



Dr. ARNOLD



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*Scientific Evidence*

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## 1. Stress Urinary Incontinence

### Article 1

UROLOGY 56 (Suppl 6A): 82–86, 2000 - UPDATE ON EXTRACORPOREAL MAGNETIC INNERVATION (ExMI) THERAPY FOR STRESS URINARY INCONTINENCE - NIAL T. M. GALLOWAY, R.E.S. EL-GALLEY, PETER K. SAND, RODNEY A. APPELL, H.W. RUSSELL AND S.J. CARLIN

### Article 2

2009 BJU INTERNATIONAL | 103, 1386–1390 - A double-blind randomized controlled trial of electromagnetic stimulation of the pelvic floor vs sham therapy in the treatment of women with stress urinary incontinence - Peter J. Gilling, Liam C. Wilson, Andre M. Westenberg, William J. McAllister, Katie M. Kennett, Christopher M. Frampto, Deborah F. Bell, Patricia M. Wrigley and Mark R. Fraundorfer

### Article 3

UROLOGY 53: 1108–1111, 1999 - EXTRACORPOREAL MAGNETIC INNERVATION THERAPY FOR STRESS URINARY INCONTINENCE - NIAL T. M. GALLOWAY, RIZK E. S. EL-GALLEY, PETER K. SAND, RODNEY A. APPELL, HOWARD W. RUSSELL, AND STEPHEN J. CARLAN

### Article 4

Scand J Urol Nephrol 37: 424–428; 2003 - Extracorporeal Magnetic Stimulation for the Treatment of Stress and Urge Incontinence in Women. Results of 1-year follow-up - Ali Ünsal, Remzi Saglam and Ersin Cimentepe

### Article 5

International Journal of Urology (2004) 11, 602–606 - Extracorporeal magnetic innervation treatment for urinary incontinence - TERUHIKO YOKOYAMA, OSAMU FUJITA, JUN NISHIGUCHI, KUNIHIRO NOZAKI, HIROYUKI NOSE, MIYABI INOUE, HIDEO OZAWA AND HIROMI KUMON

### Article 6

Female pelvic Medicine & Reconstructive Surgery 2020 - A comparative study on the effects of high-intensity focused electromagnetic technology and electrostimulation for the treatment of pelvic floor muscles and urinary incontinence in parous women: Analysis of posttreatment Data - E-Silantyeva, Dragana Zarkovic, Evigenia Astafeva, Ramina Soldatskaia, Mekan Orazov, Belkovskaya, Mark Kurster

### Article 7

BioMed Research International  
Volume 2020 - Assessment of the Effectiveness of Pelvic Floor Muscle Training (PFMT) and Extracorporeal Magnetic Innervation (ExMI) in Treatment of Stress Urinary Incontinence in Women: A Randomized Controlled Trial - Magdalena Weber-Rajek, Agnieszka Straczyńska, Katarzyna Strojek, Zuzanna Piekorz, Beata Pilarska, Marta Podhorecka, Kinga Sobieralska-Michalak, Aleksander Goch, and Agnieszka Radziminska



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Article 8

American Journal of Obstetrics and Gynecology (2005) 192, 1578–82 - A randomized, double-blinded, sham-controlled trial of postpartum extracorporeal magnetic innervation to restore pelvic muscle strength in primiparous patients - Patrick J. Culligan, Linda Blackwell, Miles Murphy, Craig Ziegler, Michael H. Heit

Article 9

38th American Society for Laser Medicine and Surgery Annual Conference on “Energy-based Medicine and Science”, April 11-15, 2018 - HIFEM® TECHNOLOGY – A NEW PERSPECTIVE IN TREATMENT OF STRESS URINARY INCONTINENCE - Alinsod R., Vasilev V., Yanev, Buzhov, Stoilov M. Yanev K., Georgiev M.

Article 10

38th American Society for Laser Medicine and Surgery Annual Conference on “Energy-based Medicine and Science”, April 11-15, 2018 - HIFEM TECHNOLOGY – THE NON-INVASIVE TREATMENT OF URINARY INCONTINENCE-Samuels J., and Guerette N.

Article 11

Lower urinary tract symptoms · June 2017 - High-power Magnetotherapy: A New Weapon in Urinary Incontinence? - Maria VADALÀ, Beniamino PALMIERI, Andrea MALAGOLI and Carmen LAURINO

Article 12

Urol Int 2005; 74:224–228 - Preliminary Results of the Effect of Extracorporeal Magnetic Stimulation on Urinary Incontinence after Radical Prostatectomy: A Pilot Study - Teruhiko Yokoyama Miyabi Inoue Osamu Fujita Kunihiro Nozaki Hiroyuki Nose Hiromi Kumon



	<b>Identification of the article</b>	<b>Scope/Treatment</b>	<b>Patients, Population, Statical analysis</b>	<b>Results / Clinical Benefits</b>	<b>Conclusions</b>
1	UROLOGY 56 (Suppl 6A): 82–86, 2000 - UPDATE ON EXTRACORPOREAL MAGNETIC INNERVATION (ExMI) THERAPY FOR STRESS URINARY INCONTINENCE - NIAL T. M. GALLOWAY, R.E.S. EL-GALLEY, PETER K. SAND, RODNEY A. APPELL, H.W. RUSSELL AND S.J. CARLIN	This report includes an update of the prospective multicenter study of extracorporeal magnetic innervation (ExMI) therapy for stress incontinence and a discussion of the possible mechanisms of action. For treatment the patients were seated fully clothed in a Neocontrol chair with a magnetic field therapy head in the seat. Treatment sessions were for 20 minutes, twice a week, for 6 weeks. After ExMI therapy, all of the measures were repeated at 8 weeks, including the dynamic pad weight testing and quality-of-life survey.	One hundred and eleven women (the mean age was 55 ±13 years with demonstrable stress urinary incontinence were studied. . Evaluation before treatment included bladder diaries, dynamic pad weight test, urodynamics, and a quality-of-life survey. After ExMI therapy, all of the measures were repeated at 8 weeks, including the dynamic pad weight testing and quality-of-life survey. Statistical analysis were done.	Forty-seven women completed 6 months of follow-up; of the 47, 13 patients were completely dry (28%) and 25 used no pad or less than 1 pad per day (53%). Pad use was reduced in 33 patients (70%). The median number of pads was reduced from 2.16 to 1 per day (Wilcoxon signed rank test, P ,0.005). The frequency of leak episodes was reduced from 3.0 to 1.7 at 6 months (Wilcoxon signed rank test, P 5 0.004). Detrusor instability was demonstrated in 10 before and 6 after ExMI (P <0.05).	ExMI therapy is effective for both stress and urge incontinence. The best results are achieved in those patients who use no more than 3 pads a day and have had no prior continence surgery.



