

HIFEM® TECHNOLOGY IN TREATMENT OF PELVIC FLOOR MUSCLES AS A CAUSE OF FEMALE SEXUAL DYSFUNCTION - MECHANISM OF ACTION

HIFEM* TECHNOLOGY CAUSES DEEP PELVIC FLOOR MUSCLE STIMULATION.

- **Pelvic floor muscles** support the pelvic floor organs, control the **continence** and play a crucial role in adequate **genital arousal and attainment of orgasm**.
- Their weakness or deconditioning provide insufficient activity necessary for **vaginal friction or blood flow, and therefore inhibit orgasmic potential**.
- **HIFEM therapy** key effectiveness is based on **focused electromagnetic energy, in-depth penetration, and stimulation of the entire pelvic floor area**.
- A single HIFEM session brings thousands of **supramaximal pelvic floor muscle contractions**, which are extremely important in **muscle stimulation of women with sexual dysfunction**.

THE ROLE OF THE PELVIC FLOOR MUSCLES IN SEXUAL LIFE

Pelvic floor and its functioning are tightly linked to a healthy female sexual cycle. Pelvic floor muscles (PFM) are responsible for adequate genital arousal and attainment of orgasm. Firmer muscle tone adds intensity to the muscle contractions during orgasm and enables a woman to identify, isolate, and command PFM. The role of PFM is strongly associated with female sexual dysfunction and pelvic floor disorder.

FEMALE SEXUAL DYSFUNCTION

According to the Diagnostic and Statistical Manual of Mental Diseases (DSM), sexual dysfunction is characterized by a disturbance in the processes that characterize the sexual response cycle or by pain associated with sexual intercourse. American Foundation for Urological Disease (AFUD) divided female sexual dysfunction (FSD) into 4 groups: sexual desire disorder, sexual arousal disorder, sexual orgasm disorder, and sexual pain disorders.

FSD AND PELVIC FLOOR DISORDER

The main cause for the development of pelvic floor disorder (PFD) occurs when there is a weakening of pelvic floor muscles and connective tissues. This results in varying degrees of loss of support of the pelvic floor organs in their anatomical position within a woman body. Disorder of PFM may also be a cause of a FSD such as painful intercourse experience (dyspareunia). Causes are increased resting PFM activity. Weak or deconditioned muscles may provide insufficient activity necessary for vaginal friction or blood flow, and inhibit orgasmic potential.

THE TREATMENT OF PELVIC FLOOR MUSCLES AS A CAUSE OF FSD

PFD and FSD are strongly associated with pelvic floor musculature, therefore it is the key tissue to address first. According to the latest studies, women with better PFM function have increased sexual function and satisfaction during intercourse. It has also been proposed that during intercourse, sexual pleasure is enhanced for both partners by genital responses provided by PFM contractions. Furthermore, the female orgasm is strongly associated with oxytocin, a neuropeptide released during the PFM work. It is believed that vaginal sexual feeling closely relates to muscle tone, thus can be improved through muscle education/exercise.

HIGH-INTENSITY FOCUSED ELECTROMAGNETIC TECHNOLOGY (HIFEM)

HIFEM technology uses intense focused electromagnetic fields to trigger intense PFM contractions by depolarizing motoneurons and inducing electric currents in the pelvic floor area. The mechanism of action is based on focused electromagnetic energy with its deep penetration up to 10 cms into the pelvic floor area and supramaximal PFM contractions.

SUPRAMAXIMAL PELVIC FLOOR MUSCLE CONTRACTIONS

Maximal voluntary contraction (MVC) is the greatest amount of tension that could be developed and held physiologically by the muscle, but usually only for a split second. Contractions with a tension higher than MVC are defined as supramaximal. HIFEM causes supramaximal PFM contractions in high-repetition-rate which are independent of brain function and cannot be achieved

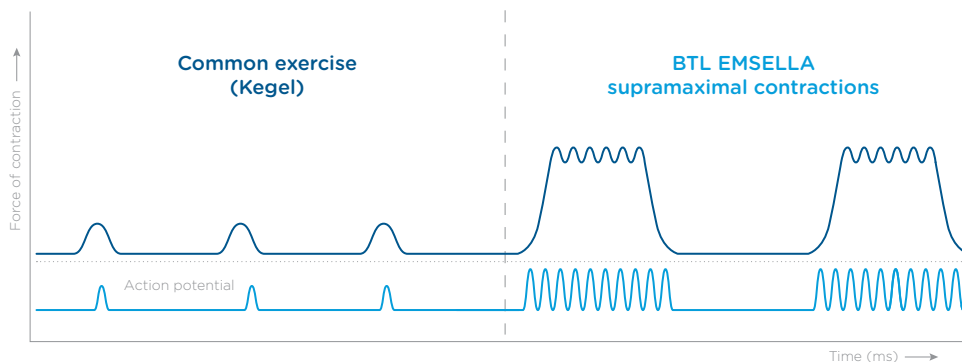


Figure 1: PFM activation using HIFEM technology compared to common exercise (e.g. Kegel).

voluntarily. HIFEM technology is able to create supramaximal PFM contractions and hold them for a couple of seconds (see Figure 1). The key to the effectiveness of HIFEM technology is in the gradually increasing intensity of the focused electromagnetic fields and frequency of pulses, which result in unique vigorosity of the contractions. During 1 session using HIFEM technology, thousands PFM supramaximal contractions are performed. Such effect cannot be achieved through common exercise (e.g. Kegel). This directly modifies the muscle structure, inducing a more efficient growth of myofibrils – muscle fiber hypertrophy, the creation of new protein strands and muscle fibers – muscle fiber hyperplasia. Strengthened and firmed muscles again fully serve as a support for pelvic organs, which are kept in their anatomical positions.

HIFEM THERAPY PROTOCOL

HIFEM therapy protocol takes around 30 minutes and causes enhanced blood circulation through intense PFM stimulation. The stimulation leads to patient's ability to identify, isolate and command PFM during orgasm. This effect is achieved through 3 phase stimulation protocol - intense and gradually increasing PFM stimulation, increased blood supply to PFM due to intense workout followed by PFM relaxation to prevent muscle overloading. Intense pelvic floor workout is accompanied by release of oxytocin. Repetition of these phases and focused electromagnetic energy delivery leads to pelvic floor muscle stimulation, adaptation, and remodeling.

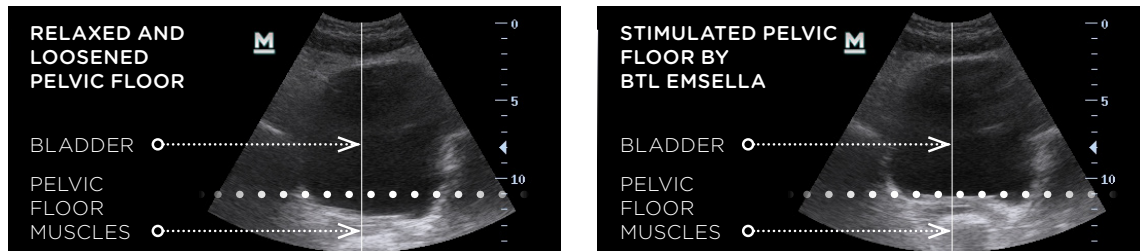


Figure 2: A frontal view of the pelvic floor muscles and bladder using medical ultrasound. Relaxed and loosened pelvic floor muscles and bladder (left). Stimulated and lifted pelvic floor muscles and bladder using HIFEM technology (right).

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