

SHOCKWAVE THERAPY IN UROLOGY

ALL YOU NEED TO KNOW IN ONE PLACE



CONTENT

- Men's health
- Technology background
- Clinical background
- Therapy guide
- Hands-on
- Product features & configurations
- Appendix



This presentation is an extended application of shockwave in urology; for a detailed explanation of technical background and parameters, please download the Product Medical presentation from [Extranet](#).



I. MEN'S HEALTH



MEN'S HEALTH

- **50% of men** are affected with **erectile dysfunction (ED)** at the age of 50
- **Chronic pelvic pain syndrome (CPPS)** is the most common in men **below 50** and accounts for **90% of prostatitis cases**



KUBIN M. et al: Epidemiology of Erectile Dysfunction
SMITH C.P.: Man Chronic Pelvic Pain: An Update

MEN'S HEALTH

ED TREATMENT OPTIONS

- **Medication**
 - potential side-effects, cardiac patients excluded
- **Vacuum constriction devices**
 - risk of bruising and numbness, only temporary solution
- **Surgery**
 - Invasive procedure with risk of complications (e.g. urethral, perforation, loss of sensitivity, infection)

MEN'S HEALTH

CPPS TREATMENT OPTIONS

- **Medication**
 - antibiotics, NSAIDs, α -blockers (might cause gastrointestinal side-effects and cardiovascular loading)
- **Pelvic floor physical therapy**
 - time consuming and often uncomfortable procedures



SOLUTION FOR MEN'S HEALTH

SHOCKWAVE THERAPY

- Non-invasive and side-effects free treatment for
 - *Erectile dysfunction (ED)*
 - *Chronic pelvic pain syndrome (CPPS)*
 - *Peyronie's disease*
 - *Benign prostatic hyperplasia*
 - *Bacterial prostatitis*



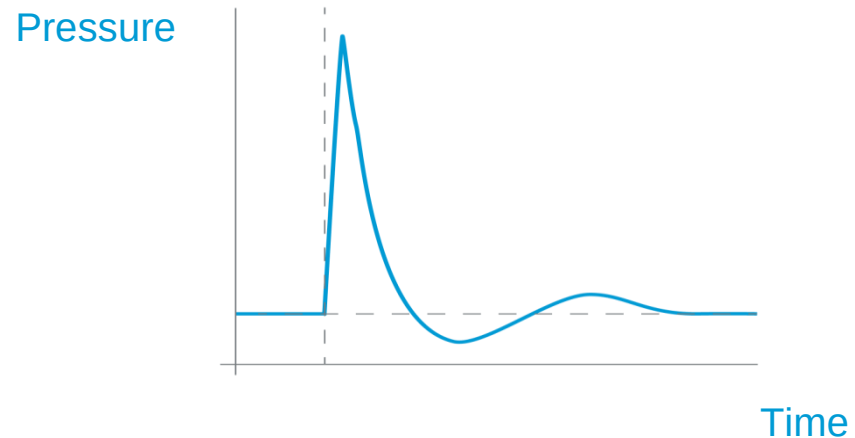
II. TECHNOLOGY BACKGROUND



TECHNOLOGY BACKGROUND

DEFINITION OF A SHOCKWAVE

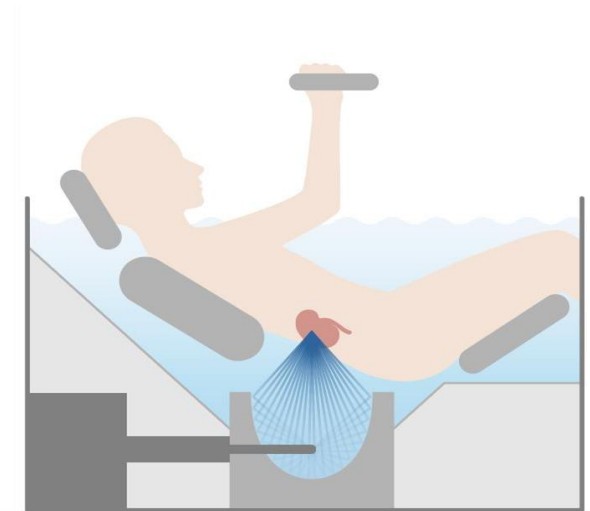
- Shockwave is characterized by **the fast and high rise of positive pressure** followed by a longer period of decreasing pressure.
- Shockwaves are able to carry **high energy** into the patient's body.



TECHNOLOGY BACKGROUND

THE USE OF SHOCKWAVE IN UROLOGY

- **Extracorporeal shockwave therapy (ESWT)** was firstly used in 1980's for **kidney stone lithotripsy**.
- Shockwave can be used to treat **chronic disorders of the urogenital system** and provoke **reparation processes**.



