »ouch principle« are often unsuccessful / A detailed history and precise diagnostic testing are important prerequisites / Multimodal treatment approach for treating the causes and symptoms	
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Patient-tailored Treatment Concepts



Many runners suffer from heel pain

Ralf Müller, 47, has suffered from the same symptoms for three years: stabbing pain in his heel after putting pressure on it. He has not been given a specific diagnosis. Several doctors have diagnosed »chronic overuse pain«. Initially, he received the occasional cortisone injection. When this didn't help, his doctors suspected faulty foot posture and prescribed orthotics. While this reduced the strain and pain to some extent during his everyday activities, there was no improvement when he engaged in his hobby, running.

There are countless cases like this one. It's the result of applying the »ouch« principle, meaning treating the symptoms only where it hurts. The actual source of the pain is completely ignored. But in most cases, the problem stems from muscular imbalance and an associated static problem of the musculoskeletal system.

At a Glance

- Symptomatic treatments based on the »ouch principle« are often unsuccessful.
- A detailed history and precise diagnostic testing are important prerequisites.
- Multimodal treatment approach for treating the causes and symptoms

In fact, we all have some sort of faulty posture somewhere in our bodies, whether it's in the pelvis, spine or a joint such as the ankle. Faulty postures can be congenital or can come about due to trauma, strain or improper weight-bearing.

Yet not everyone experiences pain. This is due in part to factors such as constitution or stress.

It's important to recognise and diagnose which musculoskeletal structures are affected and the movement patterns that are impaired. The next step entails filtering out and combining the right treatments from the jungle of options.

In Ralf Müller's case, the doctor took a detailed history and performed functional tests and a gait analysis. The results: a fracture sustained in the fibula when he was a teenager caused restricted range of motion in the ankle joint. As a result, the plantar fascia and calf muscles are placed under excessive tension. When subjected to excessive tension, both muscle bellies act like a bow whose highest point of tension is at the heel. Since the condition is not visible either sonographically or radiographically, it can be assumed

that the pain is caused by this muscular imbalance.

For this reason, three focuses should ideally be placed during Ralf Müller's treatment:

- Mobilizing the lower extremity joints
- Reducing the tension of the plantar foot and calf muscles and of the further muscle chain up to the pelvis
- Strengthening the foot and calf muscles



Typical pain zone of a runner

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Sources: STORZ MEDICAL publications 2007-2020

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18	Shock Waves Today 4/2015, p. 2/3	General interview about the use of shock wave therapy in competitive sports	“Interview with Dr Michael Lehnert: Radial Shock Wave Therapy in Sports Medicine and High-level Sport” / Advantages of radial shock wave therapy in comparison to other methods / Successful treatment of professional female football players of German football club 1. FFC Turbine Potsdam	Radial
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Interview with Dr Michael Lehnert: Radial Shock Wave Therapy in Sports Medicine and High-level Sport

Dr Michael Lehnert



Dr Michael Lehnert is an orthopaedic specialist with additional qualifications as a hand surgeon and sports physician. He has worked as an orthopaedist in private practice since 1996. Together with the partners in his practice, he is the head of the »meviva – Medicine in Motion« – medical centre in Berlin. He is the head team physician of the women's national league football team Turbine Potsdam and is the medic for the German Olympic Centre in Potsdam (track and field).

More information: www.meviva.de



Orthopaedist and sports physician Dr Michael Lehnert treats numerous national and international athletes, including in his role as head team physician for 1. FFC Turbine Potsdam, one of the most successful clubs in German and European women's football. We spoke with him about the use of radial shock wave therapy and its advantages, specifically for treating top-level athletes.

Dr Lehnert, when did you start using radial shock wave therapy and what role does it play in your practice today?

I have worked with radial shock wave therapy since 2011. It's an integral component of our orthopaedic treatment concept. Due to the problematic reimbursement situation of patients with statutory health insurance, at our practice shock wave therapy is mostly used for privately insured patients and self-payers. Properly performed shock wave therapy takes time and needs to be remunerated accordingly. When it comes to the top-level athletes in our care, their club – for instance, a national football league club – usually covers the treatment costs. It's a bit different for the track and field athletes we treat. In many cases, we sponsor the shock wave therapy ourselves, because we think it is a crucial component of the best-possible treatment.

You treat numerous top-level athletes in various disciplines and performance classes. In your view, what makes radial shock wave therapy so essential?

Radial shock wave therapy has a host of advantages. For example, it can eliminate muscular imbalances in a very short time. For treating muscular chains, I consider it to be the therapy of choice. The great thing about shock wave therapy is that the athletes undergoing treatment see the success very rapidly. In many cases, an athlete will actually get up from the treatment table after the first treatment and will already have a

different and improved feeling. For us, shock wave therapy is also important because it is non-invasive. For this reason, athletes are much more prepared to undergo shock wave therapy than take drugs. When it comes to injections, they tend to be skeptical or reject them altogether. This may delay treatment, which can exacerbate an existing problem. In my experience, athletes accept shock wave therapy without any reservations, which allows treatment and in turn, healing, to start earlier. This makes shock wave therapy extremely valuable in practice, since when we use it, we can often dispense with drugs altogether.

What advantages does shock wave therapy offer compared to manual treatment interventions?

Shock wave therapy is superior to manual treatment interventions, especially with respect to penetration depth. No manual intervention that I apply in the muscle using either my hand, a stick or my elbow permits me to achieve this depth. I simply can't get there. On top of that, the manual treatment procedures always cause mechanical »damage« to the skin region. The pressure that I apply via the skin when I use manual techniques is simply passed on. In contrast, with shock wave therapy, a »phalanx-like« bundling of the shock wave is created deeper down. The pressure that is built up there can only be applied because we do not damage



Radial shock wave therapy for the thigh: for football players, thigh problems are one of the main indications.

STORZ MEDICAL in Professional Sports
 Sources: STORZ MEDICAL publications 2007-2020
 Last update: August 4th, 2020

the skin with it. This makes it superior to the manual technique. But shock wave therapy is not a replacement for manual procedures. We need to continue to use manual therapy and massage. However, shock wave therapy provides us with a treatment method that can contribute to better care for athletes in all performance classes and facilitates our work with patients.

You regularly treat the women in the 1. FFC Turbine Potsdam national league football club, including several A-cadre national players. What are the main indications and the most frequent problems that you treat using radial shock wave therapy in this context? How do the women respond to the therapy?

When treating the football players, the main indications are muscular imbalances, trigger points, hypertonia, problems with the thigh – especially the adductors – as well as with the calf and lower back, in that order. They respond to the radial shock wave therapy perfectly, and the treatment is well-accepted and popular.

In addition to your work at your practice, you are often on the road in order to treat «your» athletes on site. What do modern mobile radial shock wave devices have to offer in order to meet your expectations?
 During both competition and training, radial shock wave therapy can greatly facilitate



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our work. Of course, the devices have to be easy to transport and be small enough to be used in the locker room on site. For example, we always have a modern, very compact MASTERPULS® shock wave device with us during 1. FFC Turbine Potsdam Bundesliga or Champions League away matches, and we use it in the locker room. This allows us to use it on site to resolve the players' muscle- or tendon-related problems that occur spontaneously.

To conclude, we'd like to ask you about the economic efficiency of shock wave therapy. How efficient do you think it is?
 The private insurers now reimburse shock wave therapy for certain indications. In general, shock wave therapy is definitely economically efficient both when used at a practice as well as in mobile applications – if it is possible to have the services reimbursed as they can already be reimbursed today for manual therapy.

Shock wave therapy is also used in women's football.

Dr Lehnert, thank you very much for taking the time to talk with us.



