

# SPARK OF LIFE®

*Orchestrating Music of Healing with Spark Wave*

Newsletter 2022/1

## Editorial

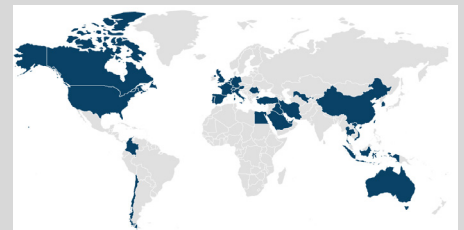
### Orchestrating the Sound of Healing with Spark Wave - New Production Facilities



Greetings from Lake Constance, the origin of shock wave technology! The motto of the new newsletter is: Orchestrating the Sound of Healing. Thanks to the positive business development of the last two years, as well as the constantly increasing demand from our customers, we were able to maintain our growth course despite the pandemic-related restrictions. An

important contribution to the increasing demand has been made by our co-branding partnerships. In order to meet the demands of these customers, we have greatly expanded our manufacturing operations and recently moved into a new production facility in close proximity to our main building. The new facility hall now houses the complete family of the OW100 production line, including quality control with final inspection and logistics. MTS Medical has thus created the conditions for doubling its production capacity. In addition to expansion, the goal is to meet increasing global demands as well as provide agile product capacities. With this issue, we would like to continue to provide you with insights into the broad field of sexual medicine. We would like to invite you to read this news-

letter and hope that you will learn a lot of interesting things!



Global MTS Medical Network!



Nikolaus Hopfenzitz  
CEO MTS Medical

## Innovation for Men's Sexual Health

We would like to present an innovative research study that focuses on penile rehabilitation after radical prostatectomy. The sophisticated study by Karakose<sup>1</sup> et al. highlights the efficacy and safety of extracorporeal shock wave therapy in the treatment of erectile dysfunction, as well as in the prevention of urinary incontinence after prostate cancer surgery. Patients treated with shock waves and tadalafil after surgery showed significant improvements in the International Index of Erectile Function, as well as a significant decrease in the rate of incontinence, compared to the group that did not receive shock wave therapy. The underlying mechanism of action was investigated by Prof. Tom Lue and his research group at California University back in 2016<sup>2</sup>. He was able to show that Spark Wave Therapy can improve the regeneration of nerves after trauma to the pelvic floor.



He achieved this effect using the experimental device of MTS OW 180. The regeneration mechanism is also associated with stem cell migration and nerve cell repair. ESWT induces recruitment of endogenous progenitor cells and leads to angiogenesis, as well as tissue and nerve formation in a rat model of pelvic neurovascular injury. The urogold100 device

is particularly well suited for urogenital indications due to the unfocused Soft-Wave applicator OP155 and is also used for chronic pelvic pain. This study shows that in the future the application in the area of the pelvic floor will also be aimed at the rehabilitation after prostatectomy.

- 1 Karakose, Ayhan, and Yasin Yitgin. „Penile rehabilitation with low-intensity extracorporeal shock wave therapy in patients after prostate cancer surgery. Early physiological changes and postoperative follow-up outcomes.“ *International Journal of Clinical Practice* 75.12 (2021): e14804.
- 2 Li, Huixi, et al. „Low-energy shock wave therapy ameliorates erectile dysfunction in a pelvic neurovascular injuries rat model.“ *The journal of sexual medicine* 13.1 (2016): 22-32.

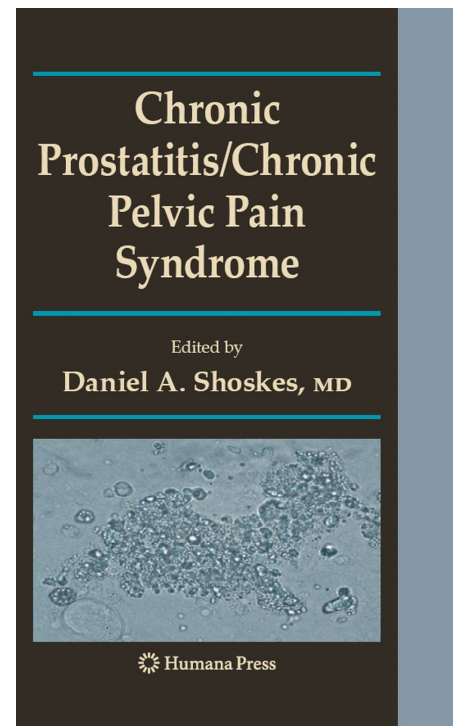
# What is CPPS?