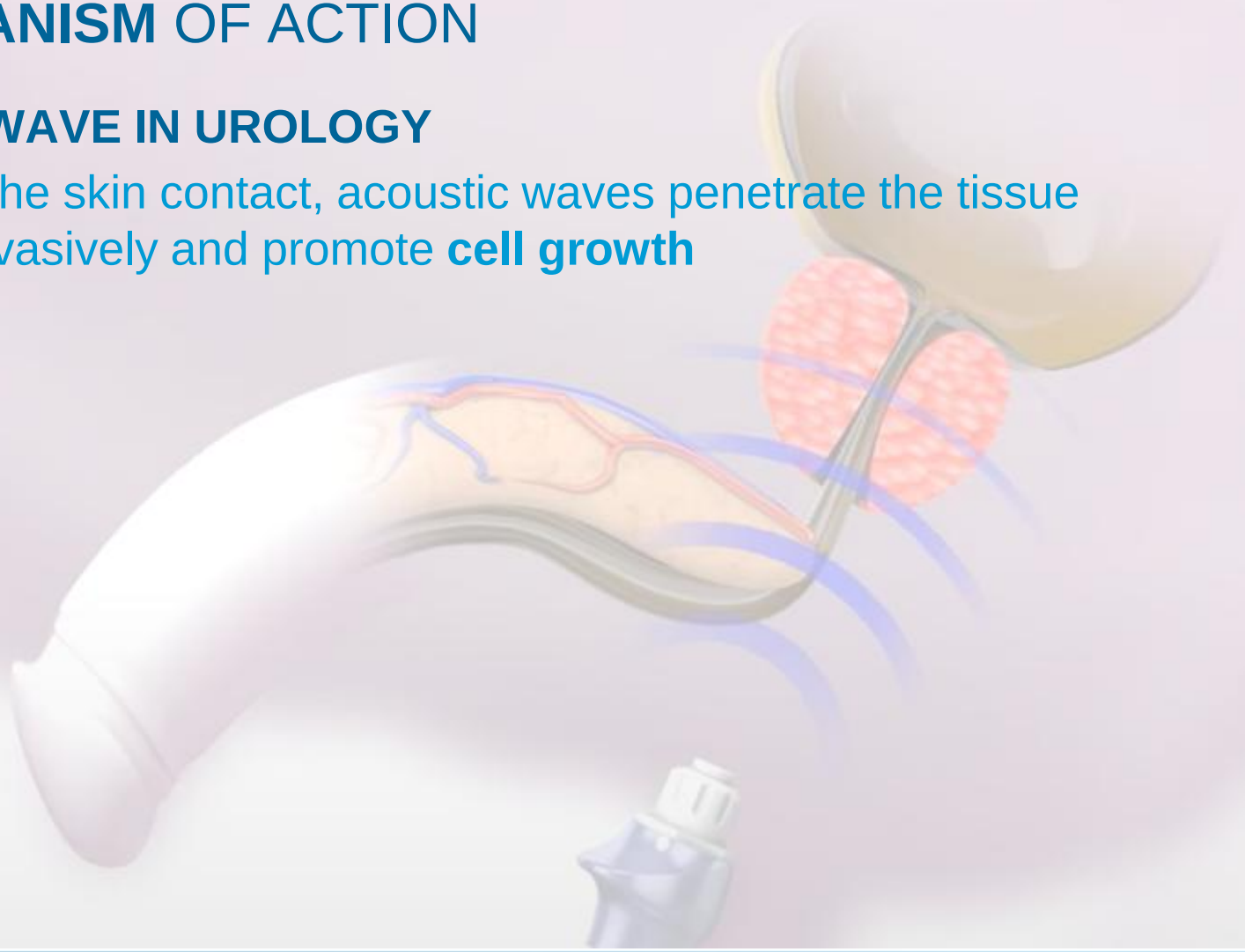
III. CLINICAL BACKGROUND



MECHANISM OF ACTION

SHOCKWAVE IN UROLOGY

- Upon the skin contact, acoustic waves penetrate the tissue non-invasively and promote **cell growth**



THERAPEUTIC EFFECTS

SHOCKWAVE IN UROLOGY

- blood circulation improvement
- neovascularization
- pain relief
- reduction of chronic inflammation



ERECTILE DYSFUNCTION

- **ED** is the inability to develop or maintain penile erection sufficient for sexual intercourse.
- SWT causes better erection by:
 - immediate **blood circulation enhancement**
 - **neovascularization** leading to long-term blood supply improvement



YEE CH. et al: ESWT in the Treatment of Erectile Dysfunction: A Prospective, Randomized, Double-blinded, Placebo Controlled Study

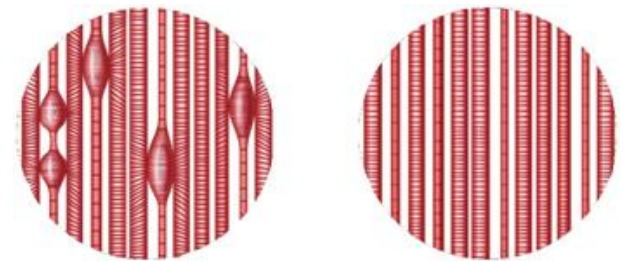
MEET THE ED PATIENT

Organic ED

Vascular (arterial, cavernosal)	IDEAL CANDIDATE
Neurogenic	Sensory, motor, autonomic, spinal cord trauma, peripheral neuropathies
Anatomic	Peyronie's disease, micropenis
Hormonal	Testicular, pituitary, thyroid
Psychogenic ED	
Generalised	Primary, age-related
Situational	Partner/performance -related, psychological distress

CHRONIC PELVIC PAIN SYNDROME

- **CPPS** symptoms involve persisting pelvic or perineal pain without the evidence of acute urinary tract infection
- It is often combined with **urinary problems** and local **muscle spasms**
- SWT induces:
 - pain **relief**
 - muscle **relaxation**
 - **reduction** of chronic inflammation



MEET THE CPPS PATIENT

NIH classification	Definition
I - acute bacterial	Acute infection of prostate gland
II - chronic bacterial	Recurrent infection of the prostate gland
III – CPPS	
IIIa – inflammatory	Leukocytes in semen
IIIb - non-inflammatory	No leukocytes in semen – IDEAL CANDIDATE
IV - asymptomatic inflammatory	Elevated PSA, abnormal semen analysis

IV. THERAPY GUIDE



THERAPEUTIC PARAMETERS IN BRIEF

FSWT

- Intensity - Expressed by **Energy Flux Density** and defined by mJ/mm^2
- Amount of shocks - amount of energy delivered in the therapy session
- Frequency - shocks delivered to the tissue per second.
- **Penetration depth** - adjustable by coupling pads to precisely target superficial or deep lying structures

RSWT

- Intensity - Expressed by pressure and defined in **Bars**.
- Amount of shocks - amount of energy delivered in the therapy session
- Frequency - shocks delivered to the tissue per second.
- **Penetration depth** - limited

FSWT COUPLING PADS

Penetration depth
0-35 mm*



Penetration depth
15-50 mm

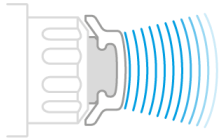


Penetration depth
30-65 mm

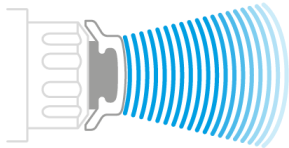


**same depth of penetration
as in U-shaped coupling pad*

RSWT TRANSMITTERS WITH SANITARY COVER



- • **20 mm steel** transmitter
- Lower energy transfer for sensitive patients and **superficial pathologies**



- • **20 mm titanium** transmitter
- Maximum energy transfer to reach **deeply lying pathologies**

V. HANDS-ON



CONTRAINDICATIONS



Corticosteroids in
application area



Implants
(electronic, metal, etc.)



Blood disorders



Cancer

Always consult user manual before using BTL Focused Shockwave device. Therapy has to be adjusted according to the patient's condition.



