The PELVIC FLOOR

not just 'womens' business'

Riders who wish to improve their overall performance need to consider the pelvic floor muscles. Aside from the function of holding up the contents of the pelvis, this muscle group is also instrumental in supporting and stabilising the lower back.

BY LESLEY GOFF

Possibly the muscle group least talked about in reference to human athletic performance is the pelvic floor muscles. Riders, as athletes, should be more conscious of this area of the body- not only women aspiring to return to the saddle after childbirth, but any rider who wishes to improve their overall performance. Far from being only a 'womens' affliction' or associated with ageing, weakness in the pelvic floor muscles is a common occurrence for both females and males who have had trauma to the pelvic area. Although this may seem an embarrassing topic of discussion for some - given that pelvic floor dysfunction often shows up as incontinence (leakage of urine), chronic constipation and prolapse of one or more of the pelvic organs - it is important for all riders to be aware that these muscles also have a role in supporting and stabilising the lower back, which can be adversely affected in terms of strength and flexibility.

The human pelvis is made up of the large pelvic bones and the sacrum *(Figures 1 and 2)*. The sacrum is a group of fused vertebrae, which forms a connection to the lowest vertebra of the spinal column (lumbosacral joint) and also with the large bones of the pelvis (sacroiliac joint). The sacroiliac joint and lumbosacral joint transmit forces from the legs and seat to the trunk, and vice versa, when riding and during normal everyday activities such as walking, bending and lifting. Acting like a sling, the muscles in the pelvic floor attach to the coccyx (tailbone) and the bones of the pelvis at the pubic symphysis (*Figure 3 on pg 62)* and, when they function effectively, help to 'hold up' the contents of the pelvis such as the bladder and rectum and help to stabilise the lower back and pelvis.

Of significance for the rider, is the fact that the pelvic floor muscles, along with the seat bones *(ischial tuberosities, in Figure 1)*, are directly in contact with the saddle.

PAIN AND RESTRICTION

When the bony alignment between the pelvis and the sacrum becomes altered, through childbirth or by injury such as a motor vehicle accident, lifting injury or fall, the muscles surrounding the pelvis and trunk lose some of their ability to contract (shorten). As a result, especially if there is also injury to the sacroiliac and/or lumbosacral joints, pain may be felt in the lower back, groin and/or legs and, in some cases, there may be other symptoms such as stiffness or unevenness when walking or running.

Pelvic floor muscle function can become altered during pregnancy, when the muscles are under more 'load' and affected by hormones designed to relax the pelvic muscles and associated ligaments to allow for birth, and can also be subject to direct trauma such as stretching, bruising and tears during birth. Women are particularly prone to pelvic misalignment injuries both during pregnancy and in the six weeks following the birth. If laughing, coughing, and physical activity send you rushing to the toilet and you've consciously reduced your fluid intake because of this, practicality dictates that the issue of pelvic floor weakness will probably need to be addressed before you think about climbing aboard a horse again!

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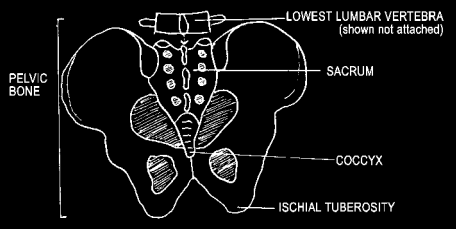

Figure 1

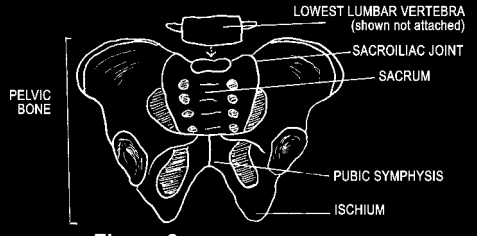

Figure 2

RIDING AND THE PELVIC FLOOR

By referring to *Figures 4 and 5 (page 62)*, how the rider's pelvis contacts the saddle can be clearly seen - an even contact with the horse through the seat bones provides a 'level starting point' for the delivery of aids through seat and legs. An example of a rider with a 'misaligned' pelvis, in standing and mounted, can be seen in *Figure 6* - with the dots placed on the bony landmarks of the pelvis emphasising their lack of symmetry.