2	<p>2009 BJU INTERNATIONAL   103, 1386–1390 - A double-blind randomized controlled trial of electromagnetic stimulation of the pelvic floor vs sham therapy in the treatment of women with stress urinary incontinence - Peter J. Gilling, Liam C. Wilson, Andre M. Westenberg, William J. McAllister, Katie M. Kennett, Christopher M. Frampto, Deborah F. Bell, Patricia M. Wrigley and Mark R. Fraundorfer</p>	<p>The purpose was to compare the efficacy of extracorporeal electromagnetic stimulation (ES) of the pelvic floor for treating stress urinary incontinence (SUI) vs sham ES. The treatment consisted of three sessions per week for 6 weeks. This consisted of a 10-min stimulation at 10 Hz followed by a 3-min rest and then a further 10-min stimulation at 50 Hz. The intensity of ES was adjusted to the maximum level tolerated by the patient.</p>	<p>In this study,70 women with urodynamically confirmed SUI were enrolled. Data were collected before and after treatment on all women, including a 20-min provocative pad-test with a predetermined bladder volume (primary outcome measure), a 3-day bladder diary and 24 h pad-test. Circumvaginal muscle (CVM) rating score, perineometry using two separate instruments and video-urodynamics were also used, and the Urinary Incontinence Quality of Life Scale (I-QOL) and King’s Health Questionnaires. Patients were fully re-evaluated 8 weeks after treatment, and the bladder diary, pad-test and questionnaires were repeated at 6 months. Statistical analysis were done.</p>	<p>At 8 weeks, there were improvements in the mean (SD) values for the 20-min pad-test, of 39.5 (5.1) vs 19.4 (4.6) g ( P &lt; 0.001); the 24-h pad-test, of 24.0 (4.7) vs 10.1 (3.1) g ( P &lt; 0.01); the number of pads/day, of 0.9 (0.1) vs 0.6 (0.1) ( P &lt; 0.01), the I-QOL score, of 63.7 (2.8) vs 71.2 (3.3) ( P &lt; 0.001); and King’s Health Questionnaire score, of 9.6 (0.8) vs 6.9 (0.7) ( P &lt; 0.001). However, these improvements were not statistically significant when compared with the sham-treatment group. In those patients on active treatment who had a poor pelvic floor contraction at the initial assessment (defined by the CVM score and perineometry), there was a significant reduction ( P &lt; 0.05) in the 20-min pad-test leakage when compared with the sham treatment group.</p>	<p>ES was no more effective overall than sham treatment in this patient group. However, in those women who were unable to generate adequate pelvic floor muscle contractions, there was an significant improvement in provocative pad testing when compared to sham treatment.</p>
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3	<p>UROLOGY 53: 1108–1111, 1999 - EXTRACORPOREAL MAGNETIC INNERVATION THERAPY FOR STRESS URINARY INCONTINENCE - NIAL T. M. GALLOWAY, RIZK E. S. EL-GALLEY, PETER K. SAND, RODNEY A. APPELL, HOWARD W. RUSSELL, AND STEPHEN J. CARLAN</p>	<p>The aim was to report the first data from a prospective clinical study to determine the feasibility of using extracorporeal magnetic innervation (ExMI) for the treatment of stress urinary incontinence. Treatments were for 20 minutes, twice a week for 6 weeks. For treatment, the patient sits fully clothed on a special chair; within the seat is a magnetic field generator that produces the rapidly changing magnetic field flux.</p>	<p>Eighty-three female patients with demonstrable stress urinary incontinence were enrolled in this study. Sixty-four patients have completed the treatment, and these data are included in the analysis. The mean age was 55.6 ± 12 years (range 35 to 83).</p>	<p>Fifty patients have been followed up for longer than 3 months (33 patients for less than 3 months); 17 patients (34%) were dry, 16 (32%) were using not more than 1 pad per day, and 17 (34%) were using more than 1 pad per day. Pad use was reduced from 2.5 to 1.3 (P = 0.001) and leak episodes per day were reduced from 3.3 to 1.7 (P = 0.001). The pad weight was reduced from 20 to 15 g. Detrusor instability was found in 5 patients before but was demonstrated in only 1 patient after treatment.</p>	<p>ExMI therapy offers a new effective modality for pelvic floor muscle stimulation. ExMI is painless, there is no need for a probe, and no need to undress for treatments. Longer follow-up is required to determine how long the benefits of treatment last and whether retreatment will be necessary.</p>
4	<p>Scand J Urol Nephrol 37: 424–428; 2003 - Extracorporeal Magnetic Stimulation for the Treatment of Stress and Urge Incontinence in Women. Results of 1-year follow-up- Ali Ünsal, Remzi Saglam and Ersin Cimentepe</p>	<p>The purpose was To evaluate the clinical efficacy of extracorporeal magnetic stimulation for the treatment of stress and urge urinary incontinence in women. Pelvic floor muscle stimulation was performed for 20 min (10 min at 5 Hz and 10 min at 50 Hz) twice a week for a total of 8 weeks.</p>	<p>A total of 35 patients with stress incontinence and 17 with urge incontinence were enrolled in this study. All patients were asked to keep a 3-day voiding diary. A pad-weighing test was done for each patient at their first visit. The mean follow-up period was 16.8 months (range 12–32 months). A total of 44 patients completed 1 year of follow-up and were re-evaluated by means of voiding diary, pad-weighing test and cystometric study. Statistical analysis were done.</p>	<p>Of the 44 patients, 11 (38%) with stress incontinence and 6 (40%) with urge incontinence were cured 1 year after the treatment. In addition, there was an improvement in symptoms in 12 patients (41%) in the stress group and 7 (47%) in the urge</p>	<p>Extracorporeal magnetic stimulation therapy offers a non-invasive, effective and painless treatment for stress and urge incontinence in women.</p>



				<p>group. Pad weight was reduced from 15.4 to 5.8 g in the stress group and from 12.4 to 4.7 g in the urge group (p = 0.000 and 0.001, respectively). Mean Valsalva leak point pressure was increased from 87.3 15.9 to 118.0 11.0 cmH2O in the stress group (p = 0.000).</p>	
5	<p>International Journal of Urology (2004) 11, 602–606 - Extracorporeal magnetic innervation treatment for urinary incontinence - TERUHIKO YOKOYAMA, OSAMU FUJITA, JUN NISHIGUCHI, KUNIHIRO NOZAKI, HIROYUKI NOSE, MIYABI INOUE, HIDEO OZAWA AND HIROMI KUMON</p>	<p>Extracorporeal magnetic innervation (ExMI) is a new technology used for pelvic muscle strengthening for the treatment of stress urinary incontinence. Authors explored whether this new technology is effective for patients with urge incontinence, as well as those with stress urinary incontinence. Treatment sessions were for 20 min, twice a week for 8 weeks.</p>	<p>In this study, 20 patients (68.5 ± 14.2 years old (range 29–85)) with urge incontinence and 17 patients 60.1 ± 12.6 years old (range 29–80) with stress urinary incontinence were enrolled. Evaluations were performed by bladder diaries, one-hour pad weight testing, quality-of-life surveys and urodynamic studies.</p>	<p>Of the urge incontinence cases, five patients were cured (25.0%), 12 patients improved (60.0%) and three patients did not show any improvement (15.0%). Leak episodes per day reduced from 5.6 times to 1.9 times at 8 weeks (P &lt; 0.05). Eight patients with urge incontinence recurred within 24 weeks after the last treatment (47.1%).</p> <p>Of the stress incontinence cases, nine patients were cured (52.9%), seven patients improved (41.1%) and one patient did not show any improvement (6%).</p>	<p>Although the results for urge incontinence were less effective than for stress urinary incontinence, ExMI therapy offers a new option for urge incontinence as well as stress urinary incontinence.</p>





				In one-hour pad weight testing, the mean pad weight reduced from 7.9 g to 1.9 g at 8 weeks (P < 0.05). Three patients returned to the baseline values within 24 weeks after the last treatment (17.6%).	
6	Female pelvic Med reconstruc Surg 2020 -A comparative study on the effects of high-intensity focused electromagnetic technology and electrostimulation for the treatment of pelvic floor muscles and urinary incontinence in parous women: Analysis of posttreatment Data - E-Silantyeva, Dragana Zarkovic, Evigenia Astafeva, Ramina Soldatskaia, Mekan Orazov, Belkovskaya, Mark Kurster	This study compares the immediate efficiency of high intensity focused electromagnetic(HIFEM) therapy and electrostimulation for the treatment of weakened PFMs, accompanied by the UI. Symptomatic patients received either HIFEM or electrostimulation treatment. Treated patients completed 10 therapies scheduled 2 to 3 times per week (HIFEM) or every other day ( electrostimulation).	Ninety-five parous women were considered for the study. Only 75 women reported PFMs weakness and incontinence issues were included. Patients underwent examination by 3-dimensional transperineal ultrasound at the baseline and posttreatments. Levator-urethra gap, anteroposterior diameter, laterolateral diameter of levator hiatus, and hiatal area were measured. In addition, Pelvic Floor Disability Index 20 questionnaire and subjective evaluation of patient's intimate were assessed.	Enrolled patients were divided into group I ( n=50 HIFEM) , group II ( N= 25 electrostimulation), and group III ( N= 20, control) . Three dimensional ultrasounds showed positive changes in dynamics of the pelvic floor posttreatment (decreased anteroposterior diameter, laterolateral diameter and hiatal area). However the significant change (P<0.005) changes of pelvic floor integrity were observed only in group I. In addition group I achieved greater level of improvement in Pelvic Floor Disability Index 20 Questionnaire compared with group II	Post treatment results suggest that HIFEM technology is suitable for treatment of PFMs weakening and showed to be more effective when compared with electrostimulation in short-term.



