

# SPARK OF LIFE®

Orchestrating Music of Healing with Shock Wave

Newsletter 2021/2

## Editorial



Autumn – the season of harvest. At MTS, we are thankful for this year's achievement, having earned praises and awards. At ISMST 2021, studies with MTS technology won numerous awards. ISMST Awards were presented for four research papers,

and the effectiveness of the MTS Spark Wave was highlighted as an example: Out of six total awards announced, four awards were won.

With this issue, we would like to share with you about the latest scientific news, especially on wound healing. Did you know that Spark Wave has a direct influence on our immune cells? In this issue you will find out about macrophage activation and general biostimulatory effects of Spark Waves.

A patient suffering from burns or diabetic feet ulcers? Spark Wave Therapy delivers the best results in vascular surgery!

Read about our interview with Dr. Rodoplu from Istanbul! It is fascinating to witness how profoundly and fundamentally Spark

Wave affects cell physiological processes in the body!

Take a look behind the scenes, right into the heart of the MTS Medical! We are an agile and dynamic company with many young and bright talents. In this newsletter we would like to present you the four new faces behind the MTS.

With this in mind: Enjoy the reading as we have put together an exciting newsletter for you!



Nikolaus Hopfenzitz,  
CEO MTS Medical

## ISMST 2021: Four Congress Awards go to Studies with Spark Wave Devices



From left: CEO Nikolaus Hopfenzitz, Dr. Joos

Many researchers in the field of shockwave therapy use Spark Wave Technology from MTS. At ISMST 2021 (International Society for Medical Shockwave Treatment) in Vienna, studies using Spark Wave devices won four of the six congress awards. The main criteria evaluated were the

degree of innovation, the medical benefits and the quality of the applied methods.

The first place for basic research was awarded to Dr. Jakob Hirsch and his team with the study: „miR-19a-3P Containing Exosomes Improve Function of Ischemic Myocardium upon Shockwave Therapy“. The study showed that Spark Wave leads to the release of exosomes and thus causes regeneration of the heart muscle in ischaemic disease.

The second prize in basic research was awarded to Dr. Felix Nägele and his team- as yet unpublished - studies: „Hippo/YAP/TAZ Mediates Angiogenic Response And Exosome Release Upon SWT“ and „Therapeutic Transdifferentiation of fibroblasts to Functional Endothelial Cells Upon Shockwave Therapy“.

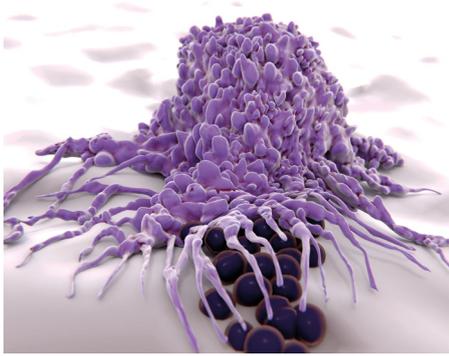
The first prize for the best scientific poster was awarded to Sophia Lechner with the publication: „Defining a Therapeutic Range for Regeneration of Ischemic Myocardium Via Shockwaves“.

Dr Erika Joos received the second prize in clinical research with her latest publication on the regenerative effect of Spark Wave on lymphoedema after breast cancer surgery: „Extracorporeal Shockwave Therapy As Additional Treatment for Lymphedema After Breast Cancer And Lymphatic Surgery“.

MTS is excited about all the good publications and congratulates all the award winners! Electrohydraulic Spark Wave Therapy is a leader in shock wave therapy and is achieving the best results in research worldwide.



# Macrophages: Small Immune Cells Working on Behalf of Spark Wave



Holsapple et al., low intensity shockwave treatment modulates macrophage functions beneficial to healing chronic wounds, Int J Mol Sci. 2021 Jul 22;22(15):7844

A recent paper by Jason Holsapple in the International Journal of Molecular Science shows that macrophages change their behaviour when exposed to Spark Waves. Macrophages are part of the white blood cell family. They are relatively large cells that work in the service of the immune system. They are responsible for inflammation as well as for the healing process. At the same time, macrophages neutralize bacteria and recy-

cle the body's own cells. The study shows that Spark Wave Therapy causes a significant change in macrophage activity. Until now, the wound healing mechanism of Spark Wave was generally well understood. Holsapple's latest discovery unravels additional details about the underlying mechanisms, taking our scientific understanding to a new height.