A rider with pelvic floor muscle weakness associated with pelvic misalignment may complain of feeling uneven through their seat and legs, even if the imbalance is not obvious to others. Pain in the lower back and pelvic region may limit their ability to tolerate lengthy riding sessions, or perform certain simple manoeuvres, such as sitting trot, with ease. Early fatigue of muscles of the lower trunk and pelvis, including the pelvic floor, can simply limit the rider's ability to be able to apply aids well through the seat and legs during training sessions and, consequently, riding sessions may need to be shortened. The horse 'losing concentration' or lacking impulsion toward the end of a session may well stem from the rider's lack of muscle control and stability through the back and pelvis.

HELP IS AT HAND

If you have a pelvic floor muscle dysfunction, don't despair, as there are many positive steps that can be taken to rectify the problem - ranging from self-help exercises to seeking professional help. Most importantly, don't feel embarrassed about asking for advice, as this problem is far more widespread in the community than you would ever imagine and there are specialists in the area who are only too happy to help their patients resume their normal activities without pain or concern about 'accidents' occurring.

Figure 6

In Figure 6, dots placed on the bony landmarks of the pelvis emphasise the lack of symmetry in this rider, both standing and in the saddle, due to a misaligned pelvis.

Whatever the cause of the pelvic floor muscle dysfunction, the basic problem is the reduction of the muscles' ability to contract (shorten), when required. Just like other muscles throughout the body, pelvic floor muscles can be trained and simple exercises can help to assist these muscles to work at the right time.

The easiest position in which to perform a pelvic floor exercise is when sitting or four-

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The Pelvic Floor continued

point kneeling (on your hands and knees). To perform a pelvic floor contraction, imagine you are 'drawing-up' or performing a 'squeeze and lift' action of the muscles of the pelvic floor region - as if you were to stop the flow of urine or to stop passing wind. An important point to keep in mind, however, is that clenching of the buttocks does not constitute a pelvic floor contraction. The first aim is to be able to feel this 'squeeze and lift' sensation when you consciously try to achieve it, then hold for ten seconds. The second aim is to be able to do ten repetitions of these ten second holds, with at least a ten second break between each contraction.

A test that your pelvic floor muscles are working is to be able to stop the flow of urine mid-stream, but be mindful only to test it this way once or twice per week so as to ensure there is no retention of urine in the bladder. Do not do this every time you go to the toilet!

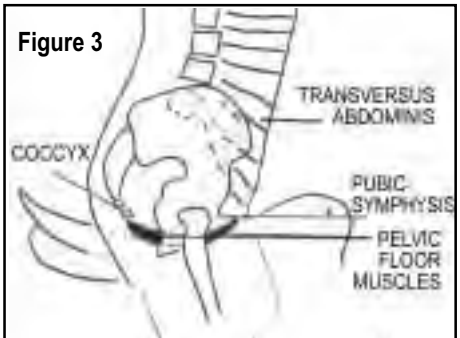
ADVANCED EXERCISES

As the pelvic floor muscles contract in conjunction with the transverse abdominis muscle, which has an important role in stabilising the trunk, it can be beneficial to work on the co-ordinating effect of these muscles through specific exercises. To contract (tighten) the transversus abdominis, draw in the area of the abdomen between your belly button and the front of the pelvis. No other stomach muscle should bulge out or tighten up - you should see a hollowing or drawing-in effect in the region below the belly button. When you have mastered this, as ten x ten second holds, try to perform a pelvic floor muscle contraction at the same time. Then do the opposite by performing a pelvic floor muscle contraction while drawing in the transversus abdominis. As this involves isolating specific muscle groups, it is wise to seek the assistance of a health professional, such as a physiotherapist, who specialises in pelvic dysfunction to ensure you are performing these exercises correctly and safely.

Once a good pelvic floor and transversus abdominis contraction is achieved, it is important to start training the muscles to work during activities you do on a regular basis - for example, riding. Known as functional re-training, this encourages the muscles you have been working on to be active during the tasks you usually perform. If you often do warm up exercises during your flat work sessions, this is a good time to incorporate some pelvic floor contractions and transversus abdominis work while you are in the saddle.

