

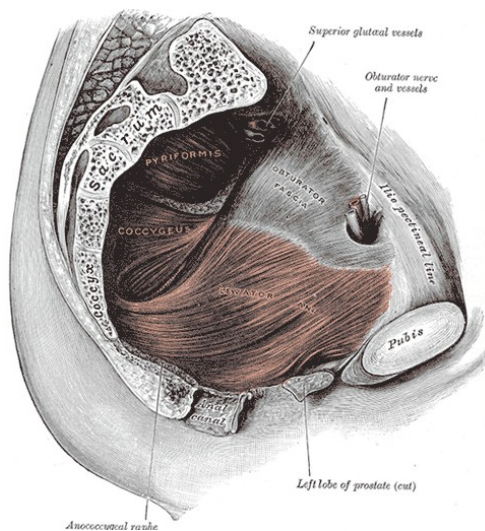


VULVOVAGINAL DISORDERS A PATHWAY TO DIAGNOSIS AND TREATMENT

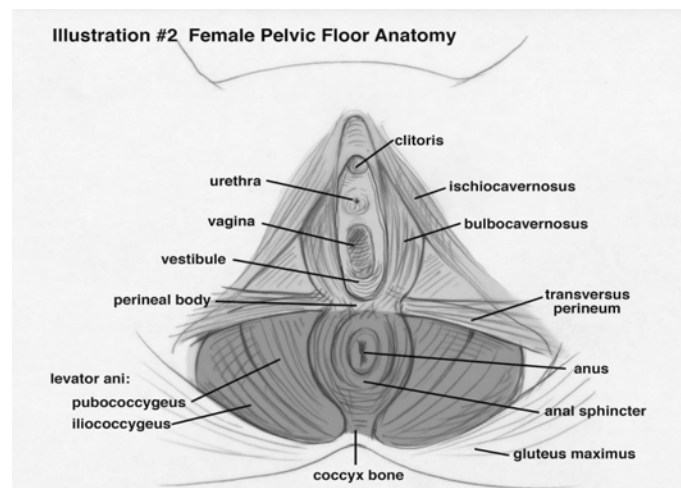
PELVIC FLOOR FUNCTION AND DYSFUNCTION

What is the pelvic floor?

The “pelvic floor” refers to muscles that attach to the front, back, and sides of the pelvic bones, the sacrum (base of the spine), and coccyx (tailbone). These muscles form a bowl-shaped support for the organs in the pelvis, including the bladder, uterus or prostate, and rectum. They surround the urethra, rectum, and vagina. The muscles are key in some of the basic functions of life: storage of urine and feces and tightening and releasing to control evacuation of the bowel and bladder. In women, the pelvic floor relaxes for sexual intercourse.



Female Pelvic floor Anatomy, Saggital (From the Side) View



Female Pelvic Floor Anatomy, View In Stirrups

What happens with pelvic floor dysfunction?

When pelvic floor muscles are not working properly, pelvic floor dysfunction (PFD) results. This dysfunction is characterized by shortened pelvic floor muscles in a constant state of tightening or contraction called pelvic floor tension myalgia (PFTM). When the bowl of muscles of the pelvic floor is constantly contracted, the pelvic organs are pushed up and are under enormous amounts of pressure. In addition to the tightness and tension, PFTM involves muscle weakness and results in urinary leakage, fecal incontinence, pelvic organ prolapse and sexual dysfunction. Besides the tightness, tension and weakness of the muscle hypertonicity, there are knots of muscle spasm called trigger points (TP) located throughout the muscles. These TP refer pain to the lower abdomen, pubic region, hips, perineum, tailbone, and/or lower back.



