ekegel Physiotherapist Training and Instruction Manual

Introduction: Welcome to the ekegel Physiotherapist Training Program!

This manual is designed to provide you with comprehensive instructions on how to effectively use and incorporate ekegel into your practice to assist your clients in pelvic floor strengthening and incontinence management.

Table of Contents

1. Device Description

ekegel is an advanced Electrical Muscle Stimulator (EMS) device for home use, engineered specifically to strengthen the pelvic floor muscles and control incontinence.

It features a vaginal probe equipped with stainless steel electrodes, delivering gentle yet effective stimulation directly to the pelvic floor muscles. This stimulation closely mirrors natural nerve impulses, prompting the muscles to contract and strengthen.

It also has a mode of Transcutaneous stimulation of Pelvic muscles. The device boasts five intuitively labelled preset training programs and user-friendly push-button controls, ensuring effortless operation for individuals of all ages.

It is meticulously designed to complement traditional pelvic floor exercises, serving as an invaluable aid for those encountering difficulties in engaging their pelvic floor muscles or seeking to refine muscle control.

Principles of Design:

1. **Precision Stimulation:** ekegel delivers precise stimulation directly to the targeted pelvic floor muscles, ensuring optimal efficacy in strengthening and toning.
2. **Natural Impulse Replication:** The device's stimulation replicates natural nerve impulses with remarkable accuracy, offering users a comfortable and familiar sensation.
3. **User-Centric Interface:** With clearly labelled preset programs and straightforward controls, ekegel prioritizes user-friendliness, catering to individuals with varying levels of technological proficiency.
4. **Synergy with Traditional Exercises:** ekegel is meticulously crafted to complement conventional pelvic floor exercises, offering users an additional avenue for enhancing pelvic floor strength
5. and control.
6. **Versatile Application:** ekegel is versatile in its applications, addressing a spectrum of conditions including urinary incontinence (such as stress, urge, mixed types, and post-prostatectomy incontinence), and potentially enhancing sexual intimacy by toning pelvic floor muscles.
7. **Holistic Health Focus:** By facilitating pelvic floor muscle strengthening and control, ekegel is poised to tackle prevalent issues like bladder leakage and incontinence, promoting sustained health and well-being for both genders.

ekegel Medical Device Features: Designed for home healthcare settings, ekegel is a medical device engineered to address symptoms of urinary incontinence. It is intended for use by individuals capable of controlling the device and comprehending its instructions. It is crucial to adhere strictly to its designated purpose and refrain from any alternative use. Furthermore, ekegel is not suitable for children's use without medical supervision. Features of ekegel:

1. **Single-Channel Design:** The device operates on a single-channel unit, offering relief from various forms of incontinence through a tampon-shaped probe.

2. **Comfortable Stimulation:** ekegel delivers gentle stimulation in incremental intensity levels of 0.5 mA per step, ensuring user comfort during treatment.
3. **5 Preset Programmes:** Clinically tested, the device offers five preset programs tailored to address different types of incontinence, including stress, urge, mixed, and a post-treatment tone program for aftercare.
4. **Treatment Timer:** The unit defaults to a 20-minute treatment duration to prevent overexertion of pelvic floor muscles. Users can manually adjust this duration to 20, 30, or 40 minutes as needed.
5. **User-Friendly Operation:** With just three buttons, ekegel simplifies operation and minimizes the risk of accidental setting changes, enhancing user experience.
6. **Large Backlit Screen:** Featuring a large backlit screen, the device offers clear visibility of operation status, current program, and intensity level, facilitating ease of use even in low-light environments.
7. **Memory Functionality:** The device includes memory features such as program retention, automatically starting in the last-used program, tracking treatment duration, and recording average strength utilized for monitoring progress.
8. **Additional TTNS and tSNS Mode:** In addition to its primary functions, ekegel incorporates a mode for Transcutaneous Tibial Nerve Stimulation (TTNS), specifically designed to manage urge incontinence and overactive bladder conditions effectively and Transcutaneous Sacral Nerve Stimulation (tSNS) for Pelvic muscle stimulation for those who cannot use or want to avoid the use of vaginal Probe.

