

# Over Active Pelvic Floor

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## Background

The concept of an overactive pelvic floor (OAPF) is relatively new in pelvic floor rehabilitation. Overactive pelvic floor is an overactivity of the muscles and fascial tissue across the pelvic floor from front to back and side to side. In this article the term will be explored with emphasis on the signs and symptoms that may present and the conditions that it is associated with.

PF muscle rehabilitation was first described in 1948 by Arnold Kegel, a gynaecologist and since then pelvic floor strengthening exercises have been described as Kegel exercises. This focuses on strengthening only but what if the pelvic floor does not need to be strengthened? What if the muscles are already very tense and need to be released before they are strengthened? What if the muscle is already short as a result of a period of adaptation in response to injury? This is what happens to other muscles in the body when they are injured, they tense up and if left tense for too long, there will be adaptive shortening. Consider the biceps muscle over a flexed, injured elbow joint, strengthening would never be considered before full extension is achieved, the pelvic floor is approached in the same way.

## The Pelvic Floor Muscles

The pelvic floor is described as a hammock attached to the pubic bone at the front and the coccyx at the back and the walls of the pelvis from side to side. It is not uniform throughout, in fact the bulk of the pelvic floor is to the back and sides of the rectum. (See Fig 1). The pelvic floor contracts from back to front. If you think of squeezing the muscles around the back and then drawing the muscles upwards and forwards to the pubic bone at the front, this should result in the muscles reaching the neck of the bladder and a good pelvic floor contraction (See Fig 2). The pelvic floor not only has this squeezing and lifting action but also provides shelf support for the organs to sit on (Strohbehn 1996).

When undertaking pelvic floor rehabilitation there are a few considerations with regard to the theory and physiology of muscle. The intact pelvic floor has fascial as well as muscular support, the fascial tissue forms a mesh overlying the muscles and connects to organs and bone. Muscle or fascia can be traumatized or torn in childbirth. If there is an avulsion or complete tear of the muscle then the rest of the pelvic floor will be overloaded and the full contractility of the muscle will be reduced (Ashton-Miller, DeLancey 2008). The contractile force of a muscle depends on its length, the force will

drop off as a muscle approaches its fully stretched or fully shortened position and it will be greatest in its mid position, it will expend excessive energy in the fully shortened position trying to further shorten (Travell & Simons 1999).

The normal cranioventral or upwards and forwards action of the pelvic floor may be altered in direction (Jones 2008) and the height of contraction which has been described from 1cm to a few centimeters (Bo 2008) may be significantly reduced. The pelvic floor muscles to the front may be too active with a predominant squeeze to the front and absence of the cranioventral lift from behind. Instruction to just squeeze harder in rehabilitation may be further encouraging a dysfunctional movement.

## **The Function of the Pelvic Floor**

The function of the pelvic floor is to control the bladder and the bowel not just for filling but for emptying too. There are big differences here. It will not help to strengthen the PF in an effort to improve bladder emptying where incomplete emptying is the main problem. Whereas done correctly, strengthening will improve control of involuntary loss of urine (Bo 1999). Similarly, if control of stool is a problem then strengthening the back passage will be recommended but if inefficient evacuation of stool is the problem then further developing a pelvic floor in the same pattern cannot help, balance of the pelvic floor should be achieved before strengthening is undertaken. In sexual function, strengthening of the pelvic floor is described as a way of enhancing sexual pleasure but if the pelvic floor is very tight in the first place then intercourse may not be possible until it is released.

## **Developing a dysfunction**

Damage to muscles or fascia as a result of trauma, inflammation, straining or chronic holding over a period of time can result in shortening of the muscle and development of trigger points in both the muscle and fascia. A trigger point is a “hyperirritable spot that is painful on compression and that can give rise to characteristic referred pain” (Travell & Simons, 1999). A muscle that contains a trigger point may become increasingly tense and short and this will have a knock on effect to neighbouring muscles. Factors worsening this would be poor posture or the presence of musculoskeletal problems. The onset of pain, fear of worsening symptoms and further anxiety leads to further holding and further trigger points and so the cycle continues (Weiss, 2001). This pattern has been described in pelvic girdle pain where instability in the pelvis over a prolonged period can cause pelvic floor overactivity contributing to the dysfunction but not in itself being painful (Pool-Goodzwaard, 2004). There could also be a congenitally short pelvic floor where musculoskeletal and postural patterns predispose the pelvic floor to dysfunctions (Fitzgerald, 2003). In a recent study the existence of abdominal myofascial tension with urologic chronic pelvic pain conditions was described in 89% of patients (Kotarinos, 2009). In pelvic floor dysfunction the following symptoms may develop.