FSWT THERAPY



Choose a suitable **coupling pad**



Apply gel on the **lens surface**



Apply **gel in the treated area**



Initiate the therapy with **low intensity**



RSWT THERAPY



Choose a suitable **transmitter with sanitary cover**



Apply **gel in the treated area**



Initiate the therapy



THERAPEUTIC VIDEOS

CLICK TO WATCH

- [Erectile dysfunction](#)
- [CPPS](#)



THERAPY RECOMMENDATIONS ED

FSWT

- U-shaped coupling pad
- 30-60%
- 12 Hz
- 3000 shocks
- up to 4-6 tx
- 2x a week



RSWT

- Steel transmitter with sanitary cover
- 1.5-2 Bars
- 12 Hz
- 3000 shocks
- up to 8-10 tx
- 2x a week



THERAPY RECOMMENDATIONS CPPS

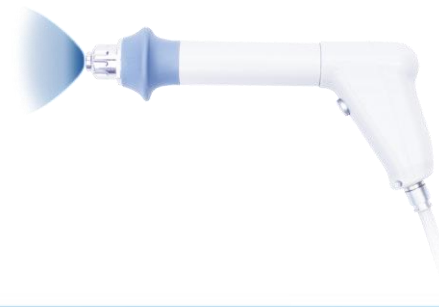
FSWT

- S/M coupling pad
- 40-60%
- 8 Hz
- 2500 shocks
- up to 1-3 tx
- 1x a week



RSWT

- Titanium transmitter with sanitary cover
- 3-5 Bars
- 8 Hz
- 2500 shocks
- up to 4-6 tx
- 1x a week



RULES TO FOLLOW

INTENSITY SETTINGS

- Always start the therapy with **lower intensity** and increase it gradually based on **patient's feedback**

HYGIENE MATTERS

- Sanitary covers are **single-use** only
- Clean the coupling pads and transmitters after **each patient**



VI. PRODUCT FEATURES & CONFIGURATIONS



FOCUSED SHOCKWAVE



BRINGING TECHNOLOGY CLOSER TO PEOPLE

SETTING NEW STANDARDS

- **Painless method** with ability to reach **superficial and deep lying** structures with **maximum energy**



THE LIFESPAN

POWER MEETS INTELLIGENCE

- **The highest lifespan** on the FSWT market:
 - **Min. 3 million shocks** per applicator
 - **100% intensity** during the whole lifespan
- **The only** device equipped with **Shock Quality Test**:
 - **Constant monitoring** of shock intensity
 - **Detecting** any unintentional intensity decrease
 - Ensures **flawless condition** of the piezoelectric crystal



THE APPLICATOR

**EQUALLY
FUNCTIONAL &
ERGONOMIC**

**SEE WHAT
MATTERS**

PLUG & PLAY



THE CONFIGURATION

Firmware upgrade

Urology

Lifespan
(min. 3 million shocks)



EFD
(up to 0.65 mJ/mm²)



Focal zone size
(5 x 35 mm)



Frequency
(up to 25 Hz)



Penetration depth
(0 - 65 mm)



Applicator

No water circuit
Display and start button

Standard accessories

Set of 3 coupling pads (S, M, U-shaped)



RADIAL SHOCKWAVE



BRINGING TECHNOLOGY CLOSER TO PEOPLE

ALL ADVANTAGES COUNT

- The perfect match of **parameters, lifespan** and **ergonomics**
- Stainless steel and titanium **transmitters** for personalized therapy
- **Sanitary covers**
- Intensity up to 5 Bars
- Frequency up to 20 Hz



BRINGING TECHNOLOGY CLOSER TO PEOPLE

20 MM TRANSMITTER WITH SANITARY COVER

- Sanitary cover for hygienic and comfortable treatment
- Lower energy transfer allows higher therapy comfort
- For:
 - *Erectile dysfunction*
 - *Peyronie's disease*



Not available for Austria, Germany, UK, France, Italy, Switzerland, Sweden and Lichtenstein.

BRINGING TECHNOLOGY CLOSER TO PEOPLE

20 MM TRANSMITTER WITH SANITARY COVER

- Sanitary cover for hygienic and comfortable treatment
- Up to **50% more energy** and deeper penetration compare to conventional stainless steel transmitters
- For:
 - *CPPS*



Not available for Austria, Germany, UK, France, Italy, Switzerland, Sweden and Lichtenstein.

THE HIGHEST LIFESPAN & EXCHANGEABLE KIT

TO MAKE DAILY MEDICAL PRACTICE LESS COMPLICATED

- Guaranteed **2 000 000 shocks**
- Easy-to-replace shell with **no need for service**



ERGONOMIC APPLICATOR

COMFORT FIRST

- **Ergonomic** handle shape
- **Inbuilt spring** prevents the transfer of reverse shocks to the physicians's hand



THE CONFIGURATION

Firmware upgrade

Urology

Lifespan
(min. 2 million shocks)



Pressure
(up to 5 Bars)



Frequency
(1-20 Hz)



Presets



Penetration depth
(0 - 65 mm)



Applicator

No water circuit
Display and start button

Standard accessories

Set of 3 coupling pads (S, M, U-shaped)



VII. APPENDIX



ERECTILE DYSFUNCTION



EXTRACORPOREAL SHOCKWAVE THERAPY IN THE TREATMENT OF ERECTILE DYSFUNCTION: A PROSPECTIVE, RANDOMIZED, DOUBLE-BLINDED, PLACEBO CONTROLLED STUDY

Yee C, Chan SY E, Hou S S, Ng C

Division of Urology, Department of Surgery, Prince of Wales Hospital, The Chinese University of Hong Kong, Hong Kong, China

Published: International Journal of Urology, 2014, 21, 1041 - 1045.

- **Subjects:** 70 patients with erectile dysfunction.
- **Aim:** To investigate the role of ESWT in the treatment of ED
- **Methods:** 12 FSWT sessions 2x a week vs sham treatment.
- **Evaluation:** IIEFD-ED score, interval change of EHS, adverse effects
- **Results:** FSWT is a clinically effective and tolerable treatment option for ED patients