Holsapple's investigation takes place at both the cellular and organic level. Firstly, the researchers studied pure macrophage cell cultures from mice - and secondly, they evaluated biopsies from poorly healing wounds in humans. Both were examined for shock wave-induced changes. It was known so far that chronic wounds suffer from a persistent inflammatory response, and that macrophages play a key role in this context. It was also known that macrophages are pressure sensitive and respond to mechanical stimuli, such as tissue stretching or electrical impulses. Holsapple's work re-

veals that Spark Wave also has a significant effect on macrophages. The effect leads to a different phenotype, or appearance, in macrophages: This is referred to as a shift from fewer M1 macrophages to more M2 macrophages. M1 macrophages activate pro-inflammatory and tissue-damaging effects, whereas M2 macrophages induce tissue-regenerating. The reason for poorly healing wounds is that too many macrophages remained in M1 mode. The study shows how this vicious circle is interrupted with Spark Wave. The well-known interactions of shock wave-induced responses to regeneration in wound healing disorders are not yet fully explained. Holsapple however demonstrated for the first time that shock wave therapy leads to a change in macrophage activity and that macrophages therefore play an essential role in wound healing. This is a small but important part of the puzzle that fits into the picture of previous findings.

## Mind Your Feet!



Patients suffering from diabetes know that they have to pay closer attention to their feet. Diabetes, especially a poorly controlled diabetes, leads to increased blood sugar levels in the body. This may subsequently lead to reduced blood flow and nerve

damages in the foot. Patients usually report, as if they are "walking on cotton", a constant feeling of a „tingling sensation“. This results in the loss of sensory abilities in the feet, such as the reaction to pain or heat. In particular, insufficiently controlled diabetes can lead to non-healing wounds in the feet. Diabetics then suffer not only from the stresses of the underlying disease, but also from delayed wound healing. An unattended chronic diabetic foot syndrome may lead to an open wound that is vulnerable to bacterial infection and in the worst case, amputation might be required.

However, what if the foot ulcer is already an existing condition? How can patients regain their quality of

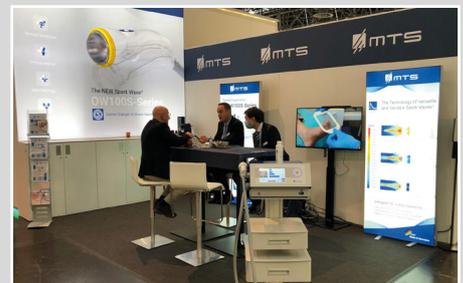
life and health? There are numerous therapeutic approaches, but the expected improvement is not always obtained. Spark Wave Therapy from MTS recently received FDA approval in the USA and it offers not only a good alternative to creams and pressure plasters, but also the chance of sustainable regeneration: If the Spark Wave is applied directly to the wound, it activates biostimulative effect. In other words, the cells produce increased cell messengers that activate cell growth and healing. Stem cells are mobilized, bacteria are killed, blood flow is improved and new blood vessels are formed. Spark Waves activate a series of regenerative factors that can truly change

## Throwbacks We had with You

This year, MTS had the opportunity to participate at several major medical trade fairs and have in person dialogues with various distributors and physicians. Here are some of the great moments we had this year and we are looking forward to more active participation and involvement in 2022. We hope to see you there!



ISMST, Vienna, 3.-6.11.2021



Medica, Düsseldorf, 15.-18.11.2021

the game, triggering previously unused healing responses! So before you consider the risk of amputation due to a diabetic foot ulcer, consider

whether Spark Wave is a better alternative. MTS Medical is happy to support all users with information and would like to encourage you to talk to

your patients about shock wave therapy as a scientifically based therapy. It will change your daily practice and the lives of your patients! 

## Turkish Vascular Surgeon, Enthusiastic about dermagold100® – An Interview with Dr. Rodoplu



“Since the first day I started using dermagold100, I believed that shock-wave technology is going to be very

beneficial in healing wounds for my own patients. Today, I am experiencing results far beyond what I thought and expected,” says Dr. Rodoplu, a leading cardiovascular and thoracic surgeon in Turkey. Dr. Rodoplu is well-known far beyond the borders of the Turkish-speaking world for his successful treatments of vascular diseases. In particular, when treating diabetic foot ulcers, Dr. Rodoplu achieves faster and more effective results with Spark Wave. “I strongly recommend my physician colleagues to apply dermagold100 in the treatment of their patients.” Dr. Rodoplu studied medicine at Bursa Uludag University.

After successfully completing his residency at Bursa High Specialization Training and Research Hospital, Dr. Rodoplu established the Depart-

ment of Cardiovascular Surgery at the private Yalova Hospital. Today, he is practicing at Istanbul Atsehir Florence Nightingale Hospital. Dr. Rodoplu carries out his profession with „love and joy.“ It is a challenging job, especially when it comes to attending high-risk patients. However, it is a job which is very satisfying for him, particularly when it comes to ensuring good treatment quality. Dr. Rodoplu is an expert in the treatment of vascular diseases and monitors the technological progress very closely, using numerous latest innovative technologies in his clinic. MTS is proud to welcome Dr. Rodoplu, one of the renowned specialists, among us a part of the Spark Wave User Community. We will keep you updated on the latest developments of MTS Spark Wave in the different countries. 

## The New Faces of Sales Department – At Your Service!



From left: Stefan Wegner, Angela Kretzschmar, Livia Rodi, Michael Pfersich

These are the new “sparks” in the sales department: Michael Pfersich as the head of sales and Stefan Wegner, responsible for sales and coordi-

nation in the Eastern European market. Two well-trained and experienced colleagues, mainly engaged in communication and in contact with end customers and sales partners.