				(52% and 18% respectively, $p > 0.001$ ) Substantially fewer patients in group I reported urine leakage after treatments.	
7	BioMed Research International Volume 2020 - Assessment of the Effectiveness of Pelvic Floor Muscle Training (PFMT) and Extracorporeal Magnetic Innervation (ExMI) in Treatment of Stress Urinary Incontinence in Women: A Randomized Controlled Trial - Magdalena Weber-Rajek , Agnieszka Stra, czy ´nska , Katarzyna Strojek, Zuzanna Piekorz, Beata Pilarska, Marta Podhorecka, Kinga Sobieralska-Michalak, Aleksander Goch, and Agnieszka Radzimi ´nska	The purpose of this study is to assess the effectiveness of pelvic floor muscle training and extracorporeal magnetic innervation in treatment of urinary incontinence in women with stress urinary incontinence. Subjects in the experimental group 1 (EG1) received 12 sessions of pelvic floor muscle training, whereas subjects in the experimental group 2 (EG2) received 12 sessions of extracorporeal magnetic innervation. Subjects in the control group (CG) did not receive any therapeutic intervention.	The randomized controlled trial enrolled 128 women with stress urinary incontinence who were randomly allocated to either one out of two experimental groups (EG1 or EG2) or the control group (CG). The following instruments were used to measure results in all study groups at the initial and final assessments: Revised Urinary Incontinence Scale (RUIS), Beck Depression Inventory (BDI-II), General Self-Efficacy Scale (GSES), and King’s Health Questionnaire (KHQ).	In both experimental groups, a statistically significant decline in depressive symptoms (BDI-II) and an improvement in urinary incontinence severity (RUIS) and quality of life (KHQ) were found in the following domains: “social limitations,” “emotions,” “severity measures,” and “symptom severity scale.” Moreover, self-efficacy beliefs (GSES) improved in the experimental group that received ExMI (EG2). No statistically significant differences were found between all measured variables in the control group. Comparative analysis of the three study groups showed statistically significant differences at	Pelvic floor muscle training and extracorporeal magnetic innervation proved to be effective treatment methods for stress urinary incontinence in women. The authors observed an improvement in both the physical and psychosocial aspects.



				the final assessment in the quality of life in the following domains: “physical limitations,” “social limitations,” “personal relationships,” and “emotions.”	
8	American Journal of Obstetrics and Gynecology (2005) 192, 1578–82 - A randomized, double-blinded, sham-controlled trial of postpartum extracorporeal magnetic innervation to restore pelvic muscle strength in primiparous patients - Patrick J. Culligan, Linda Blackwell, Miles Murphy, Craig Ziegler, Michael H. Heit	The purpose of this study was to determine the effects of extracorporeal magnetic innervation (ExMI) on pelvic muscle strength of primiparous patients. Primigravid patients were randomized to receive either active or sham ExMI postpartum treatments for 8 weeks. For the active group, the ExMI chair was set to deliver a treatment of 50 Hz intermittently (5 seconds on, 5 seconds off) for 20 minutes.	In this study, 51 patients were enrolled. The main outcome measure was pelvic muscle strength measured by perineometry at baseline (midtrimester), 6 weeks (before treatments), 14 weeks, 6 months, and 12 months postpartum. Mixed randomized-repeated measures ANOVA was used to analyze the mean perineometry values between the 2 groups and across all 5 time periods. Statistical analysis were done.	The main outcome measure was pelvic muscle strength measured by perineometry at baseline (midtrimester), 6 weeks (before treatments), 14 weeks, 6 months, and 12 months postpartum. Fifty-one patients enrolled, and 18 were lost to attrition. There were no differences in demographics or delivery characteristics between the active and sham groups. Authors found no differences in pelvic muscle strength between patients receiving active or sham ExMI treatments in the early postpartum period.	Authors found no differences in pelvic muscle strength between patients receiving active or sham ExMI treatments in the early postpartum period
9	38th American Society for Laser Medicine and Surgery Annual	The aim of the study was to assess the effect of High-Intensity Focused	30 women with SUI (classified as SUI type 0-2a), aged	Course of the treatment with the HIFEM technology significantly	Results suggest that HIFEM technology is an efficacious



	<p>Conference on “Energy-based Medicine and Science”, April 11-15, 2018 - HIFEM® TECHNOLOGY – A NEW PERSPECTIVE IN TREATMENT OF STRESS URINARY INCONTINENCE - Alinsod R., Vasilev V., Yanev , Buzhov , Stoilov M. Yanev K., Georgiev M.</p>	<p>Electromagnetic (HIFEM) technology in the treatment of Stress Urinary Incontinence (SUI). Patients attended 6 therapies scheduled 2x a week. Therapy duration was set to 28 minutes; frequency range between 20-30 Hz with trapezoid intensity modulation were used to achieve gradual motor unit recruitment. Intensity (in %) was set according to patients’ feedback and comfort to trigger supramaximal pelvic floor muscle contractions.</p>	<p>between 38-75 years (Mean±SD= 57.99±10.36) were voluntarily comprised in this study. from two clinics (United States, Bulgaria) with SUI were delivered a treatment course with HIFEM technology. QoL was assessed through King’s Health Questionnaire (KHQ). Data was collected pre-, post-treatment, at 3- and 6-month follow-up visits. All patients reported the number of used hygienic pads. Scores of questionnaires were calculated and statistically evaluated through t-test (p&lt;0.001). Number of used hygienic pads was calculated as average. Statistical analysis were done.</p>	<p>improved QoL of all women. This was demonstrated as 77% level of improvement in incontinence impact according to the KHQ scores during 6-month follow-up. 95% of patients decreased the use of hygienic pads to 2.0 pads per day and night post-treatment. 71% of patients significantly decreased the use of hygienic pads to 1.33 pad per day and night during 6-month follow-up.</p>	<p>therapy for treatment of SUI.</p>
10	<p>38th American Society for Laser Medicine and Surgery Annual Conference on “Energy-based Medicine and Science”, April 11-15, 2018 - HIFEM TECHNOLOGY – THE NON-INVASIVE TREATMENT OF URINARY INCONTINENCE - Samuels J., and Guerette N.</p>	<p>This study sought to report on results of a novel non-surgical treatment (HIFEM ) that may provide an affordable and discrete solution to this common problem. All patients completed a total of 6 treatments performed twice weekly for 3 consecutive weeks.</p>	<p>20 women, 45 to 77 years who presented with urinary incontinence including stress, urge and mixed UI, were included in a pilot study. Twenty patients completed King’s Health Questionnaire (KHQ) pre- and post-treatment. The same data was collected during 3 and 6-month follow-up as well. Additionally, patients reported the frequency of urinary leakage episodes and pad usage. Statistical analysis were done.</p>	<p>Treatment with the HIFEM technology significantly improved QoL scores in all patients. There was a 60% improvement. in both parts of the KHQ which were maintained through the 6-month follow-up (p&lt;0.05). Nearly 75% of patients significantly decreased urinary leakage or achieved total</p>	<p>Results suggest that HIFEM technology significantly improves the QoL and reduces UI in post-partum and menopausal female patients who present with all types of UI. This study confirms that further investigation is warranted.</p>