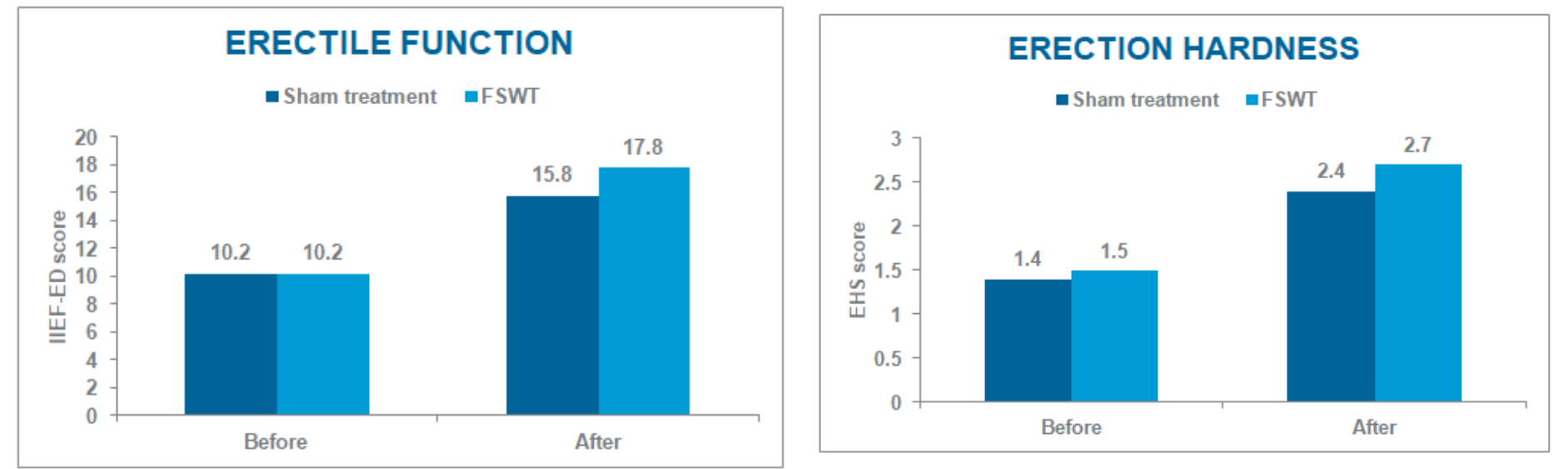


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DOES LOW INTENSITY ESWT HAVE A PHYSIOLOGICAL EFFECT ON ERECTILE FUNCTION? SHORT-TERM RESULTS OF A RANDOMIZED, DOUBLE-BLIND, SHAM CONTROLLED STUDY

Vardi Y, Appel B, Kilchevsky A, Gruenwald I

Neuro-Urology Unit, Rambam Healthcare Campus and the Rappaport Faculty of Medicine, Haifa, Israel
Department of Urology, Yale-New Haven Hospital, New Haven, Connecticut

Published: Journal of Urology, 2011, 187 (5), 1769 - 1775

- **Subjects:** 60 patients suffering from ED
- **Aim:** To evaluate the effect of FSWT on erectile function and penile hemodynamics
- **Methods:** 12 FSWT sessions 2x a week vs sham treatment
- **Evaluation:** IIEF-EF score, EHS, penile blood flow
- **Results:** FSWT has a positive short-term effect on erectile function

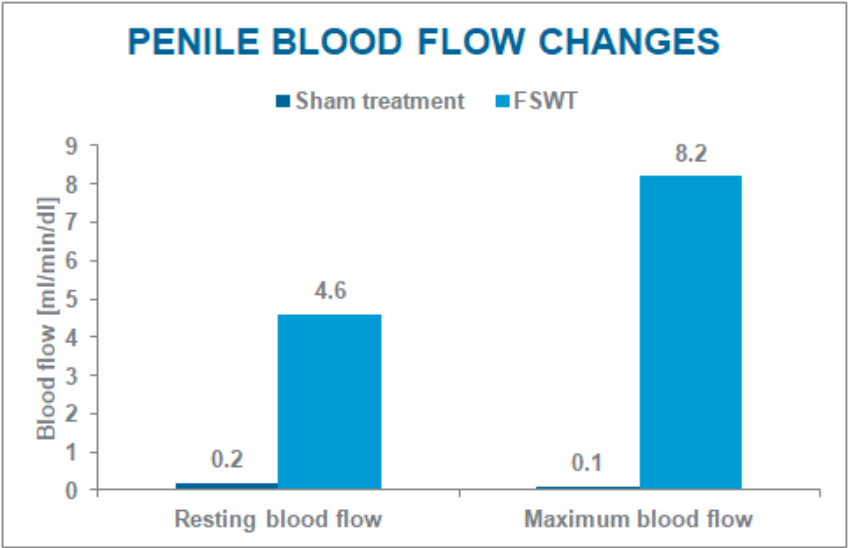
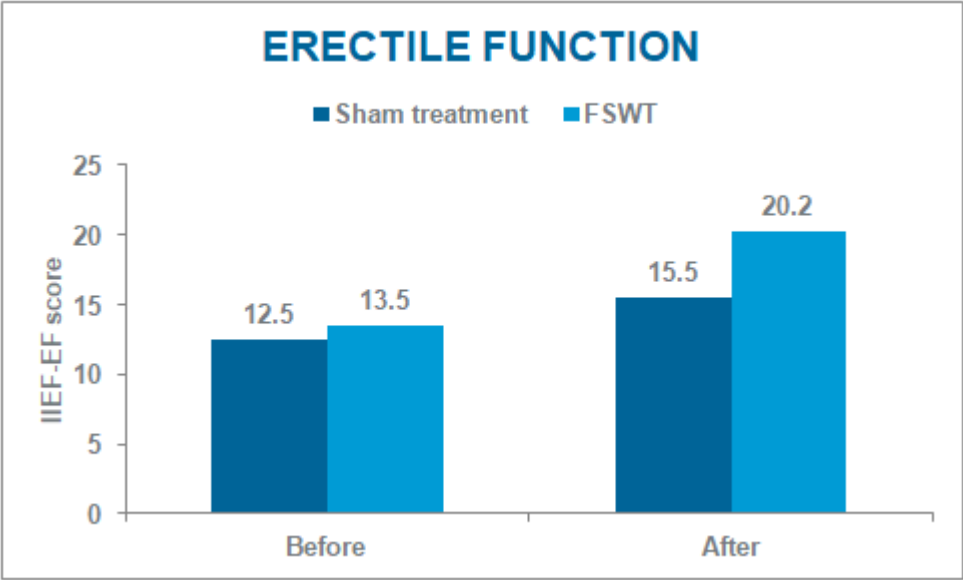


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CHRONIC PELVIC PAIN SYNDROME



EXTRACORPOREAL SHOCK WAVE THERAPY FOR THE TREATMENT OF CHRONIC PELVIC PAIN SYNDROME IN MALES: A RANDOMISES, DOUBLE-BLINDED, PLACEBO-CONTROLLED STUDY

Zimmerman M, Cumpanas A, Florin M, Janetschek G

Department of Urology, Elisabethinen Hospital, University-affiliated Hospital, Linz, Austria
Department of Urology, Medical School, University of Timisoara, Timisoara, Romania

Published: European Urology, 2009, 56, 418 - 424

- **Subjects:** 60 patients suffering from CPPS
- **Aim:** To achieve pain relief, improve urination and erectile function.
- **Methods:** 4 FSWT sessions 1x a week
- **Evaluation:**
 - 1 week, 1 month and 2 months follow-up
 - Visual Analog Scale, QoL questionnaire, NIH-CPSI, IPSS, IIEF
- **Results:** FSWT lead to significant pain relief, improvement in urinary symptoms and erectile function.