Additionally, we have Livia Rodi on the team to provide support as a sales assistant. With many years of experience in the tourism industry, she is the right person for international communication.

Finally, replacing our long-time colleague Patricia Zotz, our fourth new employee comes into play: Angela Kretzschmar heads the customer service and she is your voice on the phone, when attending customer

orders and requests. Michael Pfersich, Stefan Wegner and Livia Rodi will actively represent us at international trade fairs and with their qualification and competence, our customers continue to be well looked after. Travels and business interactions have been reduced in the past year. This gave Stefan Wegner and Michael Pfersich, Livia Rodi and Angela Kretzschmar time and opportunity to familiarize themselves as a new team and they are ready to support our customers and distributors worldwide in terms of products, services and innovations. Our sales team will be happy to assist you! 



Digest, Baden-Baden, 10.-11.09.2021

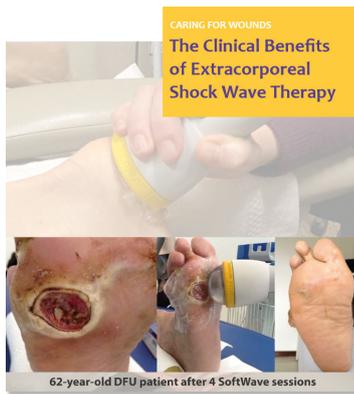


DGU, Stuttgart, 15.-18.09.2021



CMEF, Shanghai, 13.-16.05.2021

# dermagold100® - Pure Magic for Non-Healing Wounds



The FDA approval of dermagold100 made headlines:

The well-known internet portal [www.woundsource.com](http://www.woundsource.com) brought an exciting topic to the point - How can poorly healing wounds be treated effectively? There are various methods of wound healing, but it is also known that they are not always effective. The question is: Is there a therapy with a better prognosis than the

previous ones?

Spark Wave Therapy activates a broad field of healing responds in related indications. The spectrum ranges from kidney stones lithotripsy and the treatment of chronic tendonitis to the therapy of erectile dysfunction.

SoftWaveTRT, exclusive partner of MTS in the USA, now brings the biostimulative effect of shock waves to the popular portal with general study results and three individual case treatments. Conclusion: The unfocused extracorporeal electrohydraulic shock wave therapy can heal poorly healing wounds (complementary or without further therapeutics) effectively with long-lasting positive results. The publication „The Clinical Benefits of Extracorporeal Shock Wave Therapy“ clearly demonstrates the benefits and mode of action of shock wave therapy. For diabetic foot and 2nd degree burn wounds, shock wave therapy is a method without side effects

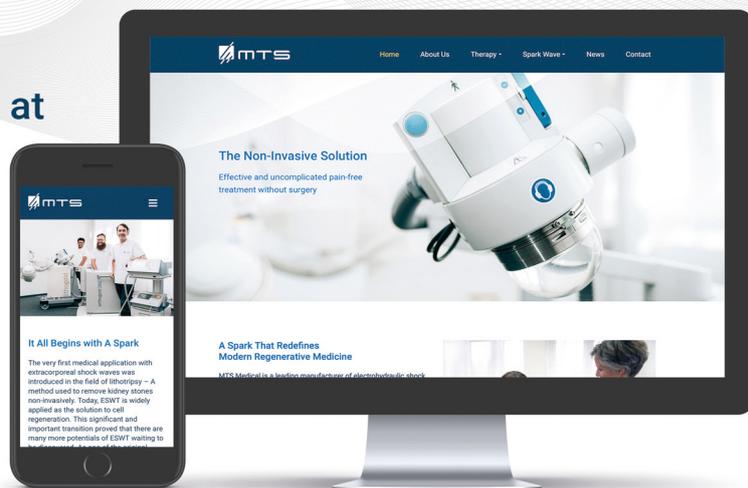
- and at a relatively low cost.

But how does the shock wave work and what does it do to the injured skin? There are four areas which define the successful mode of action of the Spark Wave: inflammation, infection, cell death and blood circulation. Unfocused shock waves can down-regulate the inflammatory process and change macrophage activity. Furthermore, cell messengers are released and cell growth is stimulated. Spark Wave has a bactericidal effect and prevents secondary infections. Cell death is down-regulated and the blood flow to the damaged tissue is stimulated and improved. In addition, the ESWT has a pain-sedating effect and reduces the skin irritation of bad burns.

The dermagold100 with its unfocused electrohydraulic applicator is thus more than just an insider tip in medical policy. It is an easy-to-use therapy with virtually no side effects. Pure magic for non-healing wounds!



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For regular newsletter subscription, please contact [info@mts-medical.com](mailto:info@mts-medical.com). MTS Medical manufactures Spark Wave Therapy Systems for shock wave applications in fields of

orthopaedics, traumatology, wound healing and urology - even in areas that are difficult to treat. MTS Medical is one of the pioneers in the field of non-invasive regenerative medicine.