Cross-training is essential to improve performance

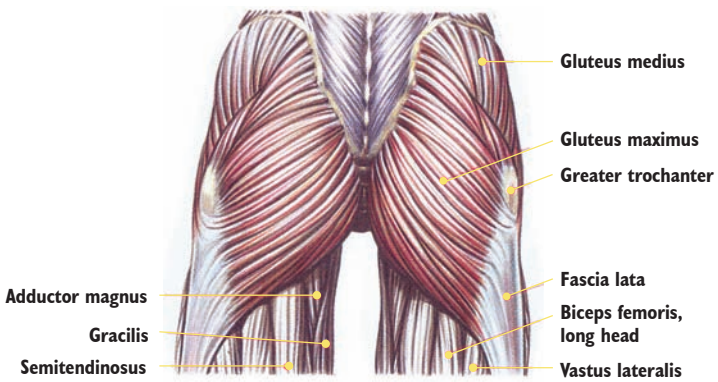
By Tanya Bell-Jenje MSc physio

So often you'll read that spending time in the saddle gives you well shaped and toned buttocks. Alas, this couldn't be further from the truth. For riders who put in extra hours of riding per week, but neglect to train off the bike, the net result can be a weak core, persistent pelvic girdle pain and a visibly wasted butt!
One study found that whereas normal humans could hold a static gluteal contraction (hip extension) for 35 seconds, a competitive cyclist could only sustain the same contraction for 5 seconds – that's a potential weakness of 85% compared to a non-cyclist! Read further to understand how this happens and why cross-training is essential to improve performance, decrease pain and tone that ass.

Photo: Cor Vos

The anatomy:
Gluteus maximus is superficially the largest muscle of the body, and due to its attachments, it is primarily involved in hip extension and hip lateral rotation. Also, its attachment into the iliotibial tract allows gluteus maximus to play a role in stabilising the knee in extension. Its function is to get us out of a chair, extend our hip from a squat position, rapidly explode our body forward as when sprinting, and power us in a sprint finish as we stand out of the saddle, as our hip moves from flexion to extension. It also provides stability to our sacro-iliac joint, and its importance as a stabiliser of the pelvis is likened to the importance of the quadriceps muscle to stability of the knee.

The biomechanics
Cyclists sit on their bikes in a sustained position of hip flexion with the pelvis tilted forward. This position is described as the 'outer range' of the glute max muscle, where its contraction is feeble. Unfortunately, this sustained position of hip flexion over time causes wasting of the glute max muscle, and ultimately instability of the sacro-iliac joint



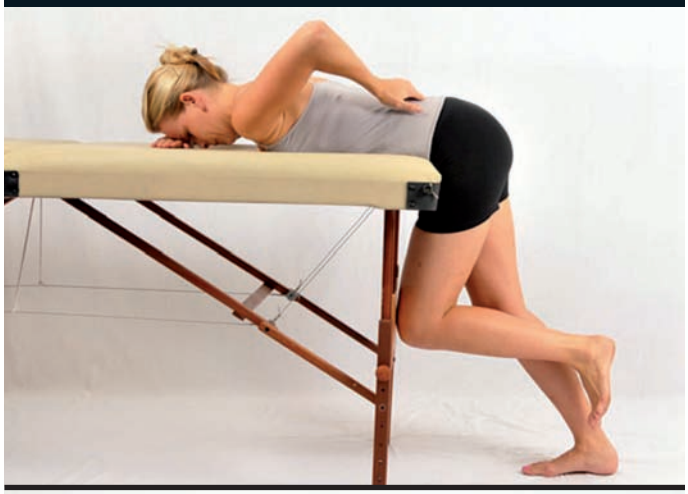
and spasm of the piriformis muscle, as it tries to compensate. This is the reason why so many cyclists complain of low back and/or buttock pain. Atrophy of the gluteus maximus muscle and subsequent instability, NOT overworking the muscle is to blame!
Another consequence of weakness of the glute max, is tightness of the hamstring, as it attempts to compensate for the lack of hip extensor power and force closure or load transfer across the sacro-iliac joint. Unfortunately, the hamstring is a poor substitute, and the result is tight & stiff hamstrings that have a tendency to tear, especially when the cyclist decides, without adequate training and warm-up, to go for a run!

How to fix it
The answer is effective cross-training. Efficient strengthening of the gluteus maximus requires eccentric contractions with the hip moving through full flexion to extension.
There are many exercise options to strengthen glute max. Below are a few progressive options that I find very effective and rewarding to do, as the benefits on the bike will be seen quickly.
Aim for 3 sets of 8-12 repetitions, with 30 seconds of rest between sets. All exercises are to be performed slowly and with control, including the return movement to target the eccentric strengthening. Initially these exercises will make you stiff, so start slowly, and plan your strengthening so that it doesn't hamper a planned race or long ride.