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»Shock wave therapy is superior to manual treatment interventions, especially with respect to penetration depth.«

At a Glance

- Radial shock wave therapy is an integral component of the orthopaedic therapy concept
- Well-accepted by athletes
- Perfect complement to manual treatment interventions
- Valuable for mobile use

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Sources: STORZ MEDICAL publications 2007-2020

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19	STORZ MEDICAL Magazine 2/2015, p. 3	1. FFC Turbine Potsdam, VfL Wolfsburg (football, women)	“One Year After Market Launch – MASTERPULS® »ultra« Successfully Started” / Positive comment by Dr Michael Lehnert about the treatment of players of German football club 1. FFC Turbine Potsdam with MASTERPULS® MP100 »ultra« / In the future, the MASTERPULS® MP100 »ultra« will also be used for the treatment of women’s team of German football club VfL Wolfsburg	Radial
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**Dr Michael Lehnert,
Berlin, Germany:**

»I regularly treat the female players from 1st FFC Turbine Potsdam, as well as the female national A-team players. Since I am a consultant to the medical department of the women’s team of VfL Wolfsburg, the device will also be used for the reigning DFB Cup winners and 2-time Champions League victors starting this season.«

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Sources: STORZ MEDICAL publications 2007-2020

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20	STORZ MEDICAL Magazine 2/2015, p. 5	<p>General article about the renowned Thurgau Hospital in Münsterlingen, Switzerland, which relies on STORZ MEDICAL devices</p>	<p>“Reference Clinic in the Neighbourhood – Spital Thurgau in Münsterlingen, Switzerland”</p> <p>/ Hospital is a leading healthcare facility in Switzerland, has strong partnership with STORZ MEDICAL</p> <p>/ Orthopaedics department has relied on the DUOLITH® SD1 for pain therapy since 2012.</p> <p>/ Physical therapy department uses a MASTERPULS® MP100</p> <p>/ STORZ MEDICAL shock wave systems also used in the hospital’s new private practice (»Sportpraxis am See«)</p> <p>/ Together with the orthopaedic department of the hospital, the »Sportpraxis am See« was certified as a »Sport Medical Base approved by Swiss Olympic«</p>	Combined
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Reference Clinic in the Neighbourhood – Spital Thurgau in Münsterlingen, Switzerland



The team of doctors from the orthopaedics department of the Münsterlingen cantonal hospital



Shock wave treatment at the Münsterlingen cantonal hospital

The cantonal hospital and psychiatric ward of Münsterlingen on Lake Constance are celebrating their 175th anniversary this year and, with the opening of the new »3i« building, have achieved another milestone in the more than 1,000-year history of the monastery and present-day hospital campus.

The cantonal hospital was originally established in a wing of the Münsterlingen monastery. The hospital campus has since been continually modernized by various renovations and expansions and adapted to the current medical standard. Today, as part of the Spital Thurgau AG network, the Münsterlingen hospital is one of the leading healthcare facilities in Switzerland.

STORZ MEDICAL and Spital Thurgau AG have been working together successfully in a variety of technical fields for many years. The location in Münsterlingen is situated just a few kilometres from the STORZ MEDICAL

headquarters and can be visited as a reference centre.

In association with the Frauenfeld cantonal hospital, the MODULITH® SLX-F2 mobile lithotripter was commissioned by the urology department in 2009. It is used regularly by both clinics. Thousands of patients have been successfully treated in the meantime.

The orthopaedics department in Münsterlingen has relied on the DUOLITH® SD1 for pain therapy since 2012. A MASTERPULS® MP100 also found its way to the Münsterlingen physical therapy department at the same time.

In June 2015, the private practice »Orthopädie am See« (»Orthopaedics on the Lake«) and the Münsterlingen cantonal hospital opened a practice for sports medicine and sports injuries on the campus, called the »Sportpraxis am See« (»Sports Medicine Practice on

the Lake«). This practice meets the needs of athletes from around the region.

In addition to cutting edge diagnostics, the sports medicine practice offers individualised, high-level treatments. Shock wave devices from STORZ MEDICAL are part of its standard operating equipment. Top athletes at national and international levels trust in the reliable, risk-free and sustainable pain therapy provided by shock waves. Together with the orthopaedic department of the cantonal hospital, the »Sportpraxis am See« was certified as a »Sport Medical Base approved by Swiss Olympic.«

Today, the STORZ MEDICAL devices installed in the Thurgau hospital network are a fundamental pillar of everyday patient care in the fields of urology, orthopaedics, sports medicine and physical therapy.

(sti)

At a Glance

- Cantonal hospital celebrates 175-year anniversary
- A leading healthcare facility in Switzerland
- STORZ MEDICAL reference and visitor centre in the urology and orthopaedics departments
- »Swiss Olympic Medical Base«



New »3i« building of the Münsterlingen cantonal hospital

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Sources: STORZ MEDICAL publications 2007-2020

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21	Shock Waves Today 2/2014, p. 2/3	General interview about the use of shock wave therapy in competitive sports	“Interview with Prof Dr Heinz Lohrer: Extracorporeal Shock Wave Therapy (ESWT) in Competitive Sports” / Advantages of ESWT vs. other methods / Advantages of combined shock wave devices (focused/radial) / Future of shock wave therapy in professional sports	Combined
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Interview with Prof Dr Heinz Lohrer: Extracorporeal Shock Wave Therapy (ESWT) in Competitive Sports



cine, especially when dealing with competitive athletes, was »do no harm«.

There was also the idea that treatment should always be as simple as possible and should not have any major side effects. Extracorporeal shock wave therapy seemed to meet these requirements. I saw shock waves as an alternative to the then still very popular practice of giving pain-killing injections to athletes. My interest was further piqued when, in 1992, I read an article describing the use of extracorporeal shock waves to treat tendinosis calcarea. As a result, I was keen to try extracorporeal shock wave therapy, but I remained somewhat sceptical about the devices that were available. What finally persuaded me was the MINILITH® SL1 from STORZ MEDICAL, a device specifically developed for orthopaedic use, which also featured ultrasound localisation. We installed our first MINILITH® SL1 at the institute in Frankfurt in 1995. Our first outside deployment was at the 1996 Olympics in Atlanta, where we used the device to treat members of the German Olympic squad.

Extracorporeal shock waves have been used to treat competitive athletes at the Frankfurt Institute for Sports Medicine since 1995.

Since its foundation in 1984, the Frankfurt am Main Institute for Sports Medicine has established itself as one of the leading national sports medicine centres in Germany. The institute has been successfully using extracorporeal shock wave therapy since 1995 on clients including top athletes at the Atlanta, Sydney and Athens Olympics. Numerous scientific studies on shock wave therapy have also been carried out at the institute. At the 2nd International SHOCK WAVE Conference in Berlin, we spoke to the institute's medical director, Prof Dr Heinz Lohrer, about the use of shock wave therapy in competitive sports, current trends and future perspectives for this type of therapy.

Prof Dr Lohrer, as a former competitive athlete who still enjoys sports in his spare time, you know how unpleasant injuries can be and how important therapy is. When did you first have the idea of using extracorporeal shock waves to treat competitive athletes?

That was about 25 years ago. I first sat up and took notice upon reading the results of experiments performed by Valchanov in 1988, which showed that shock waves were able to promote bone regeneration. Even then, the guiding principle in sports medi-

How did the athletes in Atlanta react?

Back then, they were a little in awe of the new treatment method, as was I. Their initial reaction was very positive. They were curious, but still a little cautious, as they were used to other treatments. For that



The MINILITH® SL1 from STORZ MEDICAL, used to treat elite athletes at the Olympics for the first time.

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reason, some treatments were not given. Athletes who had previously been treated at the institute in Frankfurt, however, were familiar with the benefits of shock wave therapy and were happy to undergo treatment.

Your Institute In Frankfurt treats more than 7,000 athletes of every age and level of performance annually, including a number of top athletes. For competitive athletes, what are the most common injuries that you treat using extracorporeal shock wave therapy?

For us, by far the most common injuries are various tendinopathies – chronic damage to the Achilles, patellar, shoulder or other tendons. This is followed by lumbar spine problems, bone injuries and osteochondrosis. The latter is the most common diagnosis in children who play sports.

What benefits does extracorporeal shock wave therapy offer over traditional treatment methods?

One major benefit is that shock wave therapy can be used at longer intervals. In most cases just three to five weekly sessions are sufficient. That would not be enough for manual therapy. Many patients appreciate the time savings. The treatment sessions are also shorter. However, the best solution is sometimes a combination of shock wave therapy and physiotherapy.