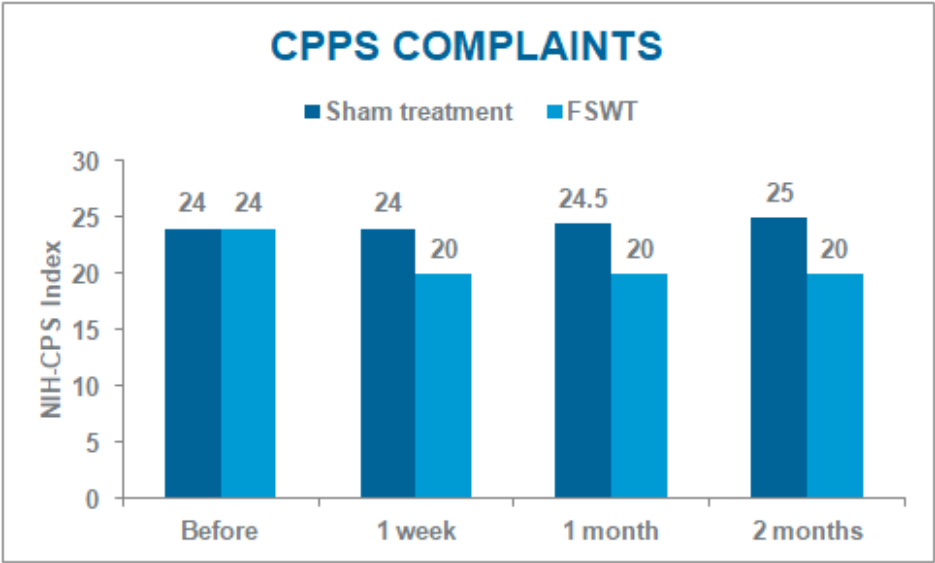
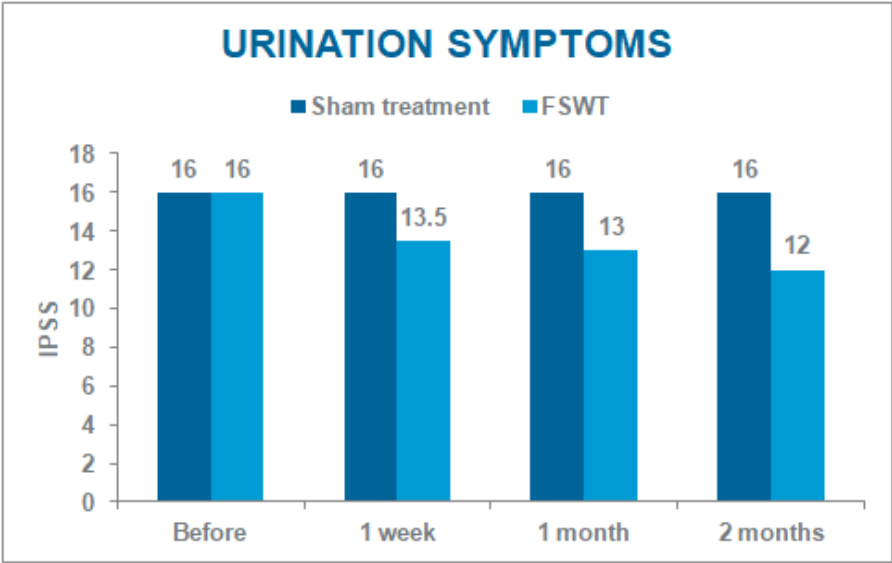


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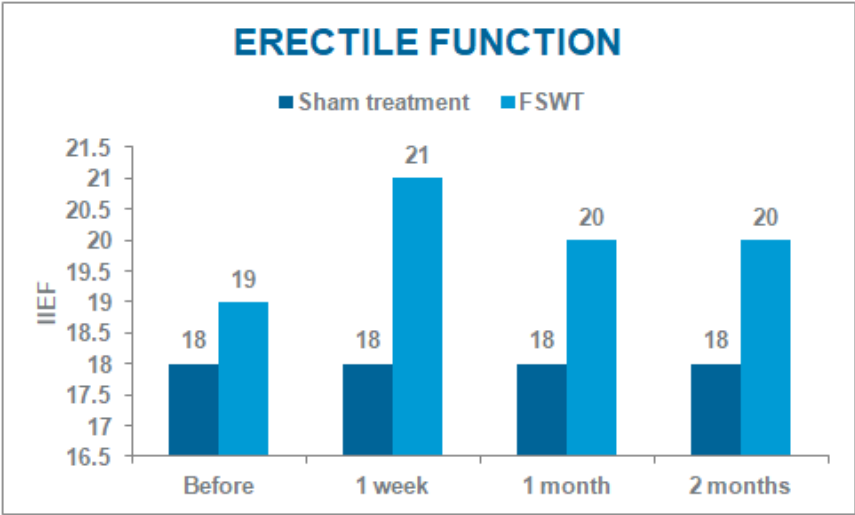
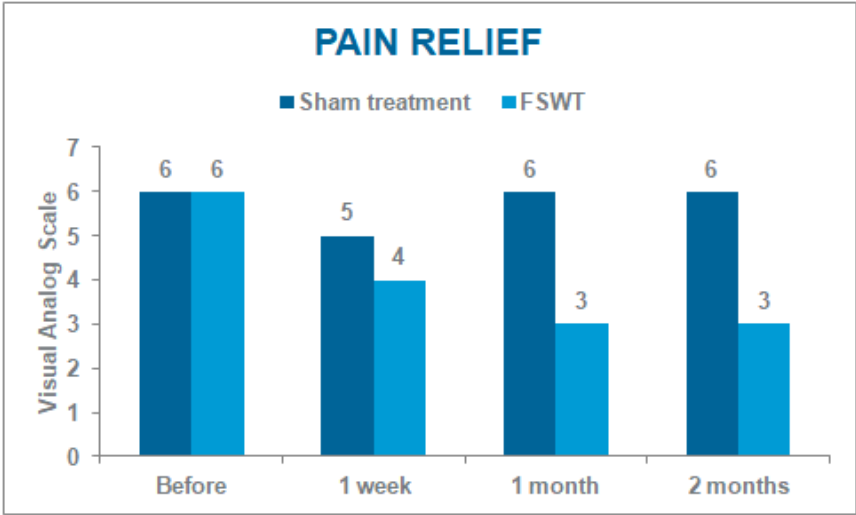


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Published: European Urology, 2009, 56, 418 - 424



EFFECT OF RADIAL SHOCK WAVE ON CHRONIC PELVIC PAIN SYNDROME/CHRONIC PROSTATITIS

Salama A B, Abouelnaga W A

Department of Physical Therapy, College of Applied Medical Sciences, Najran University, Saudi Arabia
Department of Physical Therapy for Surgery, Faculty of Physical Therapy, Cairo University, Egypt

Published: Journal of Physical Therapy Science, 2018, 30, 1145 - 1149

- **Subjects:** 40 patients suffering from CPPS
- **Aim:** To achieve pain relief, improve urination and quality of life.
- **Methods:** 8 RSWT sessions 2x a week vs. sham treatment
- **Evaluation:**
 - 1 week, 1 month and 2 months follow-up
 - NIH-CPSI
- **Results:** RSWT treatment lead to significant pain relief, reduction of urinary symptoms and thus to quality of life improvement.