A book on chronic prostatitis was published in 2008 by Dr. Daniel A. Shoskes, world-renowned urologist, expert on CPPS from Cleveland, Ohio. He has written a comprehensive work on the subject. In "Chronic Prostatitis / Chronic Pelvic Pain Syndrome", Shoskes differentiates the four categories of prostatitis. Acute, chronic, bacterial CPPS and asymptomatic inflammation. Contributing physicians, psychologists and pain specialists give the reader new approaches to help patients with CPPS. There is no standardized therapy. By definition, chronic pelvic pain, or CPPS, is a pelvic pain condition that primarily affects men, but also women, and often has a significant impact on quality of life. Cause for this pain condition, can be for example psychological reasons, but also a dysfunction of the immune system or nervous system. Extracorporeal shock wave therapy (ESWT) also occupies an increasingly important place as one of the effective and safe treatment alternatives

for CPPS. Shoskes et al. 2018<sup>2</sup> showed that treatment with urogold100 can lead to a symptom relief. Ramon et al. also presented their placebo-controlled study at the 20th ISMST Congress in San Sebastian, Spain<sup>3</sup>, which achieved significant improvement in pain as well as quality of life.



- 1 Shoskes, Daniel A., ed. *Chronic prostatitis/chronic pelvic pain syndrome*. Springer Science & Business Media, 2008.
- 2 Shoskes, D., and B. Mooney. „329 Case series of low intensity shock wave therapy for men with chronic prostatitis/chronic pelvic pain syndrome.“ *The Journal of Sexual Medicine* 15.7 (2018): S257-S258.
- 3 Ramon et al., Hospital Quiron Barcelona, Spain. 20th ISMST Congress in San Sebastian, Spain. Poster Session.



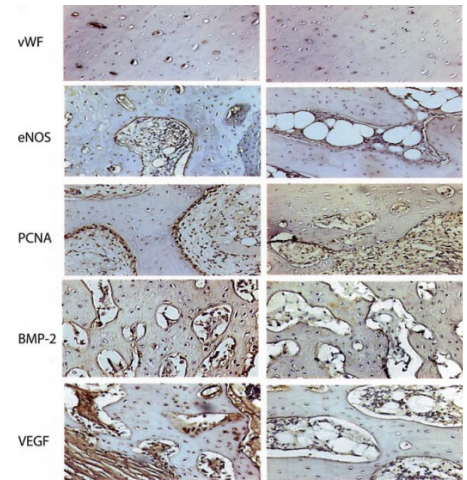
# Working Mechanism of the urogold100®

With our Spark Waves, we have developed a specific, particularly effective type of shock wave that plays a unique role in tissue regeneration. The underlying mechanism of the urogold100 works via an electrohydraulic generation principle, which generates the acoustic sound waves through highvoltage electrodes in an underwater explosion<sup>1</sup>. The shock waves generate physical shear forces that deliver the highest possible amounts of total biologically effective energy to the target area. This physical energy produces a mechanical simulation which is recognized by the mechanoreceptors of the cell and transduced into various cellular responses. These responses include promotion of endogenous production of growth factors (VEGF, eNOS, PCNA, etc.), promo-

tion of blood circulation, development of new blood vessels (angiogenesis), and activation of stem cell migration. In addition, the anti-inflammatory as well as antibacterial effect of Spark Waves in combination with various other biological regeneration processes supports the natural self-healing of diseased tissue. The effectiveness of Spark Wave Therapy has been extensively proven in clinical studies.



- 1 Saffon, José Pablo, et al. „Effectiveness of Shock Wave Therapy: Implementation of a Soft Wide Focus Applicator in Patients with Erectile Dysfunction.“ *The Journal of Sexual Medicine* 14.5 (2017): e330.



Numbers of neo-vessels and cells with positive eNOS, BMP-2, VEGF and PCNA expressions are significantly higher in high-energy shock wave group than control group.

Wang et al. (2006): *Biological Mechanisms of Musculoskeletal Shockwaves*. Newsletter (1) of the International Society for Musculoskeletal Shockwaves (ISMST), p. 8.

## ESWL more cost-effective than URS

Did you know that ureteroscopy (URS) is not a costeffective intervention for the initial treatment of kidney stones <10 mm? The huge magnitude of the cost difference between URS and extracorporeal shock wave lithotripsy (ESWL) suggests that ESWL should always be the first-line treatment. The Royal Liverpool University Hospital et al. published an interesting study in

March 2020<sup>1</sup> highlighting the economic benefits of ESWL for the disintegration of kidney stones.

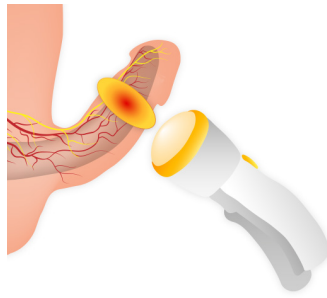
- 1 Constanti, Margaret, et al. „Cost analysis of ureteroscopy (URS) vs extracorporeal shockwave lithotripsy (ESWL) in the management of ureteric stones< 10 mm in adults: a UK perspective.“ *BJU international* 125.3 (2020): 457-466.



