

The Lower Control Zone

GMax Activation

Coordination around the hip and pelvic area and the responsiveness of the gluteal group are intimately connected. Although many athletes practice strengthening exercises for this group, the key to improving their function is actually practicing small good quality movements which unlock the pelvis from the spine and the hips from the pelvis. These movements are often new to the athlete and the increase in awareness that comes with them develops a relationship between movement and muscle. Very simple movements are needed at first.

Basic Bridge

The bridge is a simple movement which can help an athlete to restore mobility between the spine and the pelvis, unlock tight back muscles and discover the relationship between the *hip straightening movement* and GMax.

Stage 1

Start by lying on your back with your knees bent and your feet flat on the floor. Keep your feet hip-width apart and bring them towards your body. Placing your feet further from the body will bias the hamstrings, and we want to minimise this effect.



Relax your abdominals and start to tip your pelvis back towards you by pressing down through your feet.

Once you are in this position, you need to check which muscles you are using to stay up there. Feel across your lower back. If your spine feels like a deep valley between two large hard ridges of muscle running down either side of it, it is likely that you are using a little too much back extensor and not quite enough GMax. If you feel any discomfort in your lower back, it is also likely that you are using too much back extensor.

To rectify this, put your hands on your pelvis with the thumbs up and the fingers down. Drop your hips slightly and tip your pelvis a little more back towards you. Recheck your back – is the valley a little less deep? It is normal and desirable to have some back activity, but it should feel like gentle hills as you run your hand over them, not the Himalayas.



Notice that if you have tilted your pelvis a little, you may find that your quadriceps feel stretched. This is an extra benefit in this position.

Once you are accustomed to feeling the difference between using your glutes and using your back, turn your attention to your hamstrings and adductor (inner thigh) muscles. Feel the muscles with your hands: are they firm or soft?

If you suspect that your adductor muscles are working too hard, maintain your bridge and move one knee outwards, maintaining your trunk position and a level pelvis. Move the knee back in and repeat with the other side. The adductors must release to allow you to move your knee.

You will sustain the position for the count of 10 and then return to the floor by slowly uncurling, placing one vertebra after the other on the floor. Try not to use your abdominals to help, as this will decrease GMax's role.



What would a poor performance look like?

- Pushing hips and back straight up instead of rolling the pelvis into position.
- Using too much abdominal muscle to create a pelvic tilt.
- Hanging on with back muscles and hamstrings.
- Hanging on with adductors.

Where should I feel it?

- You should feel your buttock muscles working.

Reps	10
Sets	2

Progression

- While holding the position, move one arm out to the side, ensuring that you keep your pelvis level. Bring it back up and switch to the other arm.

**Observation notes**

Some people will worry that the spine is not in a perfectly neutral position here. However, the aim of this exercise is not neutral spine control. The aim is to put the pelvis in a position which favours GMax and disadvantages the back extensors. As discussed in Chapter 2 the primary posterior chain dysfunction involves too much hamstring and back extensor and not enough GMax. The aim here is basic re-patterning, and it is a little like balancing the treble and bass on your stereo system. We are not trying to switch one thing off and another thing on. Instead we are trying to increase activity in one area and decrease it in the other until we have a balance. The neutral position against gravity is usually too difficult when early re-patterning is occurring. The pelvic tilt gives us a means to actively change the conditions for each muscle and once the pattern starts to recalibrate, a more neutral position can be aimed for. The control of a neutral spine is being addressed with other exercises in the programme and once a balance has been achieved between the gluteals, back and hamstrings, they can be worked on in a neutral position.

The pelvic tilt also teaches you to dissociate (independently move) your pelvis from your spine, gently mobilising your lower back. Many GMax deficient athletes are dependent upon fixing their pelvic position with their back muscles to maintain stability, making it even more difficult to activate GMax and producing a feeling of stiffness. Improving this dissociative ability can help greatly with activation.

Although you have been instructed not to use your abdominals in this exercise, this does not mean that no abdominals are working! The muscles that you have direct control of at this time are more likely to be rectus abdominis and obliques. If you try to relax these muscles, the deeper TrA can activate more effectively. Clinical experience has shown that actively trying to relax the superficial abdominals also tends to encourage the GMax work more effectively in this exercise, as it becomes the primary movement producing muscle.

Stage 2: Hip Pops

The ability to straighten the hip without over-bending the spine is a critical movement for many sports. Without it, the contribution of GMax to the total power of the movement will be markedly reduced. Remember that GMax is a big, broad muscle, and it is hard to compensate for the loss of its contribution. Hip pops address awareness of the hip extension movement and inner range activation of GMax.



Perform the bridge as above, and place one finger on the crease of the hip and another directly opposite at the back of the hip. The two fingers should be pointing towards each other through the hip joint. This is your awareness focus. Move the top finger towards the bottom finger by softening the hip into a slight bend. Be aware of this movement. Now move the bottom finger towards the top finger, squeezing GMax and causing the hip to straighten. Be aware that the hip has moved but the spine has not bent. Count to 3. Repeat without coming back to the floor.

Reps	10
Sets	2

Progression

- Once you have the idea of the hip movement, perform it with both arms to the ceiling as shown above.

Stage 3: Hip Swivels

As discussed in Chapter 1, pelvic rotation is a critical movement for normal efficient walking and running. This exercise teaches GMax activation in combination with pelvis and hip rotation. Start in the Basic Bridge position. Put your hands under your buttocks. Keeping one side up, let the other side drop down into your hand. This will look like your pelvis has rotated down on that side.