2. Understanding Pelvic Floor Muscles

The pelvic floor muscles serve as the foundation of your pelvis, akin to a hammock or the curved bottom of a bowl. They provide essential support to vital organs such as the bowel, bladder, urethra, and uterus. Extending from the pubic bone at the front to the tailbone at the back. Pelvic floor muscles play several crucial roles:

1. **Organ Support:** Pelvic floor muscles assist in supporting and maintaining the position of abdominal and pelvic organs, ensuring their proper function.
2. **Spinal Stability:** Working in conjunction with abdominal and back muscles, they help stabilize and support the spine, contributing to overall core strength and stability.
3. **Pregnancy and Birth:** In women, pelvic floor muscles provide vital support during pregnancy, aiding in the support of the growing baby, and play a crucial role during the birthing process.
4. **Sexual Function:** These muscles are integral to sexual function, particularly in women. Voluntary contractions, often referred to as squeezing, contribute to sexual sensation and arousal.

However, pelvic floor muscles can weaken or become too tight, leading to various issues:

- **Weakness:** Stretched or weakened pelvic floor muscles may result in inadequate support for pelvic organs, leading to loss of bladder or bowel control.
- **Tightness:** In some cases, pelvic floor muscles may become excessively tight, causing pelvic pain and difficulties in emptying the bladder or bowel completely.

Signs of Pelvic Floor Dysfunction: Recognizing signs of pelvic floor dysfunction is crucial for timely intervention. Common indicators include:

- Accidental urine leakage during activities such as exercise, laughter, coughing, or sneezing.
- Urgency or difficulty reaching the toilet in time.
- Frequent urination.
- Difficulty fully emptying the bladder or bowel.
- Accidental loss of bladder or bowel control.
- Passing wind unintentionally.
- Pelvic pain.
- Painful intercourse.

Symptoms of a prolapse, such as a bulge in the vagina or feelings of heaviness or discomfort in the pelvic region. If left untreated, symptoms of pelvic floor dysfunction can worsen over time. Seeking professional assistance is essential for proper diagnosis and management to alleviate discomfort and prevent further complications.

3. Performing Pelvic Floor Exercises

Incorporating Pelvic Floor Exercises, commonly known as Kegel Exercises, into your daily routine is highly recommended for maintaining pelvic health. Here's a guide to performing these exercises effectively:

1. **Flexibility in Timing:** Kegel exercises can be performed discreetly at any time, making them suitable for various settings such as lying in bed, sitting at a desk, or waiting for transportation. Establishing a daily routine for these exercises enhances consistency and effectiveness.
2. **Identifying Pelvic Floor Muscles:**
    - Insert one or two clean fingers into your vagina and contract the surrounding muscles, lifting them upward toward your belly button. This action creates a squeezing and lifting sensation.
    - Alternatively, attempt to halt the flow of urine during urination. Success indicates activation of the correct muscles. However, this technique is solely for identification purposes and should not be practised routinely. Ensure your bladder is empty before commencing exercises.
3. **Conscious Muscle Engagement:**
    - Recreate the lifting and squeezing sensation using only the identified pelvic floor muscles. Avoid tensing other muscle groups such as legs, stomach, or buttocks, and maintain normal breathing patterns.
4. **Duration of Contraction:**
    - Aim to hold each squeeze or contraction for three to five seconds, then release and allow the muscles to relax fully. Take a five-second rest before repeating the cycle.
5. **Repetition:**
    - Perform approximately ten contractions in this manner during each session.
6. **Frequency:**
    - Repeat the entire process three to four times throughout the day to maximize benefits.

7. **Progression:**
    - Gradually increase the duration of muscle contractions over time, aiming for up to ten seconds per contraction. Ensure longer rest periods between contractions. Prioritize quality over quantity, focusing on strong contractions rather than a high volume of weak ones. If holding for three seconds initially feels challenging, start with a duration that feels comfortable and gradually increase as strength improves.
8. **Utilizing ekegel Pelvic Floor Stimulator:**

Compliance with self-Kegel exercise is difficult and may not give the desired results.