In the past, shock wave treatment always meant focused shock waves, but now radial shock waves are also used. Each type of shock wave was produced by a different device. Today combined focused/radial shock wave therapy systems are available. What benefits do they offer?

Combining both techniques in one device was a big step forward for shock wave technology, especially since devices such as the DUOLITH® SD1 »ultra« also include an ultrasound module. Without changing the device, I can locate a stress fracture using ultrasound, for example, then apply focused shock waves to it and, if the patient also has related muscle tension, treat that using radial shock waves. This ensures that the

patient gets the maximum possible benefit from the treatment. We are extremely satisfied with the combined shock wave device.



DUOLITH® SD1 »ultra«

What progress would you like to see in the future in terms of extracorporeal shock wave therapy for amateur and competitive athletes?

From a sports orthopaedics point of view, I would like to see more emphasis placed on bone indications. In recent years, we have carried out a number of studies here in Frankfurt in areas such as shock wave therapy for bone indications in children and adolescents. We are very satisfied with the results to date. A further important area is research in the area of muscle injuries, where there is still a lot of work to be done on taking shock wave therapy forward. We need large numbers of cases for these studies, which means greater international collaboration on research.

Do you consider extracorporeal shock wave therapy to be an established treatment for competitive athletes?

Shock wave therapy is not yet a routine treatment option for competitive athletes.

I think technical developments leading to more compact devices will, however, result in greater use in competitive sport. We also need more studies on individual indications such as achillodynia and patellar tip syndrome. There is a very solid research base when it comes to treatment of plantar fasciitis. No other treatment (including an operation) has had its efficacy demonstrated as convincingly as shock wave therapy. We thus have very good arguments for the use of this technique.

What do you think the future holds for shock wave use in competitive sport at the global level?

Shock wave therapy is already used in a competitive sports context in many European countries, including at major football clubs in England, Germany and Spain, where its use is now routine. However, in many countries, including great sporting nations such as the USA, Brazil and Japan, licensing issues have prevented the use of shock waves from becoming widespread. I think that will change over the next few years, though.

Prof Dr Lohrer, thank you very much for the interview.

Prof Dr Heinz Lohrer



Prof Dr Heinz Lohrer is medical director at the Frankfurt Institute for Sports Medicine. He is an orthopaedics, physical therapy and rehabilitation, and sports medicine specialist and a chiropractor.

Further information is available at: www.smi-frankfurt.de

22	STORZ MEDICAL Magazine 3/2014, p. 5	General article about ESWT treatment of football injuries	“Successfully Treating Football Injuries with Shock Waves” / Classic football injuries and their treatment (and diagnosis) with ESWT	Combined
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Successfully Treating Football Injuries with Shock Waves



Football is a rough sport.

250 million people of every age play football all over the world – this means that people are destined to get injured. Since football is a contact sport and most people do not use shin pads or other protection, a wide range of different injuries are possible. During a game, players constantly change movements and are continually stopping and running. This places great strain on the entire locomotor system and its connected musculoskeletal system. The weather and the state of the pitch can also cause injuries.

Most injuries involve the lower extremities, which – assuming they are not affected by fractures, cartilage damage or torn ligaments – are for the most part treated using conservative methods. Here, combined ESWT is used for virtually all injuries.

Classic football injuries that can be successfully treated with ESWT include:

- Tendon injuries such as those to the Achilles tendon, the peroneal tendon, the posterior tibial tendon, the flexor hallucis longus tendon and the patellar tendon
- Adductor problems
- Muscle pain in the area of the pubic bone

With these complaints, a comprehensive clinical examination is first carried out for diagnosis. This examination always includes the pelvic position, the leg axis, the foot position

as well as functional examinations of the entire kinetic chain. Imaging procedures such as ultrasound or, in more complex cases, MRT or CT complete the clinical examination for diagnosis. If it is possible to treat an indication using ESWT, it is usual to apply a coordinated combination of focused and radial shock wave therapy. When doing this, 3 - 6 treatments are carried out at 4- to 7-day intervals, depending on the symptoms.

The DUOLITH SD1* »ultra« is ideally suited for treating the indications mentioned above. In addition to shock wave therapy and the associated treatment documentation, you can also use the DUOLITH SD1* »ultra« for diagnostic clarification. Since it is possible to combine ESWT very well with other



Diagnosis and shock wave therapy in one system: DUOLITH® SD1 »ultra«

physical therapies and manual techniques, people tend to do this in most cases. The self-healing process is activated and allows athletes to start training again very quickly. Amongst other things, this is due to the rapid effect of shock waves. This not only leads to quicker healing of the tissue structure but is also very effective and leads to a sustainable and promising outcome.

At his sports medicine practice in Hanover, **Prof Dr Karsten Knobloch** specializes in tendon injuries:



Prof Dr Karsten Knobloch

»Focused shock wave therapy activates stem cells, which supports the healing of the tendon. The radial shock waves supplement this process by means of trigger point treatment. To me, this means that ESWT is an indispensable component of modern tendon therapy.«

Dr Pascal Vogt is an orthopaedic surgeon at the Canton hospital in Münsterlingen, Switzerland, whose high quality sports medicine service was awarded the »sport medical base approved by Swiss Olympic« title:



Dr Pascal Vogt

»We achieve excellent results with combined ESWT in the case of sports injuries. In the area of pseudarthrosis in particular, our results are more than encouraging and very successful after other therapies have failed.«

Dr Markus Braun, Borussia Dortmund's team doctor:



Dr Markus Braun

»At our club, we use combined shock waves both preventively and in acute cases. We treat trigger points as well as tendinopathies. We have achieved excellent results in the area of patellar tendonitis.«

(cul)

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

23	STORZ MEDICAL Magazine 3/2014, p. 4	Benfica Lissabon (football)	“Benfica have chosen the DUOLITH® SD1 »ultra«” / Portuguese football club Benfica Lissabon trusts STORZ MEDICAL devices	Combined
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Benfica have chosen the DUOLITH® SD1 »ultra«



Benfica is the most famous Portuguese football club to use the DUOLITH® SD1 »ultra« to treat their players.

The football club has a long history of success in professional football at the national and international level. Amongst other things, Benfica have won the Portuguese

championship 33 times, taken the Portuguese cup 27 times and been Portuguese Super Cup winners four times. In the 2013/2014 season, Benfica managed a domestic treble by winning the championship, the cup and the Super Cup. On the international stage, Benfica has twice won the European Cup that we now know as the Champions League.

By acquiring the DUOLITH® SD1 »ultra« modular shock wave therapy system, the club will get its players fit for the 2014/2015 season to defend the treble they won the previous year.

(dam)

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

24	STORZ MEDICAL Magazine 3/2014, p. 4	General article, naming all football clubs and national teams that rely on STORZ MEDICAL devices	“ESWT in the History of Professional Football” / Article on the occasion of the Football World Cup 2014 in Brazil / Clubs and national teams with STORZ MEDICAL devices	Combined
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ESWT in the History of Professional Football



Prof Andrea Ferretti treating Italian defender Paolo Maldini

The 20th World Cup has been in full swing since 12 June and is what everybody is talking about all over the world. According to the German news magazine »Der Spiegel«, 80% of German TV viewers watched their national team's first game against Portugal.

STORZ MEDICAL has also been gripped by football fever because shock wave therapy systems have long been a fixture in professional football. Focused shock waves were used for the first time at a World Cup in 1998 with the MINILITH® SL1, the predecessor of the DUOLITH® SD1. This was the start of our success story: »Extracorporeal shock wave therapy (ESWT) in professional football«



Italian striker Roberto Baggio being treated with the MINILITH® SL1.

STORZ MEDICAL is continuously working on making ESWT history in professional football. Today, successful users of STORZ MEDICAL shock wave therapy systems include clubs such as Borussia Dortmund, Schalke 04, Bayern Munich, Atletico Madrid, Villarreal, Benfica, Fiorentina and FC Basel to name but a few.