MTS Medical lithogold380®

# Premature Ejaculation (PE) - Is Spark Wave an Option for the Future, Dr. Goldstein?

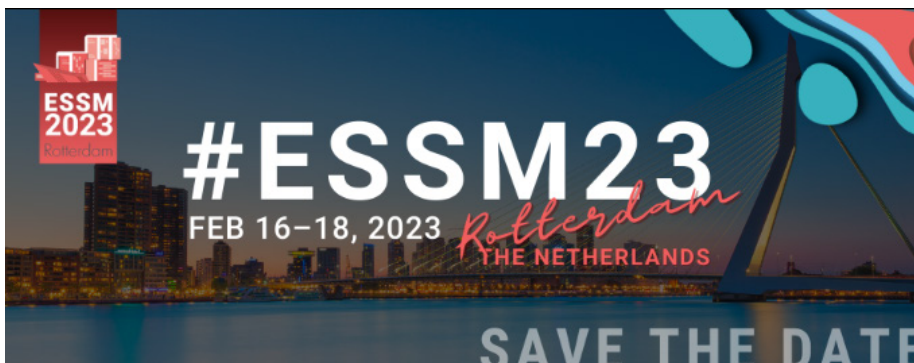
Dr. Goldstein and his team published a study in the Journal for Sexual Medicine in 2021<sup>1</sup> that addressed a novel use of the urogold100 shock wave device. In his study, he found that the sensitivity to shock waves of patients with premature ejaculation (PE) was massively different from patients without PE, providing a new, objective indicator tool for dysesthesia/hypersensitivity of the penis. As a further effect, he showed that the use of the urogold100 with the SoftWave applicator OP155 leads to a reduction in sensitivity. Further clinical studies should show whether low-energy ESWT, which has very few side effects, can be developed as a treatment option for these patients. Existing therapies for PE are unfortunately very limited and many patients suffer from this problem for a lifetime. 🚩



PE treatment with the patented unfocused applicator SoftWave OP155.

1 Uloko, M., et al. „041 Novel Use of a Shockwave Device for Energy Flux Density Threshold Testing of the Distal Ventral Erect Penile Shaft as a Marker of Penile Dysesthesia/Hypersensitivity Associated with Premature Ejaculation.“ *The Journal of Sexual Medicine* 18.3 (2021): S23.

## ESSM - Your Platform for Sexual Medicine!



This year's 23rd virtual ESSM (European Society of Sexual Medicine) conference was held in mid-February. There was a lively exchange about everything that is on the rise: latest research articles and cutting-edge technologies from world-renowned experts. On the homepage, [www.ESSM.org](http://www.ESSM.org) you will find interesting medical

publications related to the topics of sexual medicine. Everyone, whether an individual or a professional, can benefit from it! The ESSM is the major professional society in Europe for the advancement of research and education in the field of sexual medicine. They hold regular congresses in changing European cities. The ESSM is

also committed to raising wide awareness about the issues of sexual medicine in politics and among the general public. Under the leadership of Prof. Dr. Carlo Bettocchi, the society has noticeably increased its activities despite the pandemic. MTS Medical has been attending the congresses for the past 7 years and this year we were involved again online. Some of the current topics were for example the treatment of male erectile dysfunction, and female arousal disorders. Spark Wave Therapy addresses physiological causes and activates regeneration in the urogenital area. For patients suffering from erectile dysfunction or chronic pelvic pain, Spark Wave Therapy is an effective, non-invasive technology! 🚩

### MDR – Medical Device Regulation

The MTS Medical team is proud of the successful TÜV quality audit, which took place in April 2022 according to the new Medical Device Regulation (MDR). The new regulatory framework also requires increased transparency for clinical evaluation and more intensive collaboration between users and the manufacturer.

To this end, we will conduct regular user surveys

in the future to obtain up-to-date feedback on quality, mode of action and side effects. Your future participation as a user is therefore very valuable to us!



MTS Spark Wave Therapy Systems

# Website Relaunch

User-friendly, innovative and informative our new website! The MTS Medical website has been redesigned to provide physicians, distributors and patients with a broad band of specialized knowledge. We put special emphasis on making communication and up-to-date information more easily accessible for you. For example, you can make a consultation appointment directly on our website. Furthermore, you have the opportunity to find out about upcoming events. Via the „News“ section, you can view our current Facebook posts without being a member yourself. In addition to the current posts, you will also find all newsletters here. 🚩



# Night of Science

As a member of Bio Lago, MTS Medical participated in the Long Night of Science this year. This event is organized by the universities of the cities Constance and Kreuzlingen. From the afternoon until late at night there was a lively interest of the approx. 5000-6000 visitors. The functioning of shock waves and the fields of application were the subjects of discussion. Bio Lago represents the association of companies in the field of biotechnology and medical technology at Lake Constance. The cluster spans three countries: Austria, Switzerland and Germany. The connection to the scientific institutions

of the city of Constance is a tradition for MTS Medical. Students regularly write their thesis at MTS and are so enthusiastic about the technology that they end up staying with us for several years. The cooperation with the University Chair of Power Electronics has also supported us repeatedly in the constant innovation and optimization of our technology. Constance is a border town to Switzerland, so it is easy to involve the experts from the famous materials testing institute Empa in case of any questions. It is not without reason that this region is considered the origin of shock waves, where

the first kidney stone disintegrations were carried out 45 years ago by the company Dornier Flugzeugbau. 🚩



# Inauguration of the New Production Facilities



## Impressum

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MTS Medical is one of the pioneers  
in the field of non-invasive regene-  
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