Incorporating your ekegel pelvic floor stimulator alongside Kegel exercises will enhance your understanding of pelvic muscle activation and optimize the benefits derived from your workouts. By diligently integrating ekegel into your routine, you can effectively strengthen and maintain optimal health of your pelvic floor muscles, promoting urinary and bowel control, sexual function, and overall well-being.

4. Types of Incontinence

1. **Stress Incontinence:**
    - Occurs when urine leakage happens during activities such as coughing, sneezing, laughing, or sudden movements. It is particularly prevalent in women who have undergone natural childbirth. This type of incontinence results from weakened pelvic floor muscles, which fail to support the bladder neck and other mechanisms responsible for holding urine in the bladder.
2. **Urge Incontinence:**
    - Involves a sudden and intense urge to urinate, often resulting in involuntary leakage. Individuals with urge incontinence may struggle to hold urine or experience frequent, inconvenient trips to the restroom.
3. **Mixed Incontinence:**
    - Combines symptoms of both stress and urge incontinence, presenting challenges related to weakened pelvic floor muscles and overactive bladder issues simultaneously.

Electrical Muscle Stimulation (EMS) harnesses electrical impulses to induce intense and effective muscular contractions. Widely utilized in medical rehabilitation and sports training, EMS proves beneficial in treating various musculoskeletal conditions, including pelvic floor weakness. By stimulating intact peripheral nerves, EMS prompts muscle contractions in individuals with impaired voluntary muscle function, complementing traditional physical therapy methods such as Kegel exercises.

Advantages of EMS:

- Accelerates treatment progress.
- Suitable for clinical settings and home use.
- Simple and effective method.

Mechanism of EMS: Electrical Pelvic Floor Exercisers (PFE) deliver gentle stimulation directly to the pelvic floor muscles via discreet probes or electrode pads. This stimulation activates the nerves controlling these muscles, inducing contractions that mimic natural muscle activity. With regular use, these contractions strengthen and tone the pelvic floor muscles.

EMS for Urge Incontinence: In cases of urge incontinence, pelvic floor exercisers employ low-frequency stimulation to soothe bladder muscles, reducing involuntary contractions and promoting relaxation. Different frequencies yield distinct effects, with low frequencies aiding in muscle relaxation and circulation improvement, while medium frequencies contribute to muscular structure enhancement.

Transcutaneous Tibial Nerve Stimulation (TTNS): TTNS targets the posterior tibial nerve, a contributor to bladder control. By stimulating this nerve, reflex bladder contractions are inhibited, leading to increased bladder storage capacity and reduced urinary urgency. This stimulation is achieved using surface electrodes placed near the inner ankle, providing a cost-effective and user-friendly method for home-based treatment.

Transcutaneous Sacral Nerve Stimulation (tSNS): Stimulation of the sacral nerves through the skin, typically using surface electrodes placed on the lower back or buttocks. The sacral nerves play a crucial role in controlling the muscles of the pelvic floor, which are responsible for bladder and bowel function. By stimulating these nerves, tSNS can help modulate the activity of these muscles, potentially improving bladder and bowel control. This method is often employed to treat various conditions, including urinary and faecal incontinence.

5. ekegel Programme Settings

Program	Mode Indication on Device	Frequency	Pulse width (uS)	Ramp up & Down (S)	Plateau (S)	Rest (S)	Default Minimum Duration (Mins)
Stress	P1	55	300	1	5	10	20
Urge	P2	10	200	constant			
Mixed	P3	10/55	200/300	con/1	con/5	con/10	5/5 * 2
Tone	P4	35	250	2	3	6	20
TTNS/ tSNS	P5	15	200	Constant			20

Mode P1-P2 P3 P4 for Use with Vaginal probe. Mode P5 for Transcutaneous Tibial nerve and Transcutaneous Sacral Nerve stimulation to be used with Electropad.