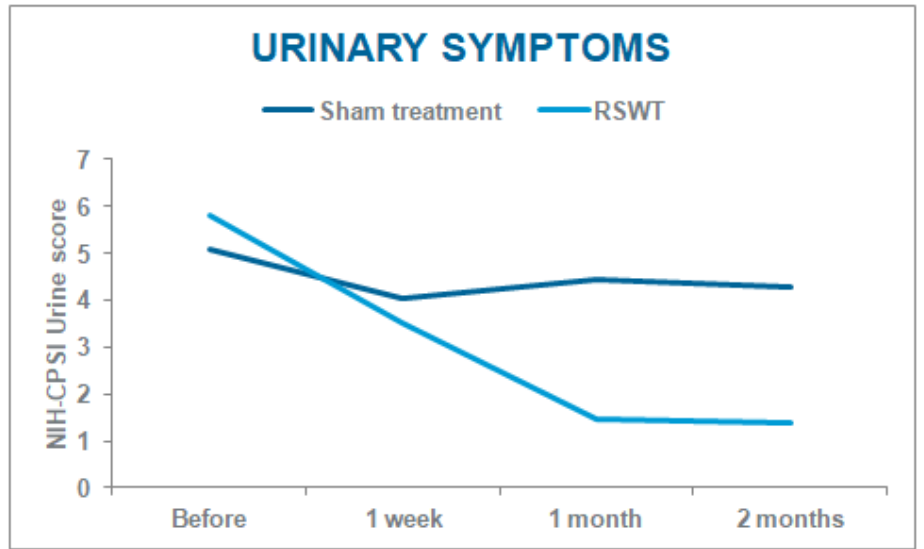
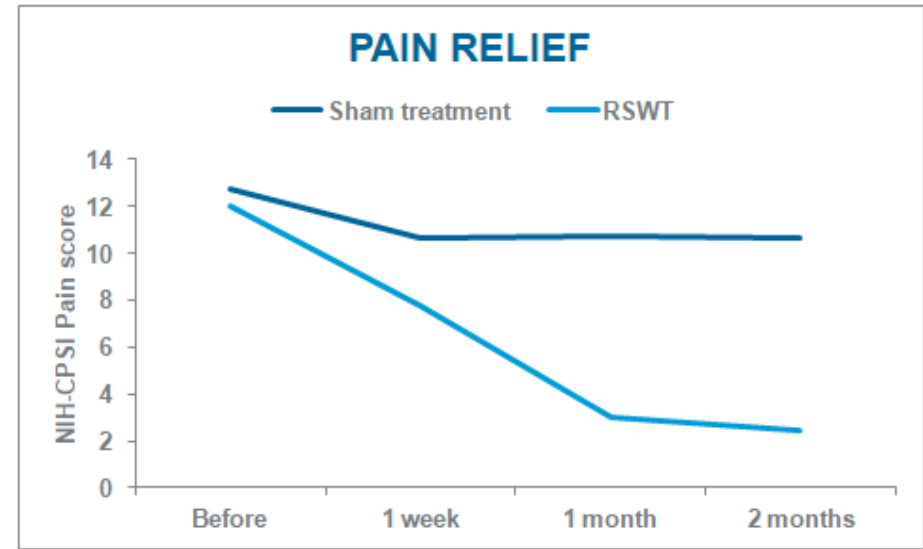


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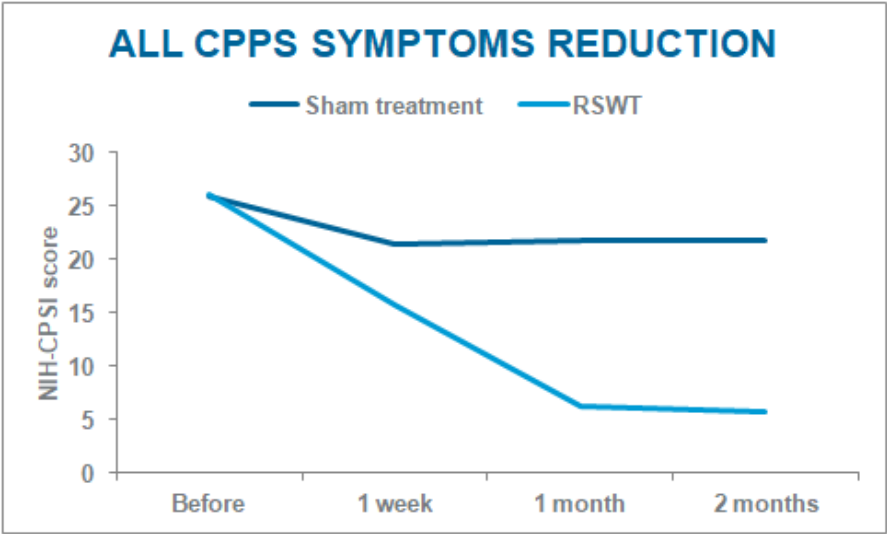
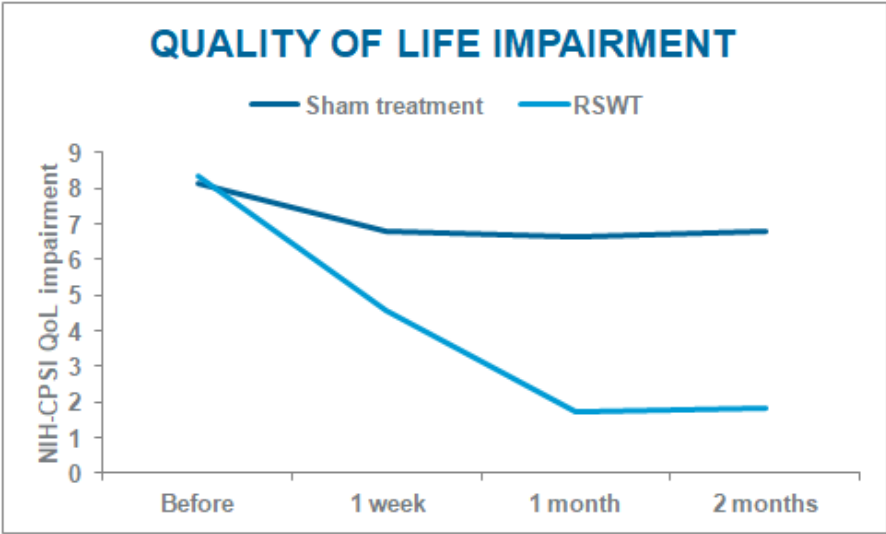