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What causes pelvic floor tension myalgia?¹

Structural problems:

- **Faulty biomechanics** of feet, knees, hips, pelvis, pubic symphysis, sacroiliac joints, or sacrococcygeal joint
- **Chronic faulty posture**
- **Scoliosis**, “short-leg syndrome”
- **Repetitive movement injuries** (running, gymnastics, dance)
- **Prolonged constriction or extended sitting** especially with unequal weight-bearing or lack of motion

Injury to the pelvic floor:

- **Childbirth**
- **Pelvic surgery**
- **Injury to sacrum or coccyx**
- **Split injury creating a shear force at the public symphysis**
- **“Dysbehaviors“ of the pelvic floor**
- **Repetitive trauma or straining** (constipation, chronic tense holding patterns due to sexual abuse or guilt)
- **Urinary urgency/frequency**
- **Urinary or fecal incontinence**
- **General stress, anxiety, and tension**

Inflammatory pain disorders involving:

- **Pelvic viscera**
 - **Irritable bowel syndrome**
 - **Endometriosis**
 - **Interstitial cystitis/painful bladder**
 - **Recurrent vaginitis**

Repeated pain on penetration (during attempts at intercourse, use of sex toys or tampons, or pelvic examinations) causes women to tighten in a natural defensive response. If the tightening persists, PFTM results.

What are the symptoms of PFD?

Symptoms of PFD include:

- **Urinary urgency, frequency**, hesitancy, stopping and starting of urine stream, painful urination, or incomplete emptying

¹ Sarton J. Physical therapy for Pelvic Pain: Understanding the Musculoskeletal Connection.
<http://www.ureogynecologist.com/physicaltherapy/pelvicfloortension.html>



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- **Constipation**, straining, pain with bowel movements
- Achy pelvic discomfort or pressure
- Vaginal pain (sharp, burning, throbbing or radiating)
- **Unexplained pain** in the abdomen low back, genital area, or rectum
- **Pain with prolonged sitting** (in the coccyx or ischial tuberosities (“sit bones”))
- Pain during or after **intercourse**, orgasm, or sexual stimulation
- Inability to use tampons
- Pain with annual pelvic examination

Side effects of certain medicines such as tricyclic **antidepressants** (amitriptyline, imipramine, and others), may worsen PFD symptoms

How is PFD diagnosed?

Clinicians (physical therapists (PT), physiatrists, gynecologists) trained in evaluation of the pelvic floor, diagnose the condition during a physical examination. Any known cause for pain needs to be recognized and treated. Using external and internal “hands-on” or manual techniques to evaluate the function of the pelvic floor muscles, clinicians can then assess the muscles and a woman’s ability to contract and relax these muscles. Clinicians also check externally and internally for muscle spasm and hypertonicity, muscle knots, and weakness or sacroiliac misalignment (where your sacrum and upper hipbones meet).

In addition, a clinician may use a small electrode, placed in the vagina to measure a woman’s ability to effectively contract and relax the pelvic floor muscles. The woman herself can see “how she is doing” on a screen attached to the electrode. This is called biofeedback.

External electrodes placed on the tissue between the vagina and rectum (perineum) measure only superficial muscle tension, not the deeper muscle activity, and are therefore less reliable.

How is PFD treated?

The goal of PFD therapy for interstitial cystitis (IC) patients is to relax these muscles and avoid stressing them. For women with hypertonicity and muscle weakness who have vulvar pain or pain with intercourse, the goal is to strengthen the muscles as well as to learn how to relax and control them. Treatment usually combines self-care, medicines, physical therapy, and home exercise, sometimes with dilator use.

Healthy elimination practices: Avoid pushing or straining when urinating or having a bowel movement. Relaxing the muscles in the pelvic floor area overall is important. Using methods such as warm baths at least twice a day is helpful.

Medicines: Low doses of muscle relaxants such as diazepam (Valium) (which may be used vaginally), may be helpful.



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Maintaining good posture to keep pressure off your bladder and pelvic organs and using stretching or other techniques suggested by a physical therapist to avoid tightening and spasms in the other pelvic muscles, also help PFD therapy to succeed.