Preset Programmes:

1. **Stress Incontinence (MODE P-1):**
    - **Purpose:** Strengthens pelvic floor muscles to resist urinary leakage caused by external pressure (e.g., coughing, sneezing).
    - **Stimulation:** Gentle stimulation induces muscle contractions, building strength over time.
    - **Treatment Duration:** Once a day for one to three months.

    - **Sensation:** Strong drawing in of vaginal muscles, pulling up the pelvic floor.
2. **Urge Incontinence (MODE P-2):**
    - **Purpose:** Soothes bladder (detrusor) muscle to reduce involuntary contractions and prevent unwanted bladder emptying.
    - **Stimulation:** Continuous, gentle stimulation.
    - **Treatment Duration:** Once a day, with improvements visible in less than three weeks.
    - **Sensation:** Soft, vibrating stimulation with noticeable pelvic floor exercise effects post-treatment.
3. **Mixed Incontinence (MODE P-3):**
    - **Purpose:** Addresses both stress and urge incontinence.
    - **Stimulation:** Combines Urge and Stress programmes; first 10 minutes focus on reducing sensitivity, followed by 10 minutes of pelvic floor muscle exercises.
    - **Adjustments:** Increase stimulation strength for effective muscle contraction during the Stress programme.
4. **Tone Programme (MODE P-4):**
    - **Purpose:** Maintains pelvic floor muscle fitness and tone, suitable for regular use.
    - **Treatment Schedule:** Recommended usage approximately twice a week for ongoing muscle maintenance.
    - **Additional Benefits:** Enhances sexual health and enjoyment; essential for sportswomen for improved athletic performance and weightlifting.
    - **Sensation:** Mixture of strong muscle contraction and release, promoting pelvic floor fitness.
5. **Transcutaneous Tibial Nerve Stimulation (TTNS) and Transcutaneous Sacral Nerve Stimulation (MODE P-5):**
    - **Purpose:** Management option for urge incontinence, especially for older individuals and those with neurogenic bladder and those who cannot or do want to use vaginal probe.
    - **Benefits:** Provides relief from urinary incontinence, frequency, urgency, and nocturia without invasive procedures or pharmaceutical side effects.

Stimulation Method for TTNS: Stimulates the posterior tibial nerve via surface electrodes placed near the inner ankle.

Stimulation Method for tSNS: Stimulates via surface electrodes placed on the lower back or buttocks to reach the sacral nerves.

6. Assessment of the Pelvic Floor

1. **Patient History:**
    - Inquire about the patient's medical history, including any previous surgeries, childbirth, pelvic trauma, or chronic health conditions.
    - Gather information about their bladder and bowel habits, urinary symptoms (e.g., frequency, urgency, nocturia), and any episodes of incontinence.
    - Assess their lifestyle factors, such as diet, fluid intake, physical activity, and occupation.
2. **Physical Examination:**

- Perform a comprehensive musculoskeletal assessment, including posture, alignment, and mobility of the pelvis, hips, and spine.
- Evaluate the strength, tone, and endurance of the pelvic floor muscles using digital palpation or a perineometer.
- Assess for signs of pelvic organ prolapse, such as vaginal bulging or descent of pelvic organs.
- Check for any signs of pelvic floor dysfunction, such as pelvic pain, muscle spasms, or trigger points.

3. **Specialized Tests:**
   - Consider additional assessments, such as urodynamic testing, pelvic ultrasound, or electromyography (EMG), to gather more detailed information about bladder function and pelvic floor muscle activity.
4. **Functional Assessment:**
   - Evaluate the patient's ability to perform functional tasks related to bladder and bowel control, such as coughing, sneezing, lifting, and jumping.
   - Assess their pelvic floor muscle coordination and timing during these activities.
5. **Multidisciplinary Collaboration:**
   - Collaborating with other healthcare professionals, including urologists, gynaecologists, colorectal surgeons, and pelvic floor physiotherapists, enhances the holistic management of pelvic floor disorders, ensuring optimal outcomes for patients.