(dam)

* The following teams have been provided medical care with a STORZ MEDICAL device at football World Cups and European Championships: Italy, France, Switzerland, the Netherlands, Greece and Spain

-  1998 – World Cup in France
MINILITH® SL1
-  2000 – European Football Championship in Belgium and the Netherlands
MINILITH® SL1
-  2002 – World Cup in South Korea and Japan
MINILITH® SL1
-  2004 – European Football Championship in Portugal
MINILITH® SL1/MASTERPULS® MP100
-  2006 – World Cup in Germany
MINILITH® SL1/DUOLITH® SD1
-  2008 – European Football Championship in Austria and Switzerland
DUOLITH® SD1/MASTERPULS® MP100
-  2010 – World Cup in South Africa
DUOLITH® SD1/MASTERPULS® MP100
-  2012 – European Football Championship in Poland and the Ukraine
DUOLITH® SD1/MASTERPULS® MP100
-  2014 – World Cup in Brazil
DUOLITH® SD1

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

25	ShockNews 1/2014, p. 3	Villarreal CF (football)	“DUOLITH® SD1 »ultra« Succeeds at Spanish Premier League Club Villarreal CF” / Villarreal CF relies on STORZ MEDICAL devices for the treatment of its players / Villarreal CF is the first Spanish football club that uses the DUOLITH® SD1 »ultra«	Combined
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DUOLITH® SD1 »ultra« Succeeds at Spanish Premier League Club Villarreal CF



Dr Adolfo Muñoz, medical director of the Villarreal CF soccer club with the DUOLITH® SD1 »ultra«

Villarreal CF is the first Spanish soccer club to use the DUOLITH® SD1 »ultra« for the treatment of its players. Medical director Dr Adolfo Muñoz welcomes the latest acquisition of the club. After all, the effectiveness of the system in the daily treatment of muscular problems and injuries was one of the reasons for the club to buy the DUOLITH® SD1 »ultra«. If Villarreal CF continues to play on the same level in this season, which has been successful so far, the team will certainly participate in the Europa League.

(sih)

STORZ MEDICAL in Professional Sports

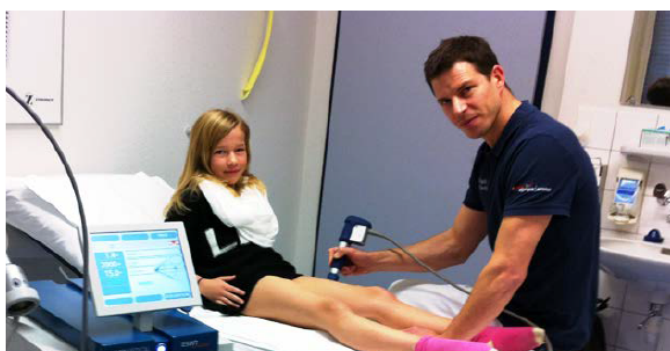
Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

26	ShockNews 1/2014, p. 3	General article about the treatment of professional athletes	“Swiss Olympic: Using Shock Waves for High-performance and Talented Young Athletes” / Successful treatment of athletes with shock waves at the Thurgau Hospital in Münsterlingen, Switzerland	Combined
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Swiss Olympic: Using Shock Waves for High-performance and Talented Young Athletes

sport medical base
approved by



Dr Pascal Vogt treating a young athlete

Canton Thurgau, home of STORZ MEDICAL, is a region of high quality of life where many high-performance and talented young athletes as well as hobby athletes live.

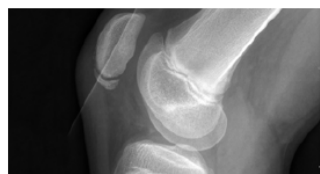
The central hospital of the Canton is located in Münsterlingen at Lake Constance. For some years it has offered an infrastructure for hobby and high-performance as well as talented young athletes alike where state-of-the-art technology and knowhow contribute to a quick and comprehensive diagnostic clarification and treatment of sporting problems and injuries. The high quality of work in the field of sports medicine was recently confirmed when the Canton hospital was awarded the label »sport medical base approved by Swiss Olympic«.

In addition to traditional conservative methods we have quite successfully applied shock waves for five years. Usually we combine focused shock wave treatment at the transition from bone to tendon with radial shock wave treatment in the area of the trigger points of the corresponding muscle. Both applications can be easily performed in an ambulant way with one single device, the DUOLITH® SD1.

In the following I would like to present two interesting cases from our surgery where we managed to eliminate all symptoms by means of shock wave treatment.

Dr Pascal Vogt

Case 1:



The X-ray shows a loose ossicle typical of Sinding-Larsen-Johansson disease as an avascular ossification disorder in adolescents. By combining focused and radial shock wave treatments in a total of three sessions, the patient was absolutely free of symptoms and functionality in sports was restored to a 100% within six weeks.

Physiotherapy with intensive stretching of the quadriceps, local ultrasound application and Iontophoresis could not improve the symptoms in a 12-year-old track-and-field athlete suffering from pain at the inferior patella apex on the right hand side for half a year.

Case 2:



Five sessions of focused shock wave treatment and initial immobilisation of the elbow with an upper arm splint led to the complete elimination of symptoms and a 100% restoration of functionality in sports within three months.

15-year-old gymnast, 25 hours of training a week and pseudoarthrosis of the radial head due to an Aitken type I stress fracture a year ago. Despite reduced training, physiotherapy and interim immobilisation, the fracture did not heal, the pain under stress remained and an extension deficit of 5° in the elbow area persisted.

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

27	ShockNews 1/2014, p. 2	2014 Winter Olympics in Sochi/Russia	<p>“STORZ MEDICAL at the Sochi Olympics”</p> <p>/ Successful treatment of German bobsleigh and luge teams</p> <p>/ Successful treatment of Russian Ice Hockey stars</p> <p>/ South Korean figure skating star Yuna Kim (Olympic and world champion) uses shock wave therapy while preparing for Sochi 2014</p>	Radial and combined
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STORZ MEDICAL at the Sochi Olympics

German Bobsleigh and Luge Teams in Top Shape



One of the top pushers, Franziska Fritz of the team of Sandra Kiriasis (silver medalist in the European Championship), and Dr Heinzinger at the start in St. Moritz

For the German bobsleigh team the crucial phase of preparation for Sochi started in 2014 with the World Cup in St. Moritz, Switzerland. Dr Andreas Heinzinger of the Berlin-based Doc-Ortho team was responsible for the German national team's medical care. And the MASTERPULS® MP100 was always at hand.

In the Olympic cycle the focus is placed on the week of competitions during the games. This is when athletes should be able to achieve the best performance of the season. It is important not only to keep the level of fitness but to improve it. Here problems with muscles and tendons in the spinal area and the extremities are frequent.

This is the reason why we brought along the MASTERPULS® MP100 shock wave device. We wanted to be able to deal with athletes' medical problems as quickly as possible. Thus, 12 members of the athletic team re-



The MASTERPULS® MP100 accompanies German bobsleigh athletes in their competitions



Shock wave treatment of the thigh

ceived muscular treatment in the week from 5 – 12 January. 3 treatments of the lower extremities, 3 treatments of the spine, 2 of the upper extremities and 4 on various locations were effected. Treatment frequency varied between 1 and 5 shock wave applications per week. Pulse frequency, pressure and transmitter combinations as well as the number of pulses were different for each athlete.

Dr Andreas Heinzinger

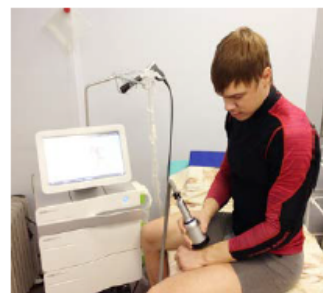
Russian Ice Hockey Stars Count on Shock Waves

For the Olympics, Russian sports fans place great hopes in their national ice hockey team. Three of the players come from the «Ak Bars» ice hockey club in Kasan, the seventh largest city of Russia. This ice hockey club is very successful both in the Russian championships and in international contests.