				<p>dryness and maintained these results through follow-up. Pre-treatment, 16 patients used on average 2 hygienic pads per 24 hour period. During 3-month follow-up, 6 patients used 0.6 pads, 10 patients were completely dry. Twenty patients completed the 6-month follow-up, with eleven patients completely dry and 5 patients used 0.5 pads per 24 hour period. The vast majority of the patients decreased usage of hygienic pads to a minimum or totally eliminated usage</p>	
11	<p>Lower urinary tract symptoms · June 2017 - High-power Magnetotherapy: A New Weapon in Urinary Incontinence? - Maria VADALÀ, Beniamino PALMIERI, Andrea MALAGOLI and Carmen LAURINO</p>	<p>In this study, authors evaluated the therapeutic efficacy of functional magnetic stimulation (FMS) as potential UI treatment with improvements in the pelvic floor musculature, urodynamic tests and quality of life. Patients were treated with FMS (20min/session) twice a week for 3weeks.</p>	<p>A total of 20 UI patients (10 females and 10 men, mean age 64, 14years), including 10 with stress UI, four with urgency UI and six with mixed UI were enrolled in this study. The patients' impressions, records in urinary diaries, and scores of three life stress questionnaires (overactive bladder symptom questionnaire [OAB-q], urogenital distress inventory questionnaire-short form [UDI-6], incontinence impact questionnaire-short form [IIQ-7]) were performed pre- and post-treatment. Statistical analysis were done.</p>	<p>Significant reductions (P&lt;0.01) of micturition number and nocturia after magnetic treatment were evidenced. The urodynamic tests recorded a significant increase in cystometric capacity (147±51.3%), in maximum urethral closure pressure (110±34%), in urethral functional length</p>	<p>These preliminary findings suggest that FMS with Magneto STYM (twice weekly for 3weeks) improves the UI and may be an effective treatment for this urogenital disease.</p>



				(99.8±51.8%), and in pressure transmission ratio (147±51.3%) values compared with the baseline values.	
12	Urol Int 2005; 74:224–228 - Preliminary Results of the Effect of Extracorporeal Magnetic Stimulation on Urinary Incontinence after Radical Prostatectomy: A Pilot Study - Teruhiko Yokoyama Miyabi Inoue Osamu Fujita Kunihiro Nozaki Hiroyuki Nose Hiromi Kumon	The aim was to investigate the clinical effects of ExMS on urinary incontinence after retropubic radical prostatectomy. Treatment sessions were for 20 min, twice a week for 2 months. The frequency of the pulse field was 10 Hz for 10 min, followed by a second treatment at 50 Hz for 10 min.	Ten patients (range age 63-74) who had suffered from urinary incontinence for more than 12 months following radical prostatectomy were enrolled in this study. 8 of the 10 patients showed stress urinary incontinence due to sphincter insufficiency, and the other 2 patients suffered from urge incontinence. Objective and subjective measures included voiding diaries, 1-hour pad weight testing, and a quality of life survey at 1, 2, 3, and 6 months after starting the treatment. Urodynamic studies were performed before and after treatment.	Three patients became dry (30%), 3 patients improved (30%), and 4 patients showed stationary symptoms (40%). In the 1-hour pad weight testing, the mean pad weight decreased from 25 to 10.3 g, and the quality of life scores had improved from 70.5 to 84.9 2 months after treatment. The frequency of leak episodes per day was reduced from 5.0 times before to 1.9 times after treatment. In the urodynamic study, mean maximum cystometric capacity and Valsalva leak point pressure increased from 197.8 ± 53.2 to 309.8 ± 85.3 ml and from 67.3 ± 22.6 to 97.1 ± 22.7 cm H <sub>2</sub> O after treatment, respectively (p < 0.05). 3 of 6 patients who showed improvement returned to the baseline values	ExMS therapy offered a new option for urinary incontinence treatment after radical prostatectomy. Further studies are required to determine how long the benefits of treatment last and whether maintenance therapy is necessary.



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				within 12 months after treatment and requested maintenance ExMS therapy. No side effects were observed.	
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## 2. Urge Urinary Incontinence

### Article 13

International Urogynecology Journal 2006 - Symptom change in women with overactive bladder after extracorporeal magnetic stimulation: a prospective trial - Ho Choe Myung-Soo Choo. Kyu-Sung Lee

### Article 14

Scand J Urol Nephrol 37: 424–428; 2003 - Extracorporeal Magnetic Stimulation for the Treatment of Stress and Urge Incontinence in Women. Results of 1-year follow-up - Ali Ünsal, Remzi Saglam and Ersin Cimentepe

### Article 15

2004 BJU INTERNATIONAL - Functional extracorporeal magnetic stimulation as a treatment for female urinary incontinence: 'the chair' - D.D. CHANDI, P.M. GROENENDIJK and P.L. VENEMA

### Article 16

2005 BJU INTERNATIONAL | 95, 1310 – 1313 |- Extracorporeal pelvic floor magnetic stimulation in children with voiding dysfunction - JAE WOOK KIM, MYOUNG JIN KIM, JI YEUN NOH, HYE YOUNG LEE and SANG WON HAN

### Article 17

38th American Society for Laser Medicine and Surgery Annual Conference on “Energy-based Medicine and Science”, April 11-15, 2018 - HIFEM TECHNOLOGY – THE NON-INVASIVE TREATMENT OF URINARY INCONTINENCE - Samuels J., and Guerette N.

### Article 18

Lower urinary tract symptoms · June 2017 - High-power Magnetotherapy: A New Weapon in Urinary Incontinence? - Maria VADALÀ, Beniamino PALMIERI, Andrea MALAGOLI and Carmen LAURINO

### Article 19

Urol Int 2005;74:224–228 - Preliminary Results of the Effect of Extracorporeal Magnetic Stimulation on Urinary Incontinence after Radical Prostatectomy: A Pilot Study - Teruhiko Yokoyama Miyabi Inoue Osamu Fujita Kunihiro Nozaki Hiroyuki Nose Hiromi Kumon





	<b>Identification of the article</b>	<b>Scope/Treatment</b>	<b>Patients, Population, Statical analysis</b>	<b>Results / Clinical Benefits</b>	<b>Conclusions</b>
13	International Urogynecology Journal 2006 - Symptom change in women with overactive bladder after extracorporeal magnetic stimulation: a prospective trial - Ho Choe Myung-Soo Choo. Kyu-Sung Lee	The purpose of this study was to prospectively evaluate symptom change after discontinuation of extracorporeal magnetic stimulation (EMS) in women with overactive bladder (OAB). Patients were treated for 20 minutes (10 Hz), twice weekly for 8 weeks.	A total of 48 women with OAB were included. Changes in AOB symptoms at 2, 12 and 24 weeks after discontinuing the EMS were evaluated. Statistical Analysis were done.	Twenty-seven (56.3%) patients were cured compared with the baseline at 2 weeks: the cure rate was determined as 68.8%, (33/48 patients). 56.3% (27/48), and 50% (8/6) for urgency, frequency, and urge incontinence, respectively. The mean number of voids per 24 h was decreased by 42.8% (from 14.5+4.3, to 8.3+1.5, P<0.001) at 2 weeks after treatment. Maximum voided volume did not change significantly. but the mean voided volume increased significantly after stimulation. Twenty-six (96.3%) patients among the 27patients who achieved a cure at 3 weeks, maintained improvement at 24 weeks; The therapeutic effect on urgency, frequency, and urgency incontinence persisted in 26(78.8%) of 33 patients, 26 (96.3%) of 27 patients. and six(75%) of eight patients, respectively. There were no significant changes in urodynamic parameters. Of the 14 patients with destrutor	This data suggest EMS may have a significant carry-over effect in well-selected OAB patients.