Determining Causes of Incontinence:

Identifying the underlying causes of urinary incontinence is essential for implementing targeted interventions and achieving optimal outcomes. Common etiological factors contributing to urinary incontinence include:

- **Pelvic Floor Weakness:** Weakened or damaged pelvic floor muscles, often resulting from childbirth, aging, hormonal changes, or chronic straining, can lead to stress urinary incontinence.
- **Neurological Disorders:** Conditions affecting nerve function, such as multiple sclerosis, Parkinson's disease, spinal cord injuries, and stroke, may disrupt the neural control of bladder function, causing urge or overflow incontinence.
- **Urinary Tract Infections (UTIs):** Infections of the urinary tract can irritate the bladder lining, leading to urinary urgency, frequency, and incontinence.
- **Obstructive Conditions:** Structural abnormalities or obstructions within the urinary tract, including benign prostatic hyperplasia (BPH) in men, urethral strictures, and pelvic organ prolapse, can interfere with normal bladder function, resulting in urinary retention or overflow incontinence.
- **Medications:** Certain medications, such as diuretics, alpha-blockers, sedatives, and anticholinergic drugs, may affect bladder control and contribute to urinary incontinence as a side effect.
- **Chronic Medical Conditions:** Systemic diseases such as diabetes mellitus, chronic obstructive pulmonary disease (COPD), and heart failure can predispose individuals to urinary incontinence due to their impact on bladder and pelvic floor function.

- **Lifestyle Factors:** Lifestyle habits such as smoking, excessive caffeine or alcohol consumption, obesity, and inadequate fluid intake can exacerbate urinary incontinence symptoms by affecting bladder irritability, pelvic muscle tone, and overall health.
- **Psychological Factors:** Emotional stress, anxiety, depression, and cognitive impairments may influence bladder function and exacerbate urinary incontinence symptoms through complex neurophysiological pathways.

7. Cases Where ekegel Would Be Useful

ekegel offers significant benefits and can be instrumental in various scenarios, including:

1. **Stress Urinary Incontinence (SUI):**
   - ekegel strengthens pelvic floor muscles, providing better support to the bladder and urethra, and reducing urine leakage during activities that increase intra-abdominal pressure, such as coughing, sneezing, or lifting.
2. **Urge Urinary Incontinence (UUI):**
   - ekegel helps calm overactive bladder muscles and improves bladder control by enhancing pelvic floor muscle coordination and inhibiting involuntary contractions.
3. **Mixed Urinary Incontinence (MUI):**
   - ekegel addresses both stress and urge components of mixed incontinence through customized programs targeting pelvic floor muscle strength and coordination.
4. **Pelvic Organ Prolapse (POP):**
   - ekegel can be part of a comprehensive treatment plan to strengthen pelvic floor support structures, alleviating symptoms of POP, such as urinary incontinence and pelvic pressure.
5. **Postpartum Incontinence:**
   - ekegel aids in the recovery of pelvic floor muscles after childbirth, helping women regain bladder control and prevent long-term urinary dysfunction.
6. **Menopausal Incontinence:**
   - ekegel mitigates the effects of hormonal changes on pelvic floor muscle tone and function, reducing symptoms of urinary incontinence associated with menopause.
7. **Neurogenic Bladder Dysfunction:**
   - ekegel complements other forms of treatment for neurogenic bladder conditions, like spinal cord injury or multiple sclerosis, by improving bladder control and reducing urinary leakage.
8. **Preventative Measures:**
   - ekegel can be incorporated into pelvic floor rehabilitation programs for individuals at risk of developing urinary incontinence, such as athletes, older adults, and those with a family history of pelvic floor dysfunction.

Additionally:

- **Pelvic Floor Rehabilitation:** ekegel aids in restoring pelvic floor strength and function following childbirth, surgery, or injury, preventing complications such as urinary incontinence or pelvic organ prolapse.