One of the keys to success is the health centre of the ice hockey club. Since 2009, physicians have successfully relied on the DUOLITH® SD1 «T-Top» shock wave device for the treat-



Alexey Tereshenko, forward of the Russian Olympic ice hockey team in a duel



Treatment with focused shock waves

ment of players. Shock wave therapy has been applied very efficiently to treat players' injuries. Therefore, a DUOLITH® SD1 «ultra» was added to the team's equipment in 2013. Now the ice hockey players are either treated with the DUOLITH® SD1 «ultra» at the health centre or with the mobile DUOLITH® SD1 «T-Top» at the first aid point in the club stadium.

Anton & Victor Ustenko



The Olympic and world champion Yuna Kim from South Korea prepares for the sporting highlights, especially the Winter Olympics in Sochi, with STORZ MEDICAL.



STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

28	ShockNews 2/2013, p. 8	Cancan Ren, triple women's boxing world champion from China	"The Women's Boxing World Champion Succeeds Again" / Cancan Ren, triple women's boxing world champion from China, is fully convinced of radial shock wave treatment with the MASTERPULS®	Radial
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The Women's Boxing World Champion Succeeds Again



Cancan Ren from China, triple women's boxing world champion, was once again successful at the Olympic Games in London in 2012 and won a silver medal in the body-weight class of up to 51 kg. For the treatment of her plantar fasciitis, she is fully convinced of radial shock wave treatment with the MASTERPULS®. The total elimination of pain and the recovery of mobility make training easier for her and enable her to fully focus on the competitions.

Tradewind, China

29	ShockNews 2/2013, p. 8	Taekwondo World Championship in Puebla, Mexico	“Shock Waves for World Champions” / Successful treatment of German Taekwondo fighter Tahir Gülec (first German world champion in 18 years) / Typical Taekwondo injuries	Combined
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Shock Waves for World Champions



Tahir Gülec and Dr Frank Düren are happy about the title of world champion

At the Taekwondo World Championship that took place from 15 to 21 July in Puebla, Mexico, Tahir Gülec from Nuremberg was the first German to become world champion in 18 years. Dr Frank Düren, chief physician of the German

Taekwondo Union, relies on his experience with shock wave therapy when treating the athletes.

In this highly intensive discipline with overhead kicks, muscular »injuries« of all degrees of severity are nothing out of the ordinary. Especially for the treatment of the most common muscular tensions that are sometimes

combined with trigger point symptoms, ESWT is part of the established standard treatment.

Dr Düren especially appreciates the use of the DUOLITH® SD1 »ultra« because the system enables him, on the one hand, to diagnostically differentiate between structural and functional muscle injuries and, on the other hand, to easily treat muscular tensions with radial shock waves and trigger points with focused shock waves. The success is based on the immediate diagnosis and treatment of the occurring muscular problems. Thus, particularly in the time of intensive training before a competition, it is possible to treat muscular problems quickly and effectively and continue with the preparations for the competition without any major delay.

Dr Frank E. Düren
Grassau, Germany

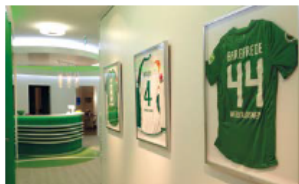
30	ShockNews 1/2013, p. 8	Bayern Munich (football); Figure skating World Championship 2013 in London/Canada; Bobsleigh World Championship 2013 in St. Moritz/Switzerland	“DUOLITH® SD1 »ultra« in High-performance Sports” / Importance of ESWT in professional sports, using examples from three sports / Successful treatment of players of German football club Bayern Munich / Successful treatment of South Korean figure skating star Kim Yuna during World Championship 2013 (gold medal) / Successful treatment of German and Swiss athletes prior to Bobsleigh World Championship 2013	Combined
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DUOLITH® SD1 »ultra« in High-performance Sports



Treatment with focused handpiece

Technological progress in the field of extracorporeal shock wave therapy over the past few years has also effectively increased the range of treatment options for top class athletes. Today, focused shock wave therapy is used to treat a multitude of acute and overuse sporting injuries in order to shorten the inactive periods of athletes.



Prof Dr Knobloch's »SportPraxis«, Hanover

Prof Dr Karsten Knobloch's sports clinic »SportPraxis« has specialized in the treatment of top class athletes suffering from tendon problems. It carried out a study

with 291 runners who run a weekly distance of 65 kilometres. The study showed that Achilles tendon problems were the main overuse injury followed by patellar tendon problems.¹

Professional soccer players often run similar distances on the field considering that a running distance of 10-12 km is covered per match within 90 minutes. This is why soccer players very often suffer from Achilles tendon disorders. In Prof Knobloch's »SportPraxis« power Doppler sonography is used for establishing a diagnosis and a multi-mode treatment is started in which focused shock wave therapy plays a very significant part. Focused shock wave therapy can accompany the athletes during training and competition, which will minimize their inactive periods.

Prof Dr Karsten Knobloch, FACS
 Hanover, Germany

¹ Knobloch K, Yoon U, Vogt PM. Acute and overuse injuries correlated to hours of training in master running athletes. Foot Ankle Int 2008;29(7):671-6.

FC Bayern Munich

Germany's record champion, multiple winner of the Champions League



Dr Volker Braun has recently started to work with the DUOLITH® SD1 »ultra«

Dr Volker Braun is the medical attendant of the FC Bayern Munich II junior team. After having worked with the DUOLITH® SD1 »Tower« for some years, his surgery acquired the new DUOLITH® SD1 »ultra« in December 2012. High user friendliness, technical reliability and an appealing design were the main reasons for choosing a STORZ MEDICAL shock wave system again.

Figure Skating

The new world champion comes from South Korea



Kim Yu-na and Andrew Son (UIC, STORZ MEDICAL partner in South Korea) are happy about her victory

At the 2013 figure skating World Championship in London (Canada), South Korea's Kim Yu-na once again won the gold medal. Thus, she continues her successful course after winning Olympic gold in 2010. For years she has placed her trust in the DUOLITH® SD1 »T-Top«, which accompanies her on her tour around the world.

Bobsleigh World Championship in St. Moritz

Top class athletes trust in shock waves



German bobsleigh team with Kevin Kuske and Thomas Florschütz

An exciting bobsleigh spectacle: The 20th Bobsleigh World Championship in St. Moritz, 22 January – 3 February 2013

Good acceleration during the start phase is of crucial importance: To stand the stress during this phase, bobsleigh athletes do not only require technical skills but also an excellent general athletic fitness. Therefore, bobsleigh athletes often suffer from muscle hardening and Achilles tendonitis. Thanks to the STORZ MEDICAL shock wave treatment, the Swiss pusher Thomas Lamparter was able to start in St. Moritz. He is enthusiastic about the treatment because it allows him to handle his Achilles tendon problems. Together with his pilot Beat Hefti, Thomas Lamparter won the silver medal in the two-man bobsleigh World Championship.

Top pusher Kevin Kuske of the team around pilot Thomas Florschütz was fortunate despite his misfortune: The German athlete, who had received an injury during the bobsleigh World Championship in St. Moritz, could already resume his training in March. »I am glad that shock waves exist. Thus, my big goal, Sochi 2014, is not threatened«, said the fourfold Olympic champion. He has repeatedly suffered from muscular hardening in the thigh and he is convinced of his new DUOLITH® SD1 »ultra« shock wave device.

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

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31	ShockNews 2/2012, p. 6	2012 Summer Olympics in London/England	“Triumphs at the Summer Olympics thanks to STORZ MEDICAL shock wave systems” / Successful treatment of various Chinese, German, Canadian, Korean and Swiss teams	Combined
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1996 Atlanta 2000 Sydney 2004 Athens 2008 Beijing 2012 London



Triumphs at the Summer Olympics thanks to STORZ MEDICAL shock wave systems



1996, Olympic Games in Atlanta: treatment with the MINILITH® SL1

From 25th July until 12th August, athletes from all over the world demonstrated their abilities and performance potential at the 2012 Summer Olympics in London. Now that the games are over, it is worthwhile taking a look behind the scenes. After all, the success achieved by a number of athletes during the Games went hand in hand with the excellent participation of STORZ MEDICAL shock wave systems. In fact, the MASTERPULS® MP100 »elite edition« and the DUOLITH® SD1 »T-Top« helped Chinese, German, Canadian, Korean and Swiss teams to optimise their performance.