Running
Studies suggest that incline running and, to a lesser extent, level running with a high stride frequency, are effective methods of increasing the activity of gluteus maximus. Even short distance, high intensity runs twice a week (e.g. 3-6km) will be highly effective in improving your power and performance on the bike, as well as reducing low back and buttock pain, and this will certainly give you a better looking butt! ride

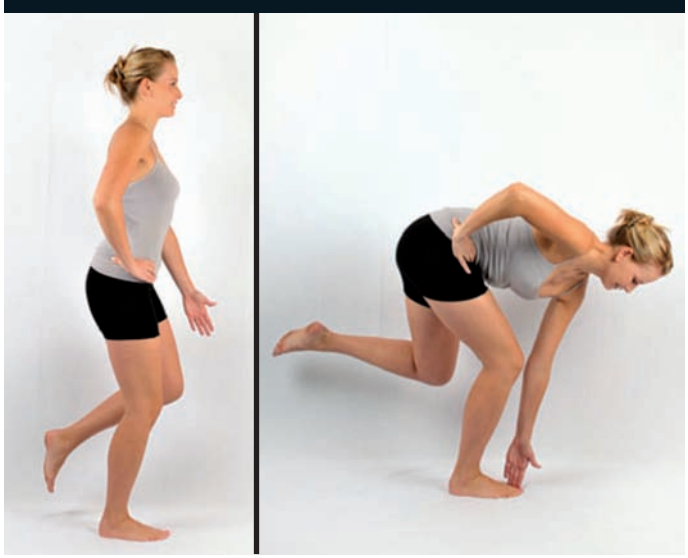
GLUTE MAX FROM HIP FLEXION

Extend leg using glute max. Feel the hip-bone move backwards towards the glute muscle. The hamstring muscle must not cramp. Do 8-12 reps X 5 sec holds each leg per set. Palpate the lumbar spine to make sure it doesn't go out of neutral. There should be no contraction of the back extensors.



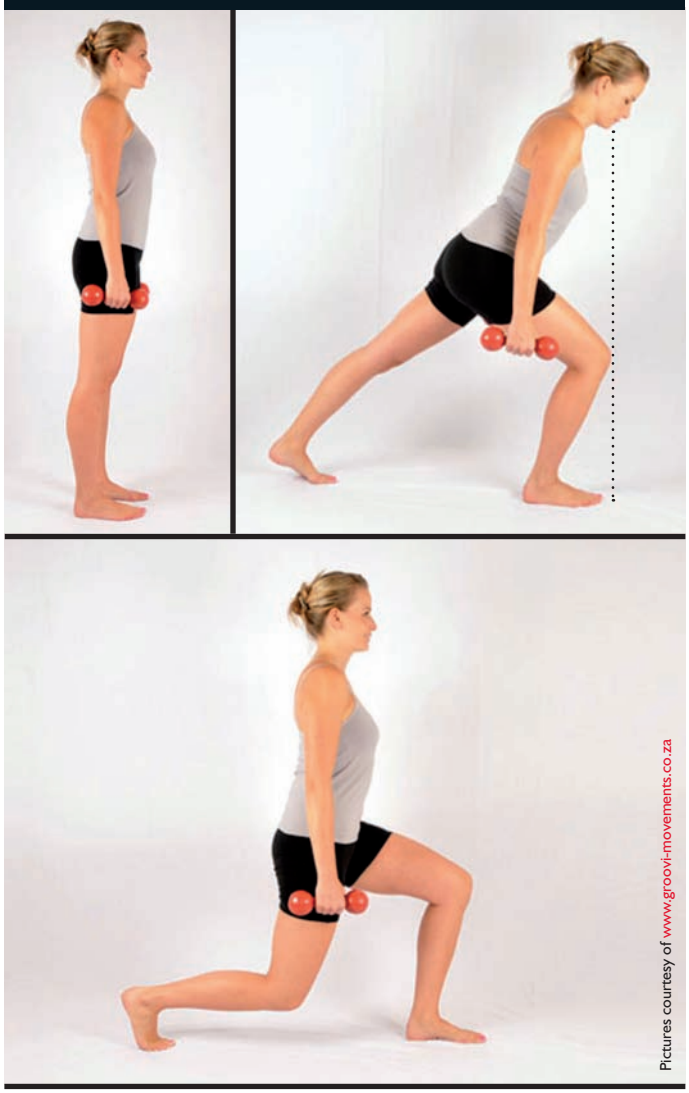
ONE-LEGGED SQUAT

This is great for balance as well as strengthening the glute med and glute max muscles. As you flex the knee into a squat, ensure that the kneecap stays in line with the mid foot & does NOT drift inwards.



FORWARD AND BACKWARD LUNGES

The idea is to move the right leg forward and backwards in one continual motion.
In the forward lunge position, ensure that your nose is in line with your knee and your big toe. Make sure that the patella (kneecap) stays in line with the mid-foot and does not drift to the centre to avoid twisting the knee or hip. Aim for one continual motion. Start without dumbbells. As you increase in strength, and are not stiff 24-48 hours post lunging, start increasing the load by adding weights (e.g. 1-7kg dumbbell in each hand).



Pictures courtesy of www.groovi-movements.co.za

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Tanya is a founding partner of Bell Harvey & Rogers Physiotherapy Practice, operating in Melville and from Wilgeheuwel Hospital. She has been involved as a physiotherapist in sport at a National level for many years. Tanya played provincial level squash herself and is now a seriously keen cyclist!

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