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OTHER INDICATIONS



A FIRST PROSPECTIVE, RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED CLINICAL TRIAL EVALUATING EXTRACORPOREAL SHOCK WAVE THERAPY FOR THE TREATMENT OF PEYRONIE'S DISEASE

Palmieri A, Imbimbo C, Longo N, Fusco F, Verze P, Mangiapia F, Creta M, Mirone V

Department of Urology, University Federico II of Naples, Naples, Italy

Published: European Urology, 2009, 56, 363 - 370

- **Subjects:** 100 patients suffering from Peyronie's disease
- **Aim:**
 - To reduce pain, penile plaque size and penile curvature
 - To improve erectile function and quality of life (QoL)
- **Methods:** 4 FSWT sessions 1x a week
- **Evaluation:** VAS, plaque size, penile curvature, IIEF-5 score, QoL questionnaire
- **Results:** FSWT leads to pain resolution and ameliorates both erectile function and QoL.

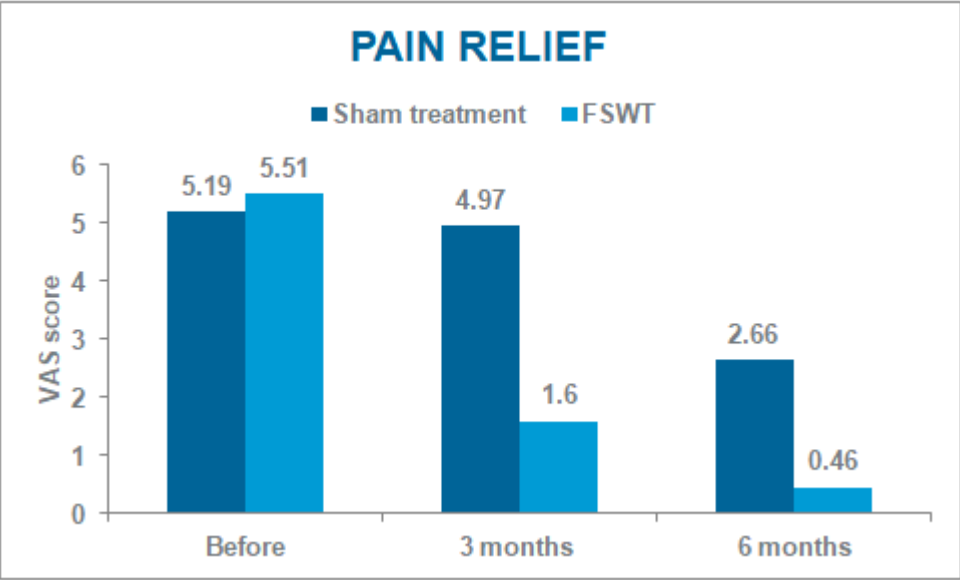


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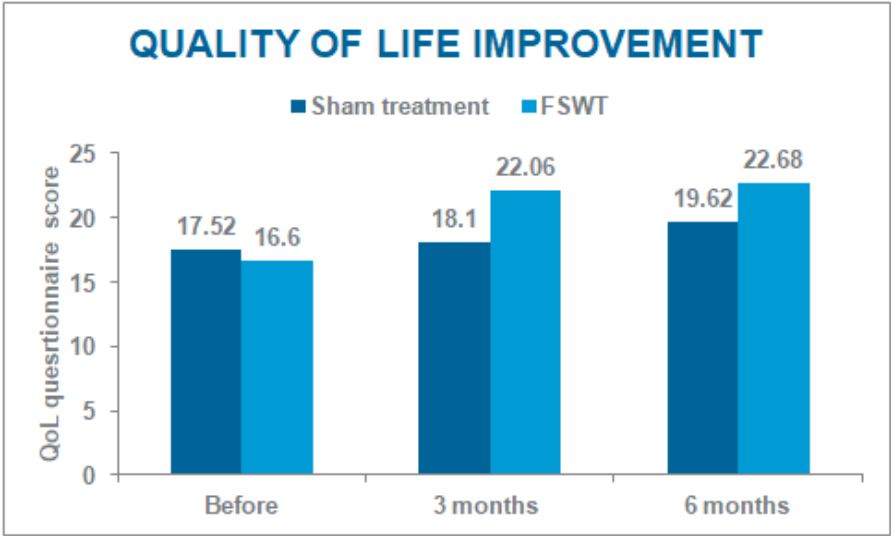
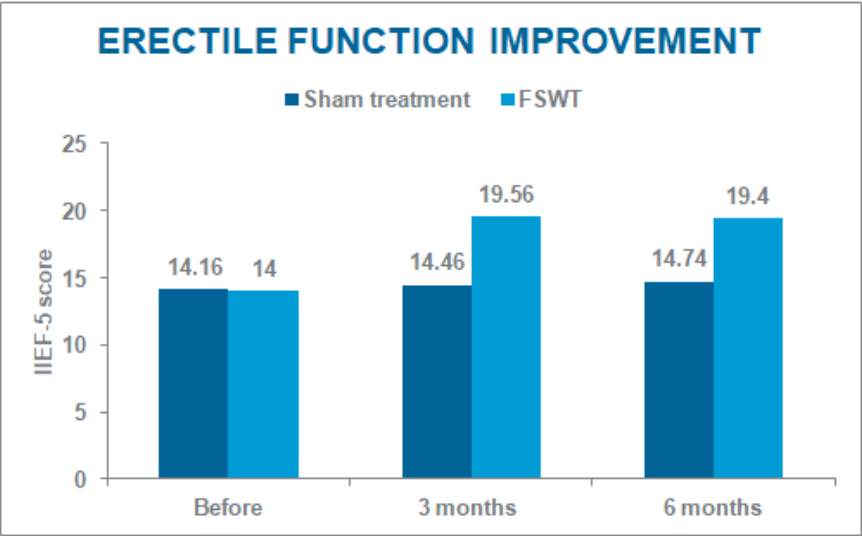


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RADIAL ECTRACORPOREAL SHOCK WAVE THERAPY AS A NOVEL AGENT FOR BENIGN PROSTATIC HYPERPLASIA REFRACTORY TO CURRENT MEDICAL THERAPY

Zhang D, Wang Y, Gong D, Zhang Z, Yu X, Ma Y

Department of Rehabilitation Medicine, The First Affiliated Hospital of China Medical University, Shenyang, China
Department of Urology, The First Affiliated Hospital of China, Medical University, Shenyang, China
Institute of Meta-Synthesis Medicine, Beijing, China

Published: American Journal of Men's Health, 2019, 1 - 7

- **Subjects:** 29 patients suffering from BPH
- **Aim:** To reduce lower urinary tract symptoms and improve erectile function.
- **Methods:** 8 RSWT sessions 1x a week
- **Evaluation:** IIPS, peak urinary flow, postvoid residual urine, IIEF-5
- **Results:** RSWT leads to pain resolution and ameliorates both erectile function and QoL.