The history of shock wave systems involved in Olympic competitions started at the 1996 Olympic Games in Atlanta, when German athletes first received focused shock wave treatment with the STORZ MEDICAL MINILITH® SL1. These were the beginnings of successful shock wave therapy as an »Olympic discipline«. So it was little surprising that the MINILITH® SL1 was taken along to Sydney four years later. Since the 2004 Summer Olympics in Athens, when trampoline athletes as well as tennis and table tennis players relied on the superb effectiveness of the MASTERPULS® MP100, radial shock waves have played a dominating role in the treatment of top-level competitors. At the Beijing 2008 Olympic Games, both therapy modalities (focused and radial shock waves) were



Player of the Korean football team, Olympic bronze medal winner 2012

combined and the DUOLITH® SD1 »T-Top« was used by several teams throughout this unforgettable event – most of all by Chinese top athletes who relied on the performance-boosting effect of the treatment at their home Olympics.

Manfred Schulz
STORZ MEDICAL

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

32	ShockNews 1/2012, p. 9	Trampoline World Championship 2011 in Birmingham/England	“Gold at Trampoline World Championship 2011 with STORZ MEDICAL shock waves” / Successful treatment of German national team	Combined
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Gold at Trampoline World Championship 2011 with STORZ MEDICAL shock waves

At the Trampoline World Championship in Birmingham in November 2011, Germany's top synchronized trampoline pair Anna Dogonadze and Jessica Simon took the synchro gold medal before Canada (silver) and Great Britain (bronze).

By winning gold in the synchro discipline, Germany's trampoline athletes automatically qualified for the World Games in 2013. The women's team with the two »gold girls« and top trampoline athletes Lara Hüninghake and Sarah Eckes also managed to reach the final and eventually finished 5th after having had to interrupt a routine, which cost them precious points.

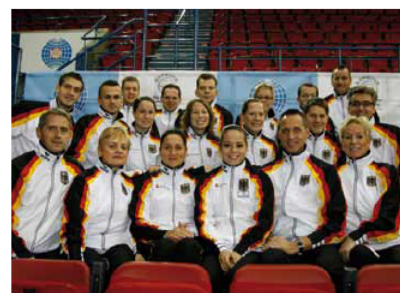
Giving a good performance, Germany's men's synchro trampoline pair Daniel Schmidt and Dennis Luxon qualified for the synchro final and reached a sensational 4th place.

The medical team around Dr med Ralph Dalferth (orthopaedist/trauma surgeon), in charge of the Trampolining Section within the German Gymnastics Association (DTB), has been using the STORZ MEDICAL DUOLITH® SD1 »T-Top« shock wave system for many years on a regular basis. Dr Dalferth explains that based on his experience shock wave therapy is the method of choice to improve rehabilitation and reduce regeneration time in trampoline athletes who, in general, are likely candidates for insertional and other types of tendinopathy.

The entire trampoline team would like to take this opportunity to thank STORZ MEDICAL for making available their DUOLITH® SD1 shock wave system for the competition. The gold medals would not have been possible without the »participation« of STORZ MEDICAL's shock waves.

At the European Trampoline Championship to be held in St. Petersburg this April, STORZ MEDICAL will make available the easy-to-transport MASTERPULS® MP100 shock wave system to ensure that athletes can be treated directly at the competition site and make them fit to score successful results.

> Front row: Anna Dogonadze (3rd from left), Jessica Simon (4th from left); middle row: Dennis Luxon (first from left), Dr med Ralph Dalferth (1st from right); last row: Daniel Schmidt (1st from left)



STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

33	ShockNews 1/2012, p. 9	Swiss rhythmic gymnastics national team	“Swiss rhythmic gymnastics national team: Success with radial shock waves” / Successful treatment of athletes of Swiss rhythmic gymnastics national team / Reference to successful World Championship 2011 (there: successful treatment of pain with RSWT)	Radial
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Swiss rhythmic gymnastics national team: Success with radial shock waves

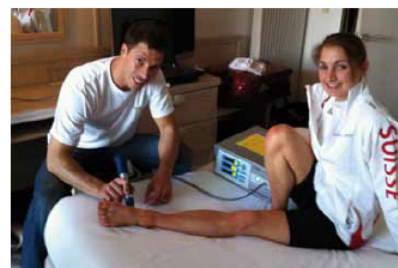
Athletes performing rhythmic gymnastics at world class level require about 30 hours of training per week. While acute injuries occur only very infrequently, repetitive strain injuries account for about 90 to 95% of medical problems reported by rhythmic gymnasts. The body regions most affected are the low back and lower extremities. Painful myogelosis, insertional tendinitis and stress reactions of foot bones are the most frequent reasons that cause athletes to seek medical advice.

Dr med Pascal Vogt: »In my capacity as associate doctor of the Swiss Gymnastics Association and squad doctor of the Swiss rhythmic gymnastics national team, I decided last September to take along, a MASTERPULS® MP100 radial shock wave

system to the Rhythmic Gymnastics World Championship 2011 in Montpellier so that our athletes could be treated directly at the competition site. At that time, the instant pain reduction effects produced by shock waves in the treatment of enthesopathies were well known to me from my daily work as a hospital doctor. So all gymnasts experiencing pain symptoms at the World Championship were treated with radial shock waves. As a result, the use of analgesics could be drastically reduced.

On the day of the competition, all athletes in the team were 100 percent fit. In the end, the Swiss finished 8th overall in the team event and reached a sensational 4th place in the ball final. Recording their best ever result at a World Championship, the

> Dr med Pascal Vogt, MASTERPULS® MP100 treatment



Swiss have consolidated their position among the world's top-ranking rhythmic gymnastics teams.«

Dr med Pascal Vogt
Senior Consultant Orthopaedics/Traumatology, Münsterlingen Cantonal Hospital, Switzerland

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

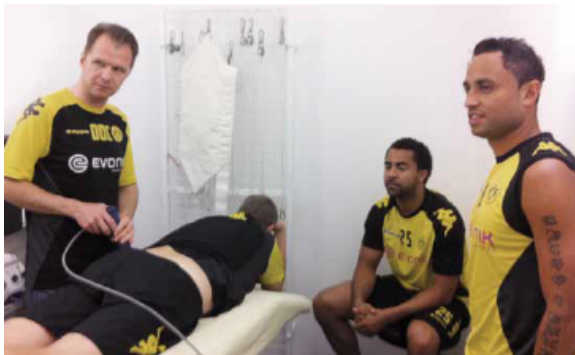
34	ShockNews 1/2012, p. 8	Borussia Dortmund (football)	“BVB - Borussia Dortmund relies on DUOLITH® and MASTERPULS® shock wave therapy for its professional football team” / When it comes to the treatment of its players, the German football club relies on STORZ MEDICAL devices	Combined
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BVB - Borussia Dortmund relies on DUOLITH® and MASTERPULS® shock wave therapy for its professional football team



Dr Braun, team doctor and orthopaedic surgeon of the German football team »BVB« Borussia Dortmund, seven times German football champion and currently at the top of the first league »Bundesliga« relies on the state-of-the-art shock wave therapy systems for optimal treatment of sport-related indications among »BVB« football team players. In his daily routine as team doctor, he uses STORZ MEDICAL shock wave devices with great success both for acute and preventive-curative treatments of myogelosis/ trigger points and tendinitis and for the follow-up treatment of muscle injuries.

Left: Radial shock wave treatment of Sebastian Kehl, German national team player



Dr Markus Braun, BVB team orthopaedic surgeon, treats football players Sebastian Kehl, German national team player, Patrick Owomoyela, German national team player and Antonio da Silva, national team player from Brazil (from left to right).