- **Incontinence Management:** ekegel provides a non-invasive, effective solution for managing urinary incontinence of various types, enhancing quality of life and restoring bladder control.
- **Preventive Care:** Incorporating ekegel into regular pelvic floor maintenance routines helps prevent pelvic floor muscle weakness and associated conditions, reducing the risk of urinary incontinence, pelvic organ prolapse, and sexual dysfunction.
- **Enhancing Sexual Health:** ekegel contributes to enhanced sexual sensation, arousal, and satisfaction by toning pelvic floor muscles and improving vaginal tone, fostering intimacy and well-being in sexual relationships.
- **Pre- and Postnatal Care:** ekegel supports pelvic floor health during pregnancy and aids in postnatal recovery, addressing common issues such as urinary incontinence, pelvic girdle pain, and perineal discomfort following childbirth.
- **Age-Related Changes:** ekegel offers a safe, convenient solution for managing age-related changes in pelvic floor muscles, promoting healthy aging and reducing the risk of urinary incontinence and other pelvic floor disorders.
- **Men's Health:** ekegel is beneficial for men dealing with urinary incontinence following prostate surgery or as a result of aging, helping restore bladder control and improve the overall quality of life. A separate Anal probe may be used for this purpose.

8. Incorporating ekegel into Practice

Integrating ekegel into your clinical practice can enhance the scope and efficacy of pelvic floor rehabilitation and incontinence management. Consider the following strategies for incorporating ekegel into your practice:

- **Patient Education:** Provide comprehensive education on the benefits of pelvic floor muscle training and the role of ekegel in optimizing pelvic health. Empower patients with the knowledge and skills needed to use the device safely and effectively at home.

- **Individualized Treatment Plans:** Tailor treatment plans to each patient's unique needs, considering factors such as pelvic floor muscle strength, type of incontinence, underlying etiology, and treatment goals. Incorporate ekegel as a valuable adjunct to traditional pelvic floor exercises and behavioural therapies.

- **Hands-On Training:** Offer hands-on training sessions to familiarize patients with ekegel's operation, electrode placement, and program selection. Ensure patients feel confident and competent in using the device independently outside of clinical settings.

- **Progress Monitoring:** Regularly assess patient progress and compliance with ekegel therapy, utilizing objective measures such as bladder diaries, pad tests, and pelvic floor

strength evaluations. Adjust treatment parameters as needed to optimize outcomes and address emerging needs.

- **Multidisciplinary Collaboration:** Collaborate with other healthcare professionals, including urologists, gynaecologists, colorectal surgeons, and pelvic floor physiotherapists, to deliver comprehensive, coordinated care for patients with pelvic floor disorders. Share insights and collaborate on treatment plans to achieve optimal outcomes.

- **Outcome Evaluation:** Evaluate the effectiveness of ekegel therapy in improving patient outcomes and achieving treatment goals. Use standardized outcome measures such as the International Consultation on Incontinence Questionnaire (ICIQ) and quality-of-life assessments to quantify changes in symptoms, pelvic floor function, and overall well-being.

- **Continuing Education:** Stay abreast of the latest research, guidelines, and innovations in pelvic floor rehabilitation and incontinence management. Participate in continuing education activities, attend conferences, and engage in peer learning to enhance your knowledge and skills in this specialized area of practice.

Treatment Protocol:

- Begin with a 20- 30 minute session once daily for 4-6 weeks.
- Observe reduction in urgency, frequency, and nocturia.
- Gradually reduce the frequency to 1-2 times weekly for maintenance.

Contraindications:

1. Do not use during pregnancy.
2. Avoid use on broken or irritated skin.
3. Exercise caution with individuals with implanted metallic or electronic devices (e.g., pacemakers).
4. Not suitable for those with epilepsy or undergoing cancer treatment.

Precautions:

1. Always use a water-based lubricant to facilitate insertion of the vaginal probe.
2. Clean and disinfect the probe after each use.
3. Monitor skin for any adverse reactions during and after treatment.

By integrating ekegel into their practice, physiotherapists can offer patients a targeted and effective approach to pelvic floor rehabilitation, addressing the underlying causes of incontinence and promoting optimal bladder health and function.