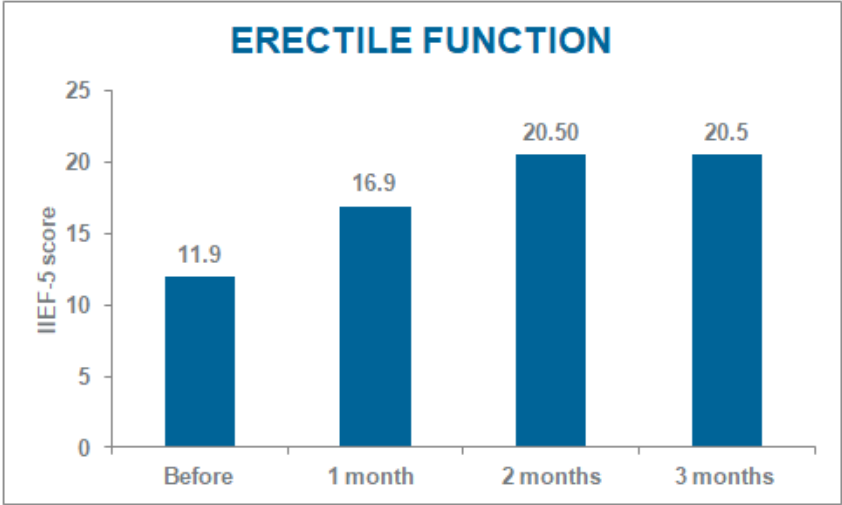
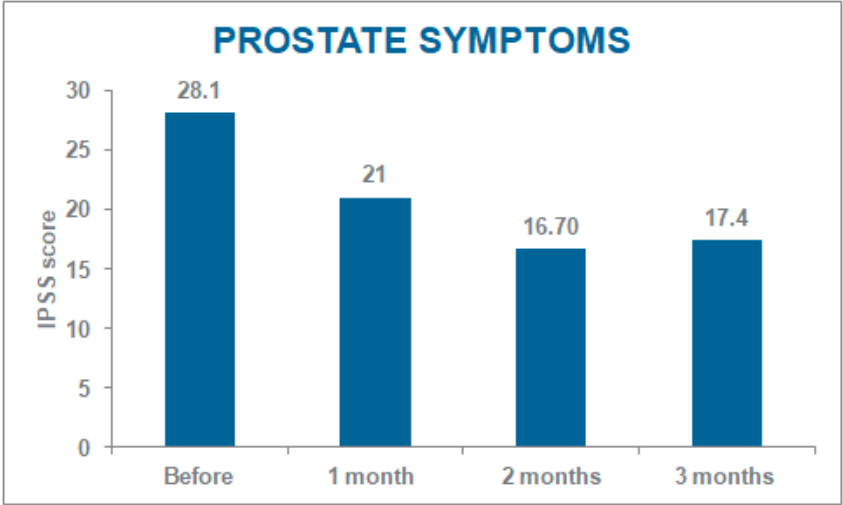


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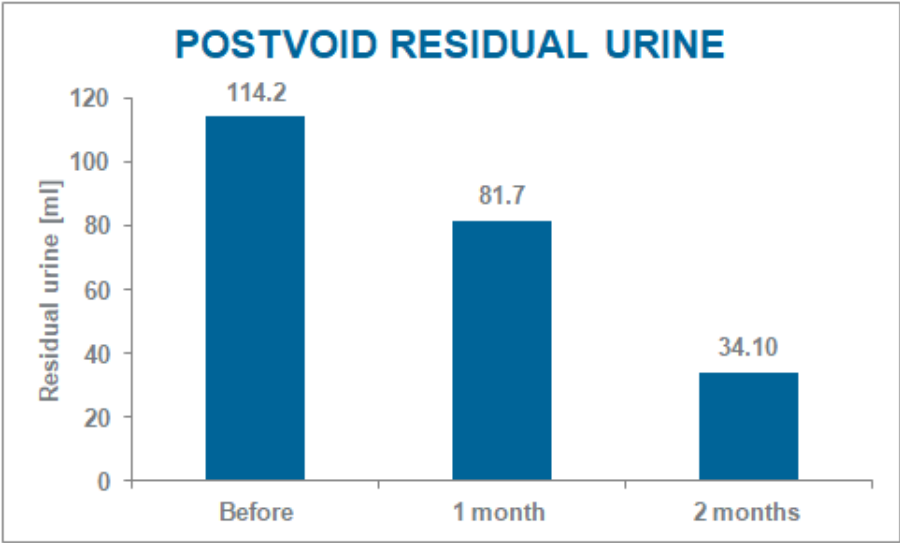
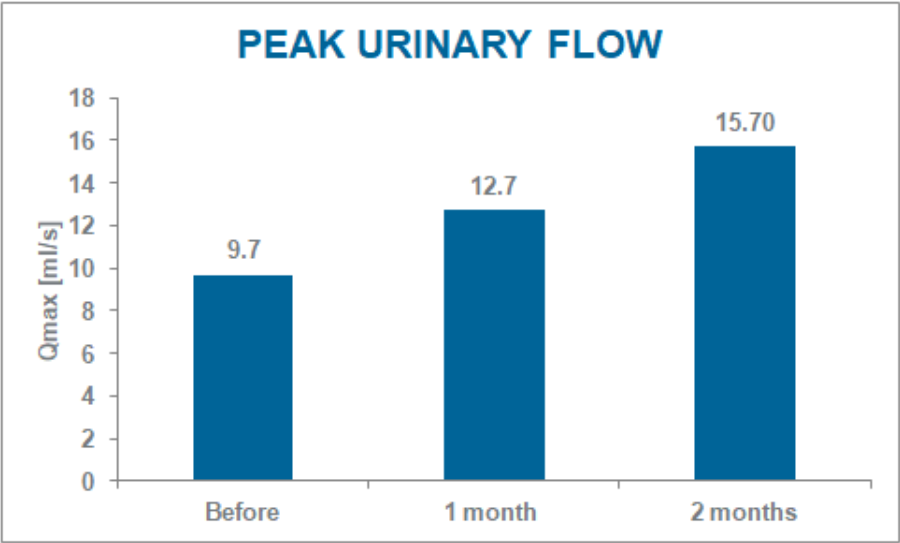


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**THANK YOU FOR
YOUR ATTENTION**