Antonio da Silva, national team player from Brazil during trigger point treatment with DUOLITH® SD1 »T-Top«. Da Silva is being treated effectively by shock waves for his patellar tendinitis (jumper's knee).



> DUOLITH® SD1 »T-Top«



> MASTERPULS® MP200

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

35	ShockNews 3/2011, p. 5	Summer Universiade 2011 in Shenzhen/China	“MASTERPULS® MP100 »elite edition+« »in action“ / Successful treatment of German and Chinese athletes with MASTERPULS® MP100 during the Summer Universiade 2011 in Shenzhen/China (14 medals for the German team)	Radial
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MASTERPULS® MP100 »elite edition+« »in action«

Winning teams at the Summer Universiade Shenzhen, China count on MASTERPULS® MP100

The 26th Summer Universiade Shenzhen took place from August 12 - 23, 2011. For 10 days more than 12,000 top athletes and their coaches from 152 nations were hosted.

Tradewind, the STORZ MEDICAL partner in China for the office line product portfolio, had successfully participated in the medical equipment tendering project for the Universiade 2011. The Shenzhen Development and Reform Commission purchased a MASTERPULS® MP100 unit and Dr Wang Yulong, chief physician at the Rehabilitation Department of the second people's hospital of Shenzhen, performed the treatments for the athletes

with great success, especially for pain management and the treatment of muscles and tendons.

Moreover, the team of 12 doctors and physical therapists of the General German University Sports Association was also equipped with MASTERPULS® MP100 units. The 118 German top athletes were »treated fit« with MASTERPULS® MP100 and performed 147 starts in 118 contests.

The »MASTERPULS® medal count« was a great success: The German team celebrates 14 medals, two times gold, six times silver and six times bronze.



> Ms Zhang Rong, Tradewind with MASTERPULS® MP100 during Shenzhen Universiade 2011



> Summer Universiade 2011, Shenzhen, China

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

Last update: August 4th, 2020

36	ShockNews 2/2011, p. 6	BNP Paribas Zurich Open 2011 (tennis)	“»Zurich open« – Schulthess clinic and the tennis world count on DUOLITH® SD1” / Successful treatment of muscle and tendon problems of legendary tennis players	Combined
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> Thomas Muster got treated by chief physician Kerstin Warnke

»Zurich open« – Schulthess clinic and the tennis world count on DUOLITH® SD1



An exceptional tennis event:

Since 8 - 12 March 2011, Zurich/Switzerland has finally returned to the map of world tennis – with a worldwide new and unique concept: the »BNP Paribas Zurich Open – where champions meet talents«. Two generations of players: former legendary tennis champions as well as the world's best talents played in March in Zurich in separate round robin formats (analogue to the ATP Masters) and in a combined doubles competition.

Legendary champions like Mark Philippoussis, Tim Henman, Goran Ivanisevic, Henri Leconte, Ivan Lendl, Thomas Muster, Pete Sampras and Michael Stich demonstrated their great skills in Zurich. Standing ovations from the excited spectators in

a crowded venue. Eight of the best U18 talents – based on their position in the ITF junior rankings – also participated in the BNP Paribas Zurich Open.

The competition at the BNP Paribas Zurich Open

Champions and talents competed each in two separate groups of four in a round robin format followed by a small final for third place (second placed of each group) and the final for the championship (first placed of each group).

Another »Champion« of BNP Paribas Zurich Open was the DUOLITH® SD1 »T-Top«. The unit, provided by the reputed Schulthess clinic Zurich and accompanied by Dr Kerstin Warnke was in daily use and most of the legendary champions appreciated the fine treatment of various soft tissue complaints. DUOLITH® SD1 »T-Top« kept them in great shape throughout the whole tournament.

37	ShockNews 1/2011, p. 6	European Trampoline Championships 2010 in Varna/Bulgaria	“German trampoline national team relies on ESWT” / Successful treatment of German trampoline national team / Focus on typical problems of the athletes	Combined
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German trampoline national team relies on ESWT

The European Trampoline Championships took place in Varna, Bulgaria, from 22-25 April 2010. The German national team participated both in the trampoline and the double mini-trampoline competitions. Double mini-trampoline (DMT) is a non-Olympic discipline. A DMT is smaller than a regular trampoline and has a sloped end and a flat bed. The gymnasts run up and jump on to the sloping end and then jump on to the flat part before dismounting on to a mat. Skills are performed during the jumps or as the gymnasts dismount.

Fortunately, there were no acute injuries among the German gymnasts during the competitions. However, especially the men that took part in the mini-trampoline competitions had some trouble in the area of the adductor insertions (caused by running up to the trampoline). The German gymnasts that took part in the regular trampoline competitions experienced troubles due to muscle overuse, for example in the lower back and in the thigh area. One of the members of the women's team had traveled to Varna with an Achillodynia that was at first progressive during the competitions. Each evening after training or competition, the affected athletes were treated with ESWT

(in addition to physiotherapy) in order to ensure their fitness. The Achillodynia and irritations of the adductor insertions were treated with 2,000 pulses at 1.2-1.5 bar. Muscle hardenings and trigger points were treated effectively with up to 5,000 pulses at 1.6-2.0 bar, depending on the size of the painful area.

Despite the fact that both physical and psychological stress increased every day, all members of the German team were able to finish the Championships. No medication was required and the athletes were able to give their very best day after day without feeling any pain. The final results were impressive: the German team won nine medals, among them four gold and three silver medals.

Sabine Arentz

1999 - 2010 > Orthopaedic medical specialist at the Institute for Sports Medicine (SMI), Frankfurt, Germany since 2011 > Orthopaedic medical specialist at the Centre for Sports Orthopaedics in Münsingen (Bern), Switzerland

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

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38	ShockNews 3/2010, p. 5	Bayern Munich (football)	“FC Bayern Munich gets back into the game quickly” / When it comes to the treatment of its players, the German football club relies on STORZ MEDICAL devices	Combined
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FC Bayern Munich gets back into the game quickly

In professional sports it is particularly important to offer highly effective treatment methods. For this reason the Bayern Munich football division uses the innovative DUOLITH® SD1 by STORZ MEDICAL in their medical practice.

As a result of shock wave treatment, our football players are quickly able to resume active training. The treatment of patellar tendinitis illustrates this effect. Players suffering from this overuse injury of the patellar tendon who do not receive shock wave therapy usually have to stop training and playing for several weeks.

Shock waves enable players to resume training immediately.

We have been using the DUOLITH® SD1 for more than a year now, and we were able to expand our treatment options significantly. Users can easily localize points of pain and treat them successfully in just a few treatment sessions. It is important to use shock waves in professional sports, as the application of shock waves is not an anti-doping violation. In our medical practice we also have a mobile system, the MASTERPULS® MP 50 for training camps and matches.

Dr. med. Volker Braun, team doctor of FC Bayern Munich II, published in medicalsports network 03 - 2010 (full article on www.e-dialogue.ch)



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Sources: STORZ MEDICAL publications 2007-2020

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39	ShockNews 3/2010, p. 4	Six Metre European Championship (6mJl) in Brunnen/ Switzerland (sailing)	“Sailing close to the wind with MASTERPULS®” / Successful treatment of typical problems like tennis elbow of the Yacht Adelheid team (sponsored by STORZ MEDICAL)	Radial
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Sailing close to the wind with MASTERPULS®

In our last issue of ShockNews we told you about skipper Anita Hotz and her crew on the STORZ MEDICAL-sponsored yacht »Adelheid«, who took part in the 2010 Six Metre European Championship (6mJl) in Brunnen, Switzerland. Before and during the sports event the crew relied on our MASTERPULS® MP100, which was used to treat conditions like tennis elbow. That way all hands were on

deck when the regatta started on 24 July. Perfect organization and ideal sailing conditions made the regatta a memorable event. In the end, Anita Hotz and her crew came in 7th in a very close competition.