Thanks to Shirley Crawford, of 'Scenic Lodge', Hampton, Qld and Jenny Nucifora, Musculoskeletal Physiotherapist, of Focus on Women Physiotherapy, Benowa, Qld, for their assistance with this article.

Figure 3



Above: Acting like a sling, the muscles in the pelvic floor attach to the coccyx (tailbone) and the bones of the pelvis at the pubic symphysis.

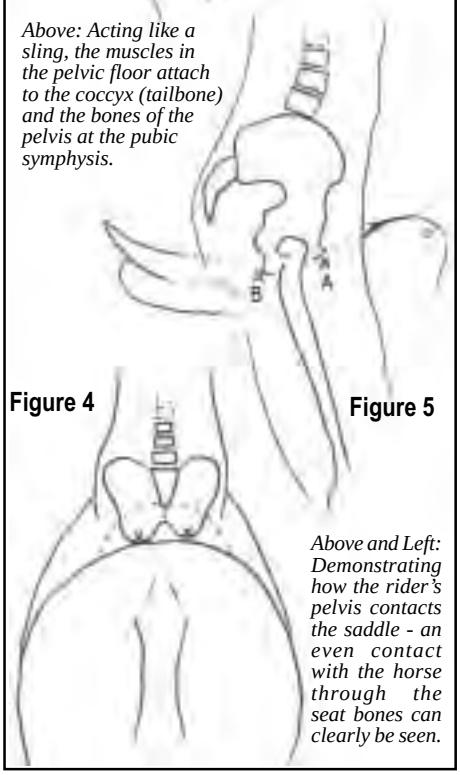


Figure 4

Figure 5

Above and Left: Demonstrating how the rider's pelvis contacts the saddle - an even contact with the horse through the seat bones can clearly be seen.

About The Author

Having operated a successful human physiotherapy clinic for over ten years in New South Wales, Lesley Goff now combines her love of animals with her expertise in her current business, Active Animal Physiotherapy, in QLD. She is studying towards a Masters degree in Animal Studies, which involves further research towards the important concept of the 'integrated horse and rider pelvis'.

STRETCHES

Appropriate stretches of the muscles in the pelvic region can often assist with allowing the pelvic bones to adopt a more normal position. As some major muscles of the legs also attach to different bony points of the pelvis, stretching these muscles is important and, as many also play significant roles when riding, it doesn't hurt for everyone to perform these stretches on a regular basis. The aim is to have an even 'feel' to the stretch when comparing left to right, as one reason for a group of muscles feeling tighter than those on the other side of the body can be a 'misaligned' pelvis. If any unevenness persists following regular stretching sessions, you may need to visit a professional such as a Musculoskeletal Physiotherapist - who can help to determine the cause of the persistent difference in muscle length.

The major muscles groups to work on are the back of the thigh (hamstrings), front of the thigh (quadriceps), inner thighs (adductors), front of the hip to upper thigh (hip flexors) and buttock area (gluteals). Suggestions for how to stretch each of these groups are outlined in Figure 7. It is not as easy to stretch the pelvic floor muscles, but a full squat to the floor can do this - with caution if you have existing lower back, pelvic or knee pain.

The important point to consider when doing stretches to lengthen the muscle is the amount of time a stretch is held. For example, if the goal is to increase muscle length, ideally stretches should be gently held from 30 to 90 seconds - during which you should be aware of a moderate stretch sensation (not pain!), which often reduces slightly as the muscle lengthens. If you experience pain with any stretch, back it off a little.

Note: If in doubt as to the extent of your pelvic floor dysfunction, if stretches and pelvic floor exercises don't help or you have a pre-existing injury to the lumbar spine or pelvis, it is wise to receive professional advice to ensure that these stretches are suitable for you. You should not feel an increase in pain, or experience increased pelvic floor problems with these stretches and exercises. If you do, then seek advice from a health professional who can assess the extent of the pelvic alignment problem, and the status of the pelvic floor muscles.

Figure 7