## ***Dysfunction female***

### **Incontinence**

Incontinence of urine is associated with weakness of the pelvic floor musculature as well as defects in the fascial supporting tissue (DeLancey, 1996). It is often assumed that this weakness is secondary to flaccid or hypotonic muscles or loss of anatomic attachment secondary to childbirth. It is however frequently the case that the muscles are tense or have shortened secondary to trauma and that weakness is as a result of this shortening with high tone and not low tone. In this case release is indicated before strengthening.

### **Bladder overactivity**

A pelvic floor contraction may not be sufficient to counteract the overdeveloped bladder muscle as it causes frequency and urgency of urine so the pelvic floor works even harder to compensate and then the bladder must work harder too. This cycle continues and both muscle groups become further overdeveloped causing more frequency and urgency.

### **Incomplete emptying**

Incomplete emptying of either stool or urine is a common problem. Overactivity of the pelvic floor muscles can be part of this problem. In bowel dysfunction there is a condition called paradoxical puborectalis contraction where the pelvic floor tightens instead of releases when trying to defecate or anismus where the anal sphincter muscle is too tight. Initiation of urine flow can be a problem with OAPF or complete emptying at the end of flow where contraction of the detrusor (bladder) muscle is out of balance with the pelvic floor.

### **Chronic Pelvic Pain**

There are a few female chronic pelvic pain disorders that are associated with overactivity of the pelvic floor. Vaginismus is overactivity of the pelvic floor muscles making intercourse either painful or impossible. Vulvodynia and pudendal neuralgia will both cause nerve type sensitivity of vulval or surrounding tissue and can present internally or externally. Proctalgia fugax is the name of a disorder associated with the muscle of the rectum and presents with shooting pains in the rectal region.

## ***Dysfunction male***

### **Symptoms of chronic prostatitis**

Men can spend years suffering with symptoms that mimic prostatitis; pain, urgency, frequency and interrupted flow. Frequently urine samples are clear and the prostate does not show signs of any abnormality (Wise & Anderson, 2006). On examination they can have overactive pelvic floor and palpation of their pelvic floor muscles can reproduce their symptoms.

## What to do about it??

### ***Pelvic Floor Release***

Clinically, it can be observed that if the patient can learn how to do diaphragmatic / abdominal breathing and can soften their abdomen at the same time as the in-breath then the pelvic floor will release more easily. This can be broken down as follows:

**Sniff in** - this is a quick but soft in-breath through the nose, this will make the diaphragm descend. This must be learned through repetition of gentle effortless in-breaths. It can be difficult but the abdomen must be completely relaxed or the diaphragm will not descend fully (Fig 3 and 4). The pelvic floor will not let go if the upper abdomen continues to be held.

**Flop out** - the abdomen flops or fills all the way out on the in-breath (Fig 5). The fingers stay placed on the upper abdomen to check that it stays soft. The upper abdomen should not flatten to push the tummy out (Fig 6).

**Drop down** - the pelvic floor drops or releases at exactly the same time as the in-breath. It is a very small movement directed backwards to the base of the spine and one must concentrate very hard in order to feel it. It does not matter if this is not felt immediately; one is developing the connection just by practicing it.

Spend 5 to 10 minutes practicing this twice per day.

Key point: The upper abdomen and the pelvic floor are both strong emotional holding centers and they will continue to hold automatically once this pattern has been set up. It is important for one to note where their tension points through the abdomen are and try to build an awareness of how the pelvic floor is held. This can be done through palpation of the tension points especially through the upper abdomen.

### ***Pelvic floor contraction***

One should only start to strengthen the pelvic floor once they have practiced the release. It is always a good idea to release the pelvic floor for a few minutes first in any exercise session before doing any strengthening in order to maximize the performance. Strengthening can be commenced as follows.

Try to isolate the pelvic floor muscles by thinking of stopping yourself from passing wind, pull in from the back passage upwards and forwards. Don't let the chest lift, don't hold your breath and don't brace your stomach. Hold for just a couple of seconds and try to isolate the release by practicing the **Sniff, Flop and Drop** technique above i.e. try to release the pelvic floor on an in-breath. The tip here is to breathe out while still holding thus emptying the lungs and this makes the in-breath possible on the release. The progression is to hold for longer but the release should always be on an in-breath.

Do 10 repetitions after the breathing practice twice per day. These exercises are described in detail on the website [www.pelvicphysiotherapy.com](http://www.pelvicphysiotherapy.com).

Key point: The release should be 100% of the contraction. It will be tempting to revert to putting the emphasis on squeezing harder and then just letting go. A lot of concentration is required to let go completely. An improved range will come from a better previous last release and not just from squeezing harder.

## Concluding message

A diverse range of symptoms can present with pelvic floor dysfunction, the basic principles of muscle rehabilitation should be applied to the pelvic floor as in any other part of the body. Optimal strengthening will not take place with the muscle in either inner shortened or outer lengthened range or where taut bands or trigger points are present in the muscle. Contraction should be followed by 100% release with much emphasis on the release. Balance must be present in order for strengthening to be optimal and for function of the pelvic floor to be restored.

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