				overactivity, the condition was not longer observed in four- (28.6%) patients.	
14	<p>Scand J Urol Nephrol 37: 424–428; 2003 - Extracorporeal Magnetic Stimulation for the Treatment of Stress and Urge Incontinence in Women. Results of 1-year follow-up- Ali Ünsal, Remzi Saglam and Ersin Cimentepe</p>	<p>The purpose was To evaluate the clinical efficacy of extracorporeal magnetic stimulation for the treatment of stress and urge urinary incontinence in women. Pelvic floor muscle stimulation was performed for 20 min (10 min at 5 Hz and 10 min at 50 Hz) twice a week for a total of 8 weeks.</p>	<p>A total of 35 patients with stress incontinence and 17 with urge incontinence were enrolled in this study. All patients were asked to keep a 3-day voiding diary. A pad-weighing test was done for each patient at their first visit. The mean follow-up period was 16.8 months (range 12–32 months). A total of 44 patients completed 1 year of follow-up and were re-evaluated by means of voiding diary, pad-weighing test and cystometric study. Statistical analysis were done.</p>	<p>Of the 44 patients, 11 (38%) with stress incontinence and 6 (40%) with urge incontinence were cured 1 year after the treatment. In addition, there was an improvement in symptoms in 12 patients (41%) in the stress group and 7 (47%) in the urge group. Pad weight was reduced from 15.4 to 5.8 g in the stress group and from 12.4 to 4.7 g in the urge group (p = 0.000 and 0.001, respectively). Mean Valsalva leak point pressure was increased from 87.3 15.9 to 118.0 11.0 cmH2O in the stress group (p = 0.000).</p>	<p>Extracorporeal magnetic stimulation therapy offers a non-invasive, effective and painless treatment for stress and urge incontinence in women.</p>



15	2004 BJU INTERNATIONAL - Functional extracorporeal magnetic stimulation as a treatment for female urinary incontinence: 'the chair' - D.D. CHANDI, P.M. GROENENDIJK and P.L. VENEMA	To evaluate, in a prospective study, the efficiency and applicability of functional magnetic stimulation (FMS) of the pelvic floor for treating urinary incontinence in women. patients were treated twice weekly for 8 weeks	24 patients were treated twice weekly for 8 weeks (12 with urge incontinence and 12 with a mixture of urge and stress incontinence). The outcome was assessed urodynamically, by a pad test, and by patient satisfaction. Statistical analysis were done	In 14 of the 24 patients (58%) incontinence improved; three were completely dry. After treatment the voiding frequency decreased significantly from that before treatment. The treatment was effective in six of the 12 patients with urge incontinence and in eight of the 12 with mixed incontinence. The pad test before and after therapy for all patients showed an improvement in the loss of urine; in those with mixed incontinence this loss did not improve significantly but in those urge incontinence it did. Most patients were satisfied with the treatment; the subjectivity score for all patients improved significantly and most (70%) of all patients reported an improvement, while 30% did not, or reported a deterioration (one).	FMS is a safe, noninvasive and painless treatment for urinary incontinence; it is effective and easy to administer as an outpatient treatment.
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<p>16</p>	<p>2005 BJU INTERNATIONAL   95, 1310 – 1313   Extracorporeal pelvic floor magnetic stimulation in children with voiding dysfunction - JAE WOOK KIM, MYOUNG JIN KIM, JI YEUN NOH, HYE YOUNG LEE and SANG WON HAN</p>	<p>To determine the effect of extracorporeal pelvic floor magnetic stimulation in children with an overactive bladder, as although such stimulation is an effective treatment for voiding dysfunction such as urge incontinence (UI) and urgency-frequency syndrome, experience in children is scarce. The children were grouped into those with UI only, not onosymptomatic nocturnal enuresis (nMNE), or MNE, according to their symptoms. magnetic stimulation being administered twice a week for 4 weeks using a size-adjusted magnetic chair (each session took 20 min).</p>	<p>This prospective study included 42 children diagnosed with an overactive bladder. Complete follow-up data were available by the end of the study for 34 of the 42 children (24 of 29 boys and 10 of 13 girls, mean age 9 (2.2) for Ui only group and mean age 8.2 (2.3) for nMNE group and mean age 8.7 ( 1.2 for group MNE)); Clinical variables were assessed by recording a voiding and nocturnal enuresis diary before and after magnetic stimulation.</p>	<p>The UI only and nMNE group had a significant decrease in voiding frequency and frequency of UI (P &lt; 0.05); the MNE group also had a significant decrease in voiding frequency (P &lt; 0.05). There was a significant increase in functional bladder capacity in all groups (P &lt; 0.05) but no significant decrease in the mean volume and frequency of NE in the nMNE and MNE groups (P &gt; 0.05).</p>	<p>Extracorporeal pelvic floor magnetic stimulation has an acute effect on voiding dysfunction such as urge syndrome in children. However, controlled studies with a sham-stimulation group and various durations of stimulation are necessary for its application as a primary treatment for voiding dysfunction in children.</p>
<p>17</p>	<p>38th American Society for Laser Medicine and Surgery Annual Conference on “Energy-based Medicine and Science”, April 11-15, 2018 - HIFEM</p>	<p>This study sought to report on results of a novel non-surgical treatment (HIFEM) that may provide an affordable and discrete solution to this common</p>	<p>20 women, 45 to 77 years who presented with urinary incontinence including stress, urge and mixed UI, were included in a pilot study. Twenty patients completed King’s Health Questionnaire (KHQ) pre- and post-treatment. The same data was collected during 3 and 6-month follow-up as well.</p>	<p>Treatment with the HIFEM technology significantly improved QoL scores in all patients. There was a 60% improvement. in both parts of the KHQ which were maintained through the 6-</p>	<p>Results suggest that HIFEM technology significantly improves the QoL and reduces UI in post-partum and</p>



	<p>TECHNOLOGY – THE NON-INVASIVE TREATMENT OF URINARY INCONTINENCE - Samuels J., and Guerette N.</p>	<p>problem. All patients completed a total of 6 treatments performed twice weekly for 3 consecutive weeks.</p>	<p>Additionally, patients reported the frequency of urinary leakage episodes and pad usage. Statistical analysis were done.</p>	<p>month follow-up (<math>p &lt; 0.05</math>). Nearly 75% of patients significantly decreased urinary leakage or achieved total dryness and maintained these results through follow-up. Pre-treatment, 16 patients used on average 2 hygienic pads per 24 hour period. During 3-month follow-up, 6 patients used 0.6 pads, 10 patients were completely dry. Twenty patients completed the 6-month follow-up, with eleven patients completely dry and 5 patients used 0.5 pads per 24 hour period. The vast majority of the patients decreased usage of hygienic pads to a minimum or totally eliminated usage.</p>	<p>menopausal female patients who present with all types of UI. This study confirms that further investigation is warranted.</p>
18	<p>Lower urinary tract symptoms · June 2017 - High-power Magnetotherapy: A New Weapon in Urinary Incontinence? - Maria VADALÀ, Beniamino PALMIERI, Andrea MALAGOLI and Carmen LAURINO</p>	<p>In this study, authors evaluated the therapeutic efficacy of functional magnetic stimulation (FMS) as potential UI treatment with improvements in the pelvic floor musculature, urodynamic tests and quality of life. Patients were treated with FMS (20min/session) twice a week for 3weeks.</p>	<p>A total of 20 UI patients (10 females and 10 men, mean age 64, 14years), including 10 with stress UI, four with urgency UI and six with mixed UI were enrolled in this study. The patients' impressions, records in urinary diaries, and scores of three life stress questionnaires (overactive bladder symptom questionnaire [OAB-q], urogenital distress inventory questionnaire-short form [UDI-6], incontinence impact questionnaire-short form [IIQ-7]) were performed pre- and post-treatment. Statistical analysis were done.</p>	<p>Significant reductions (<math>P &lt; 0.01</math>) of micturition number and nocturia after magnetic treatment were evidenced. The urodynamic tests recorded a significant increase in cystometric capacity (<math>147 \pm 51.3\%</math>), in maximum urethral closure pressure (<math>110 \pm 34\%</math>), in urethral functional length (<math>99.8 \pm 51.8\%</math>), and in pressure transmission</p>	<p>These preliminary findings suggest that FMS with Magneto STYM (twice weekly for 3weeks) improves the UI and may be an effective treatment for this urogenital disease.</p>