Physical therapy: A physical therapist specially trained in pelvic floor rehabilitation may take the following steps to bring relief from PFD:

External and internal evaluation of the pelvis

External and internal manual therapy

Application of various devices to help relax your pelvic floor

Training in home exercise and therapy

Dilator use

External and internal manual therapy

The therapist may do manual therapy or massage both externally and internally to stabilize the pelvis before using other kinds of treatment. Since pelvic floor dysfunction builds over a period of time, manual therapy to improve takes time and patience, and may require one to three sessions per week, depending on the technique used and the response to treatment. A woman may feel worse initially. However, many patients see improvement after six to eight weeks.

For internal massage, a PT may insert a finger into the vagina or rectum to gently massage the muscles and connective tissue directly. A frequently used technique is “Thiele stripping,” in which the therapist finds a trigger point by feeling a twitch in the muscle underneath, exercising it using a circular motion, and then putting pressure on it to help relax it, repeating the process until the muscle starts to release. Internal massage can also help release nerves. Sometimes, anesthetics can be injected into these trigger points. PTs may do this in a few states, but in most states, a doctor or nurse must administer injections.

If there is too much discomfort with internal therapy techniques, a PT may start with external techniques to help you begin to relax these muscles, including:

- Skin rolling
- Deep tissue massage, often called “myofascial release”
- Trigger-point therapy to release tight spots or “knots”
- Nerve release
- Joint mobilization



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Application of various devices and therapies to help relax the pelvic floor²

PTs also use a variety of devices and therapies to teach relaxation of the pelvic floor or to treat pelvic pain directly.

- **Vaginal surface electromyography (sEMG or biofeedback)** uses electrodes placed on the surface of the vagina or rectum to sense the degree of tenseness in the pelvic floor muscles. Results displayed on a computer or other device provide cues to help a woman learn to relax those muscles. Usually, patients feel relief after six to eight weeks of therapy. It is possible to buy or rent a unit to use at home.
- **Electrical stimulation** is achieved with the use of a small probe inserted into the vagina or rectum to stimulate pelvic floor muscles, desensitizing nerves and causing muscles to contract and relax. Stimulation through electrodes placed on the body may calm pain and spasms. Different kinds of electrical stimulation devices are available for home use, both for internal stimulation with a probe or for external stimulation, such as a transcutaneous electrical nerve stimulation (TENS) or similar unit, to ease pain.
- **Interferential therapy** is a kind of electrical stimulation delivered from electrodes placed on the skin. The impulses “interfere” with each other at the point of pain deep in tissues and can replace and relieve the sensations of spasm. Home units are available.
- **Ultrasound** uses high-frequency sound waves applied through a wand or probe on your skin to produce an internal image or to help treat pain. Real-time ultrasound can let you see your pelvic floor muscles functioning and help you learn to relax them. Therapeutic ultrasound uses sound waves to produce deep warmth that may help reduce spasm and increase blood flow or, on a non-thermal setting, may promote healing and reduce inflammation.
- **Cold laser** applies low-intensity laser light to the tissue and may help with pain, inflammation, and wound healing. Some devices have FDA approval for temporary relief of minor muscle aches, joint pain and stiffness, and for relaxation of muscle spasm and increasing local blood flow.
- **Home exercise and therapy** is also a mainstay of PFD rehabilitation. Because the goal of PFD therapy is to learn to control and, especially, relax the pelvic floor, therapists teach exercises for home use to build on office-based techniques. These usually begin with stretches and general relaxation, using good posture, and learning to sense the pelvic floor muscles and to relax them, a technique called visualization.
- **Dilators** are often used for desensitization, to promote muscle relaxation, and relieve symptoms. Dilators are often more effective when combined with other management such as physical therapy, counseling, and sex therapy. Working with graduated sizes from small to large inserted after the application of lidocaine, a woman can become accustomed to vaginal intercourse without pain.

2 [Pelvic Floor Dysfunction - Interstitial Cystitis Association
www.ichelp.org/page.aspx?pid=361](http://www.ichelp.org/page.aspx?pid=361)