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Sources: STORZ MEDICAL publications 2007-2020

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40	ShockNews 2/2010, p. 4	2010 Winter Olympics in Vancouver/ Canada	“Review Vancouver Olympics” / Review with focus on typical symptoms that were treated during the Winter Olympics	Combined
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Review Vancouver Olympics

Extracorporeal Shock Wave Therapy (ESWT) becomes more and more important in sports medicine and during sports events like the Olympics, especially for pain management and for the treatment of muscles and tendons. For this reason STORZ MEDICAL developed the MASTERPULS® MP100, a small and compact shock wave device with integrated compressor. The unit is on its best way to become standard equipment for many professional sports teams around the world. During the last Olympic Winter Games in Vancouver typical athletes' disorders like painful, stiff shoulder or achillodynia were treated with stationary DUOLITH® SD1 »T-Top« and the easily

transportable MASTERPULS® MP100. Also muscle trigger points, which couldn't be eliminated by massage (most in Quadriceps, Hamstrings and Glutei) were treated with great success. Sportsmen, suffering from low back pain got shock wave therapy to relax the muscles and trigger points. In the same way therapists of professional football teams are using shock wave devices in their daily work to treat indications like patella tip syndrome and muscle trigger points. Athletes treated with either DUOLITH® SD1 or MASTERPULS® devices in Vancouver mainly came from ice hockey, figure skating, bobsleigh, ski jumping, biathlon and down hill skiing disciplines.

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Sources: STORZ MEDICAL publications 2007-2020

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41	ShockNews 2/2010, p. 4	BNP Paribas Zurich Open 2010 (tennis)	“Game, Set, Match, MASTERPULS®!” / Successful treatment of players with chronic and acute symptoms during the tournament	Radial
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»Game, Set, Match, MASTERPULS!«



Tennis legends and the stars of tomorrow came to Zurich, Switzerland, to participate in the Zurich Open 2010, which took place from 9 to 13 March. Former champions like John McEnroe, Stefan Edberg and Goran Ivanisevic demonstrated that they are still great and at the same time very entertaining tennis players while the world's best juniors provided a look into the future of tennis. In a spectacular final, Stefan Edberg beat Goran Ivanisevic 3:6, 6:3, 12:10.



The »Schulthess Klinik«, one of the leading orthopaedic clinics in Europe, was the medical partner of the tournament. The medical staff of the Department of Sports Medicine has been using STORZ MEDICAL shock wave systems for a long time. During the Zurich Open, players with chronic and acute symptoms were successfully treated for pain with the MASTERPULS® MP200.

Effective treatment for chronic and acute pain

Tennis is a highly strenuous sport and injuries are common and frequent. Players are constantly moving, using their legs, feet, wrists and shoulders. Typical problems are radial epicondylitis (tennis elbow), shoulder pain (e.g. supraspinatus tendinopathy), achilles tendon pain and patellar tendonitis (jumper's knee). Many of the best players in the world are suffering from these injuries, a well-known example being Rafael Nadal, who has fought many battles against patellar tendonitis during his career.

For orthopaedic specialists, extracorporeal shock wave therapy is an innovative and effective way of treating typical tennis injuries. As the method is non-invasive, the patient's pain can be eliminated or alleviated without an operation, thus making anaesthesia and hospitalization unnecessary.

The »Schulthess Klinik« will continue to use STORZ MEDICAL shock wave systems during major sports events in Switzerland, the next one being the Gstaad Grand Slam, where the world's best beach volleyball teams will compete from 6-11 July 2010.

STORZ MEDICAL in Professional Sports

Sources: STORZ MEDICAL publications 2007-2020

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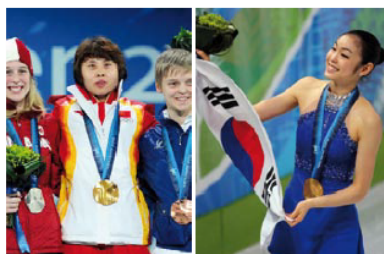
42	ShockNews 1/2010, p. 4	2010 Winter Olympics in Vancouver/Canada	“Storz Medical awarded as »Friends of the Olympic Games“ / Successful treatment of Canadian Ice Hockey team (gold medal) / Successful treatment of Canadian bobsleigh team / Successful treatment of South Korean figure skating star Kim Yuna (gold medal) / Successful treatment of Chinese short track team (4 gold medals)	Combined
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STORZ MEDICAL awarded as »Friends of the Olympic Games«



Helping athletes reach the podium: Team Canada relies on DUOLITH® SD1 and MASTERPULS® LINE

Ski jumping, cross-country, ice hockey: from February 12-28 the world's best winter athletes gathered in Vancouver, Canada for the 2010 Olympic Games. Athletes from over 80 countries inspired both the live audience and the billions of television viewers. Among the winners: STORZ MEDICAL and long-time business partner REMINGTON MEDICAL!



> Gold medallists: short track champion Meng Wang from China and figure skating superstar Yu-Na Kim from South Korea

Both companies were recognized by the Olympic Organizing Committee as »Friends of the Games« for equipping the medical infrastructure with shock wave systems.

Outstanding performances due to effective treatment

Since 2007 Robert Remington, President of REMINGTON MEDICAL, has been working very closely with »Chief Medical Officer« of Olympic Winter Games Dr. Jack Taunton. This cooperation was crowned during the Winter Games when STORZ MEDICAL and REMINGTON MEDICAL supported the Canadian team. Shock wave systems were installed in the Olympic Villages in Vancouver and Whistler, where they were used to treat the ice hockey team, the bobsleigh team and all other athletes.

Chief Therapist Marc Rizzardo treated injuries and acute pain with the DUOLITH® SD1 »T-Top« and the new MASTERPULS® MP100 »Elite«. In the end Canada set a new Olympic gold

record when the men's ice hockey team captured Canada's 14th gold medal in a dramatic final against the U.S. on the last day of the Games.

However, STORZ MEDICAL had even more reasons to celebrate as several other athletes who rely on our innovative shock wave systems were among the winners. The South Korean figure skating superstar Yu-Na Kim, presented in ShockNews 01/09, won the Olympic women's figure skating title with a stunning performance and a world record score. China's »golden girls«, who were treated with a MASTERPULS® MP100 »Elite« during the Olympics, dominated the short track events and won all four titles. On top of winning the 3000 m relay in world record time, Meng Wang triumphed in the 500 m and 1000 m, while Yang Zhou won the 1500 m.

In our next ShockNews we will focus on typical sports injuries that occurred during the Olympics and on how they can successfully be treated with shock waves.

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Sources: STORZ MEDICAL publications 2007-2020

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43	ShockNews 2/2009, p. 4	Dakar Rally 2009 (racing), Hardy Racing Team	“Across the finish line with the help of shock waves” / Fast and effective treatment of Hardy Racing Team drivers during the “world’s toughest off-road race” / The most frequent symptoms were shoulder or neck pain as well as elbow pain	Radial
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Across the finish line with the help of shock waves

STORZ MEDICAL’s MASTERPULS® MP50 at the Dakar Rally 2009. The world’s toughest off-road race, the Dakar Rally was held in South America this year for the first time. 530 racing teams from 49 countries met in Buenos Aires, Argentina, to compete in the legendary race. STORZ MEDICAL supported the Hardy Racing Team and their drivers, Jérôme Hardy und Frédéric Becart, for two exciting weeks.

One piece of equipment that was always aboard their Mitsubishi Pajero: the MASTERPULS® MP50. The device became an important factor for success and contributed to the team’s good position in the overall standings.

Over the Andes, through the Atacama desert and across the Pampas: Covering

almost 10,000 kilometres on difficult terrain, the rally poses an enormous challenge for the drivers and their teams. Driving on dirt roads and rocky ground for hundreds of kilometres each day put man and machine to the test. Excellent medical support in between the stages of the race is therefore crucial.

The compact MASTERPULS® MP50 proved to be the perfect choice – the drivers and their teams were efficiently and successfully treated for pain. The most frequent symptoms were shoulder or neck pain as well as elbow pain.

80 TV channels broadcasted the Dakar Rally 2009 with the STORZ MEDICAL logo in 189 countries.

HUMANE TECHNOLOGY – TECHNOLOGY FOR PEOPLE

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