				ratio (147±51.3%) values compared with the baseline values.	
19	Urol Int 2005; 74:224–228 - Preliminary Results of the Effect of Extracorporeal Magnetic Stimulation on Urinary Incontinence after Radical Prostatectomy: A Pilot Study - Teruhiko Yokoyama Miyabi Inoue Osamu Fujita Kunihiro Nozaki Hiroyuki Nose Hiromi Kumon	The aim was to investigate the clinical effects of ExMS on urinary incontinence after retropubic radical prostatectomy. Treatment sessions were for 20 min, twice a week for 2 months. The frequency of the pulse field was 10 Hz for 10 min, followed by a second treatment at 50 Hz for 10 min.	Ten patients (range age 63-74) who had suffered from urinary incontinence for more than 12 months following radical prostatectomy were enrolled in this study. 8 of the 10 patients showed stress urinary incontinence due to sphincter insufficiency, and the other 2 patients suffered from urge incontinence. Objective and subjective measures included voiding diaries, 1-hour pad weight testing, and a quality of life survey at 1, 2, 3, and 6 months after starting the treatment. Urodynamic studies were performed before and after treatment.	Three patients became dry (30%), 3 patients improved (30%), and 4 patients showed stationary symptoms (40%). In the 1-hour pad weight testing, the mean pad weight decreased from 25 to 10.3 g, and the quality of life scores had improved from 70.5 to 84.9 2 months after treatment. The frequency of leak episodes per day was reduced from 5.0 times before to 1.9 times after treatment. In the urodynamic study, mean maximum cystometric capacity and Valsalva leak point pressure increased from 197.8 ± 53.2 to 309.8 ± 85.3 ml and from 67.3 ± 22.6 to 97.1 ± 22.7 cm H <sub>2</sub> O after treatment, respectively (p < 0.05). 3 of 6 patients who showed improvement returned to the baseline values within 12 months after treatment and requested maintenance ExMS therapy. No side effects were observed.	ExMS therapy offered a new option for urinary incontinence treatment after radical prostatectomy. Further studies are required to determine how long the benefits of treatment last and whether maintenance therapy is necessary.

### 3. Mixed Urinary Incontinence

#### Article 20

Lasers in Surgery and Medicine (2019)- Safety and Efficacy of a Non-Invasive High-Intensity Focused Electromagnetic Field (HIFEM) Device for Treatment of Urinary Incontinence and Enhancement of Quality of Life - Julene B. Samuels, Andrea Pezzella, Joseph Berenholz and Red Alinsod

#### Article 21

UROLOGY 63: 264–267, 2004. © 2004 Elsevier Inc. - COMPARATIVE STUDY OF EFFECTS OF EXTRACORPOREAL MAGNETIC INNERVATION VERSUS ELECTRICAL STIMULATION FOR URINARY INCONTINENCE AFTER RADICAL PROSTATECTOMY- TERUHIKO YOKOYAMA, JUN NISHIGUCHI, TOYOHICO WATANABE, HIROYUKI NOSE, KUNIHIRO NOZAKI, OSAMU FUJITA, MIYABI INOUE, AND HIROMI KUMON

#### Article 22

Medical & Clinical Research, 2018, Volume 3 | Issue 2 - Safety And Preliminary Efficacy of Magnetic Stimulation of Pelvic Floor with Hifem Technology in Urinary Incontinence - Delgado Cidranes and Estrada Blanco.

#### Article 23

38th American Society for Laser Medicine and Surgery Annual Conference on “Energy-based Medicine and Science”, April 11-15, 2018 - HIFEM TECHNOLOGY – THE NON-INVASIVE TREATMENT OF URINARY INCONTINENCE - Samuels J., and Guerette N

#### Article 24

Lower urinary tract symptoms · June 2017 - High-power Magnetotherapy: A New Weapon in Urinary Incontinence? - Maria VADAL`A, Beniamino PALMIERI, Andrea MALAGOLI and Carmen LAURINO

#### Article 25

2004 BJU INTERNATIONAL - Functional extracorporeal magnetic stimulation as a treatment for female urinary incontinence: ‘the chair’ - D.D. CHANDI, P.M. GROENENDIJK and P.L. VENEMA



	<b>Identification of the article</b>	<b>Scope/Treatment</b>	<b>Patients, Population, Statical analysis</b>	<b>Results / Clinical Benefits</b>	<b>Conclusions</b>
20	Lasers in Surgery and Medicine (2019) - Safety and Efficacy of a Non-Invasive High-Intensity Focused Electromagnetic Field (HIFEM) Device for Treatment of Urinary Incontinence and Enhancement of Quality of Life - Julene B. Samuels, Andrea Pezzella, Joseph Berenholz and Red Alinsod	The aim of this study was to evaluate the safety and efficacy of a highintensity focused electromagnetic technology (HIFEM) for treatment of urinary incontinence with emphasis on effects on prospective patients' quality of life. Patients received six HIFEM treatments (2 per week) in duration of 28minutes.	A total of 75 women (55.45 ± 12.80 years, 1.85 ±1.28 deliveries) who showed symptoms of stress, urge, or mixed urinary incontinence were enrolled. Outcomes were evaluated after the sixth treatment and at the 3-month follow-up. The primary outcome was to assess changes in urinary incontinence by the International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF) and changes in the number of absorbent pads used per day. The secondary outcome was subjective evaluation of the therapy and self-reported changes in quality of life. Statistical analysis were done.	After the sixth session, 61 out of 75 patients (81.33%) reported significant reduction of their symptoms. The average improvement of 49.93% in ICIQ-SF score was observed after the sixth treatment, which further increased to 64.42% at the follow-up (both P<0.001). Individually, the highest level of improvement was reached in patients suffering from mixed urinary incontinence (69.90%). The reduction of absorbent pads averaged 43.80% after the sixth treatment and 53.68% at 3 months (both P<0.001), while almost 70% of patients (30 out of 43) reported decreased number of used pads. At the follow-up, a highly significant medium correlation (r=0.53, P<0.001) was found between the ICIQ-SF score improvement and the reduction in pad usage. A substantial decrease in the frequency of urine leakage triggers was documented.	This study demonstrated that HIFEM technology is able to safely and effectively treat a wide range of patients suffering from urinary incontinence. After six treatments, an improvement in ICIQ-SF score and reduction in absorbent pads usage was observed. Based on subjective evaluation, these changes positively influenced quality of life.





21	<p>UROLOGY 63: 264–267, 2004. © 2004 Elsevier Inc. - COMPARATIVE STUDY OF EFFECTS OF EXTRACORPOREAL MAGNETIC INNERVATION VERSUS ELECTRICAL STIMULATION FOR URINARY INCONTINENCE AFTER RADICAL PROSTATECTOMY- TERUHIKO YOKOYAMA, JUN NISHIGUCHI, TOYOHICO WATANABE, HIROYUKI NOSE, KUNIHICO NOZAKI, OSAMU FUJITA, MIYABI INOUE, AND HIROMI KUMON</p>	<p>To perform a randomized comparative study to investigate the clinical effects of extracorporeal magnetic innervation (ExMI) and functional electrical stimulation (FES) on urinary incontinence after retropubic radical prostatectomy. Pulses of 20-Hz square waves at a 300- s pulse duration were used for 15 minutes twice daily for 1 month. For ExMI, the Neocontrol system was used. The treatment sessions were for 20 minutes, twice a week for 2 months. The frequency of the pulse field was 10 Hz for 10 minutes, followed by a second treatment at 50 Hz for 10 minutes. For the control group, only pelvic floor muscle exercises were performed</p>	<p>Thirty-six patients (Age mean <math>67.2 \pm 6.7</math> (for FES) <math>68.2 \pm 4.9</math> (for ExMI) and <math>66.2 \pm 7.6</math> (for ncontrol group)) with urinary incontinence after radical prostatectomy were randomly assigned to three groups (12 patients each in the FES, ExMI, and control groups). For FES, an anal electrode was used. Objective measures included bladder diaries, 24-hour pad weight testing, and a quality-of-life survey, at 1, 2, and 4 weeks and 2, 3, 4, 5, and 6 months after removing the catheter.</p>	<p>The leakage weight during the 24 hours after removing the catheter was 684, 698, and 664 g for the FES, ExMI, and control groups, respectively. At 1 month, it was 72, 83, and 175 g (FES versus control, P 0.05) and at 2 months was 54, 18, and 92 g (ExMI versus control, P 0.05) in the FES, ExMI, and control groups, respectively. Finally, 6 months later, the average 24-hour leakage weight was less than 10 g in all groups. The quality-of-life measures decreased to 55.1, 57.8, and 51.6 in the FES, ExMI, and control groups, respectively, 1 week after removing the catheter, but gradually improved over time in all groups. No statistically significant differences were noted among the three groups.</p>	<p>ExMI and FES therapies offered earlier continence compared with the control group after radical prostatectomy. Authors consider ExMI and FES to be recommendable options for patients who want quick improvement of postoperative urinary incontinence</p>
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22	<p>Medical &amp; Clinical Research, 2018, Volume 3   Issue 2 - Safety And Preliminary Efficacy of Magnetic Stimulation of Pelvic Floor with Hifem Technology in Urinary Incontinence - Delgado Cidranes and Estrada Blanco.</p>	<p>Prospective study to evaluate the safety and preliminary effectiveness of the use of BTL EMSELLA magnetic stimulation in urinary incontinence. Patients were treated with 6 sessions of BTL EMSELLA during three weeks. Follow-up after three months.</p>	<p>Thirty-two patients with light and moderate urinary incontinence were recruited in this study. Initially the patients underwent a quality of life test before and after treatment, evaluation with advanced ultrasound using elastography to measure the initial tissue's elasticity and be able to compare after treatment, clinical functional evaluation and urodynamic test.</p>	<p>All the patients finished the treatment sessions. Two patients reported increased pain after treatment in the first session corresponding to a VAS scale greater than 5 with duration greater than three hours. The treatment was highly satisfactory in 84,4% of the patients. After the first three months the improvement was maintained in 77% of the patients. No muscle injuries were observed. Elastographic changes and improvement of muscle tone were detected by advanced ultrasound (elastography) in 100% of patients.</p>	<p>BTL EMSELLA is safe, well tolerated and effective for the treatment of mild and moderate urinary incontinence. The observed elastographic changes demonstrate the improvement of pelvic floor muscle tone after treatment. A reduction in the symptoms of urinary incontinence was demonstrated.</p>
23	<p>38th American Society for Laser Medicine and Surgery Annual Conference on “Energy-based Medicine and Science”, April 11-15, 2018 - HIFEM TECHNOLOGY – THE NON-INVASIVE TREATMENT OF URINARY INCONTINENCE -</p>	<p>This study sought to report on results of a novel non-surgical treatment (HIFEM) that may provide an affordable and discrete solution to this common problem. All patients completed a total of 6 treatments performed twice weekly for 3 consecutive weeks.</p>	<p>20 women, 45 to 77 years who presented with urinary incontinence including stress, urge and mixed UI, were included in a pilot study. Twenty patients completed King’s Health Questionnaire (KHQ) pre- and post-treatment. The same data was collected during 3 and 6-month follow-up as well. Additionally, patients reported the frequency of urinary leakage episodes and pad usage. Statistical analysis were done.</p>	<p>Treatment with the HIFEM technology significantly improved QoL scores in all patients. There was a 60% improvement. in both parts of the KHQ which were maintained through the 6-month follow-up (p&lt;0.05). Nearly 75% of patients significantly decreased urinary leakage or achieved total dryness and maintained these results through follow-</p>	<p>Results suggest that HIFEM technology significantly improves the QoL and reduces UI in post-partum and menopausal female patients who present with all types of UI. This study confirms that further investigation is warranted.</p>



	Samuels J., and Guerette N.			up. Pre-treatment, 16 patients used on average 2 hygienic pads per 24 hour period. During 3-month follow-up, 6 patients used 0.6 pads, 10 patients were completely dry. Twenty patients completed the 6-month follow-up, with eleven patients completely dry and 5 patients used 0.5 pads per 24 hour period. The vast majority of the patients decreased usage of hygienic pads to a minimum or totally eliminated usage.	
24	Lower urinary tract symptoms · June 2017 - High-power Magnetotherapy: A New Weapon in Urinary Incontinence? - Maria VADALÀ, Beniamino PALMIERI, Andrea MALAGOLI and Carmen LAURINO	In this study, authors evaluated the therapeutic efficacy of functional magnetic stimulation (FMS) as potential UI treatment with improvements in the pelvic floor musculature, urodynamic tests and quality of life. Patients were treated with FMS (20min/session) twice a week for 3weeks.	A total of 20 UI patients (10 females and 10 men, mean age 64, 14years), including 10 with stress UI, four with urgency UI and six with mixed UI were enrolled in this study. The patients' impressions, records in urinary diaries, and scores of three life stress questionnaires (overactive bladder symptom questionnaire [OAB-q], urogenital distress inventory questionnaire-short form [UDI-6], incontinence impact questionnaire-short form [IIQ-7]) were performed pre- and post-treatment. Statistical analysis were done.	Significant reductions ( $P<0.01$ ) of micturition number and nocturia after magnetic treatment were evidenced.  The urodynamic tests recorded a significant increase in cystometric capacity ( $147\pm 51.3\%$ ), in maximum urethral closure pressure ( $110\pm 34\%$ ), in urethral functional length ( $99.8\pm 51.8\%$ ), and in pressure transmission ratio ( $147\pm 51.3\%$ ) values compared with the baseline values.	These preliminary findings suggest that FMS with Magneto STYM (twice weekly for 3weeks) improves the UI and may be an effective treatment for this urogenital disease.



25	2004 BJU INTERNATIONAL - Functional extracorporeal magnetic stimulation as a treatment for female urinary incontinence: 'the chair' - D.D. CHANDI, P.M. GROENENDIJK and P.L. VENEMA	To evaluate, in a prospective study, the efficiency and applicability of functional magnetic stimulation (FMS) of the pelvic floor for treating urinary incontinence in women. patients were treated twice weekly for 8 weeks	24 patients were treated twice weekly for 8 weeks (12 with urge incontinence and 12 with a mixture of urge and stress incontinence). The outcome was assessed urodynamically, by a pad test, and by patient satisfaction. Statistical analysis were done	In 14 of the 24 patients (58%) incontinence improved; three were completely dry. After treatment the voiding frequency decreased significantly from that before treatment. The treatment was effective in six of the 12 patients with urge incontinence and in eight of the 12 with mixed incontinence. The pad test before and after therapy for all patients showed an improvement in the loss of urine; in those with mixed incontinence this loss did not improve significantly but in those urge incontinence it did. Most patients were satisfied with the treatment; the subjectivity score for all patients improved significantly and most (70%) of all patients reported an improvement, while 30% did not, or reported a deterioration (one).	FMS is a safe, noninvasive and painless treatment for urinary incontinence; it is effective and easy to administer as an outpatient treatment.
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## **4. Pelvic Floor Muscle Strengthening**

Article 26

THE JOURNAL OF UROLOGY (2005), volume 173, 2044-2047 - A  
PROSPECTIVE, RANDOMIZED, PLACEBO CONTROLLED, DOUBLE-  
BLIND STUDY OF PELVIC ELECTROMAGNETIC THERAPY FOR THE  
TREATMENT OF CHRONIC PELVIC PAIN SYNDROME WITH 1 YEAR OF  
FOLLOWUP- E. ROWE, C. SMITH, L. LAVERICK, J. ELKABIR, R. O'N  
WITHEROW AND A. PATEL



	<b>Identification of the article</b>	<b>Scope/Treatment</b>	<b>Patients, Population, Statical analysis</b>	<b>Results / Clinical Benefits</b>	<b>Conclusions</b>
26	<p>THE JOURNAL OF UROLOGY (2005), volume 173, 2044-2047 - A PROSPECTIVE, RANDOMIZED, PLACEBO CONTROLLED, DOUBLE-BLIND STUDY OF PELVIC ELECTROMAGNETIC THERAPY FOR THE TREATMENT OF CHRONIC PELVIC PAIN SYNDROME WITH 1 YEAR OF FOLLOWUP- E. ROWE, C. SMITH, L. LAVERICK, J. ELKABIR, R. O'N WITHEROW AND A. PATEL</p>	<p>Male chronic pelvic pain syndrome is a condition of uncertain etiology and treatment is often unsatisfactory. There is evidence that the symptom complex may result from pelvic floor muscular dysfunction and/or neural hypersensitivity/inflammation. Authors hypothesized that the application of electromagnetic therapy may have a neuromodulating effect on pelvic floor spasm and neural hypersensitivity. Active therapy consisted of 15 minutes of pelvic floor stimulation at a frequency of 10 Hz, followed by a further 15 minutes at 50 Hz, twice weekly for 4 weeks.</p>	<p>A total of 21 men (mean age of 47.8 years (range 25 to 67)) attending the urology outpatient clinic with a diagnosis of NIDDK category IIIA or IIIB prostatitis syndrome were enrolled in this study. Patients were evaluated at baseline, 3 months and 1 year after treatment using validated visual analog scores. Statistical analysis were done.</p>	<p>The pain score decreased significantly in those receiving active treatment from a mean baseline of 21.7 of 50 to 14.7 of 50 at 3 months (95% CI 3.57 to 12.43, p 0.05) and to 11.9 of 50 at 1 year (95% CI 2.8 to 18.7, p 0.05). The mean pain score in the placebo group remained relatively unchanged for the same periods. Mean urinary symptom scores showed a significant decrease from 17.1 of 40 at baseline to 11.7 of 40 at 3 months in those receiving active treatment (95% CI 1.2 to 12.4, p 0.05). While mean urinary symptom scores remained below baseline at the 1-year followup, improvement in the actively treated group no longer achieved statistical significance. There was no corresponding improvement in urinary symptoms in the placebo group, which changed little from the baseline of 18.9 of 40 to</p>	<p>The novel use of pelvic floor electromagnetic therapy may be a promising new noninvasive option for chronic pelvic pain syndrome in men.</p>



Dr.ARNOLD

				19.3 of 40 at 3 months (95% CI 6.5 to 5.64, p 0.05) and 15.6 of 40 at 1 year (95% CI 11.83 to 10.23, p 0.05)	
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## 5. Fecal Incontinence

### Article 27

Open Med (Wars). 2020 Jan 30 - Effects of extracorporeal magnetic stimulation in fecal incontinence- Brusciano L, Gambardella C, Gualtieri G, Terracciano G, Tolone S, Schiano di Visconte M, Grossi U, Del Genio G, Docimo L.

### Article 28

UROLOGY 63: 210–212, 2004 - Treatment of Urinary and Fecal Incontinence with Functional Magnetic Stimulation- Ahmed Shafik





	<b>Identification of the article</b>	<b>Scope/Treatment</b>	<b>Patients, Population, Statical analysis</b>	<b>Results / Clinical Benefits</b>	<b>Conclusions</b>
27	Open Med (Wars). 2020 Jan 30 - Effects of extracorporeal magnetic stimulation in fecal incontinence- Brusciano L, Gambardella C, Gualtieri G, Terracciano G, Tolone S, Schiano di Visconte M, Grossi U, Del Genio G, Docimo L.	The aim of this study was to investigate the effectiveness of functional extracorporeal magnetic stimulation (FMS) as a non-undressed and no-probe-needed alternative technique to other functional therapies in patients affected by idiopathic FI, as an option for functional pelvic floor treatment. The intensity of the stimulation was 50-60 Hz, patients seated for an average time of 15 minutes on the chair, once weekly for 8 weeks.	Thirty patients met the aforementioned inclusion criteria, 26 females (86%) and 4 males (16%). Nine patients suffered of idiopathic FI (4 males and 5 females), 21 females had previously given birth, and 7 of them had undergone episiotomy reporting a I-II degree according to Sultan classification of perineal obstetric injury. Overall mean age was 65 (range 38–74). Seven patients were affected by type 2 diabetes. Data were analyzed using the statistical package for social sciences (SPSS, version 16.0, Chicago, IL). Qualitative data are expressed as percent, and quantitative data are expressed as the means. Statistical significance was defined as $p < 0.05$ with a confidence interval (CI) at 95%.	After treatment, a significant improvement of the CCIFS was recorded in 24 patients (80%). The mean CCIFS post-treatment value was 4.7, with a mean value reduction of 60% ( $p < 0.05$ ), its deducible clinical correlation was given by a statistically significant reduction of liquid and solid stool leakage per week. Physical examination after treatment showed incorrect synergies in 3/30 of the patients (10%), involving buttocks and adductors, whereas abdominal muscles were stimulated in none of the patients. FiQL domains scores improved in 27 out of 30 patients (90%). Post-treatment FiQL scores were 3.2, 2.7, 3.6, and 2.4 regarding lifestyle, coping, depression, and embarrassment patterns respectively. No statistically changes were recorded in anal manometry after the eight weeks' treatment time. In fact, the mean basal pression value was 48 mmHg (36–68 mmHg)	FMS of the pelvic floor is an effective treatment for idiopathic fecal incontinence, resulting in patients improved QOL and decrease of incontinence scores, comparable to conventional anal electrostimulation. Extracorporeal magnetic stimulation is a comfortable technique as it avoids patient embarrassment through no need to get undressed; it also eliminates the discomfort and invasiveness related to the anal probe. Further long-term and comparative studies are needed to investigate the efficacy of the treatment in a large population with pelvic floor disorders.



				and the mean maximum voluntary contraction value was 114 mmHg with an average duration of 15 seconds.	
28	UROLOGY 63: 210–212, 2004 - Treatment of Urinary and Fecal Incontinence with Functional Magnetic Stimulation- Ahmed Shafik	To investigate the effect of MS of the pudendal nerve in patients with neurogenic urinary and fecal incontinence.	Patients with neurogenic urinary and fecal Incontinence.	-	The aforementioned results suggest that MS induced an electric field, which seems to neuromodulate the sacral roots that innervate the bladder and rectum. The MS appears to also activate the pudendal and vagal nerves. However, further studies are required to investigate the exact mechanism of action of MS in improving urinary and fecal incontinence, evacuating the neurogenic bladder and rectum, and inducing defecation in rectal inertia.