Press it back up by squeezing the GMax on that side. Repeat with the other side.

Reps	10 per side
Sets	2

Progression

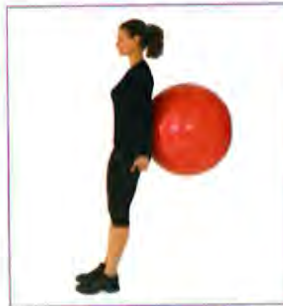
- Once you have the idea of the hip movement, perform it with both arms to the ceiling as shown above.

Wall Squat

The wall squat takes this basic GMax activation and applies it to a vertical position. Having achieved an inner range contraction of GMax, we want to link an awareness of hip bending with a neutral spine position while working GMax into a greater range of hip bending. This exercise is not intended to mimic a barbell squat in the weights room. Its postural position is vertical as opposed to tilted. Its priority is awareness and control of the neutral spine, control and smooth motion of the hip, and eccentric/concentric GMax activity.

Stage 1

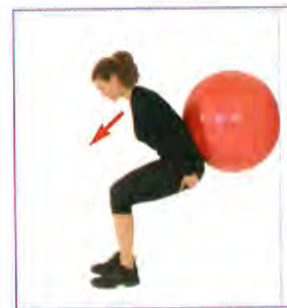
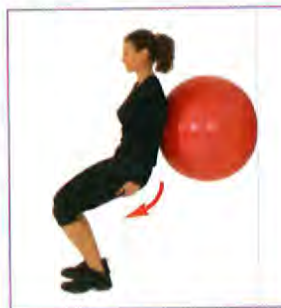
Stand with a Swiss Ball behind your back at waist level. Walk your feet forward to a comfortable point and allow the ball to accept your weight. Straighten up so that your shoulders are



directly above your hips. Place your hands under your sitting bones. You will sit directly down into your hands squeezing your glutes as you go. Pause when your knees are at 90 degrees and experiment with relaxing your glutes to make your quadriceps take more of the load and then switching the glutes back on to feel the load shared between the two muscle groups. Press your body straight back up again.

The three main errors for this exercise:

1. You may not bend your hips as much as your knees, so your shoulders end up behind your hips. To correct this you can place your hands into the crease at the front of the hip to remind your body to release this movement and allow a vertical alignment.
2. You may forget to keep your knees in line, so you need to focus more on your GMax to control your thighs.
3. You may sneak your pelvis under the ball for extra support and sensory feedback. In this case, with your hands under those sitting bones, focus on the bones going



straight down to the floor instead of back towards the wall behind you. If you feel that your weight is being supported more on one side than the other, lift this heel and perform the squat. Reducing the support on this side shifts more weight onto the other leg.

Where should I feel it?

- You should feel your thighs and buttocks. You will notice your thighs more.
- Once you can perform 10 of these with good form, you can progress to stage 1+.

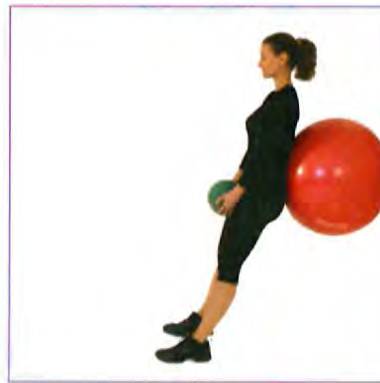
Stage 1.1: Increasing Trunk and Hip Control

Start as for stage 1, but this time take your arms above your head in a streamlined position. Repeat the squat but make sure that your sitting bones do not sneak backward, increasing your lumbar curve. It is much more challenging to keep the spine neutral in this position.



Stage 1.2: Trunk Control Against Moving Arms

Start with a Swiss Ball and a light weight in your hands. As you move down into your squat, take the ball above your head. Focus on keeping a consistent trunk position, because it is easy to collapse into back extension with this exercise.



Increasing Coordination

Place your right hand on your left thigh. As you squat down, take the arm up and across your body, finishing above your right shoulder. Your knees and hips should remain pointing forward throughout the motion. This exercise can also be performed with a light weight or medicine ball.



Reps	10
Sets	2

GMed Activation

Gaining awareness and some basic endurance in GMed is helpful before trying to activate it in weight bearing.

Clam

Lie on your side with your top arm on the floor in front of you. Draw your knees and hips up, then push your top thigh forward along the line of your bottom thigh. Your top knee will overlap your bottom knee by about 5cm. Notice that this pulls your trunk and pelvis into slight forward rotation.



Drawing your lower abdomen in towards your spine, lift the top knee by pivoting between your feet and your hip joint. Keep your pelvis forward: it is easy to let it roll slightly backward to access stronger more easily activated muscles. Count to 10. If you have performed the movement correctly, your top knee will land with the same amount of overlap that you started with.

Reps	10
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Sets	2
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Where should I feel it?

- As you lie there feel for a bone in the side of your top hip. You will feel the work just behind this bone, and you may feel it on the moving leg side or the supporting side.

What would a poor performance look like?

- Rolling the top hip back as you lift your leg.
- Lifting the top foot.

Once you have a basic GMed foundation, it is time to apply it to weight bearing.

● Standing Knee Press

Stand next to a wall with feet together. Lift one knee and place it on the wall. First you need to focus on your stance leg. Place your hand over the bone at the side of the hip. Draw your body up over your hip. You should feel the hip bone under your hand move further underneath you. This is where it must stay throughout the exercise.



Straighten both arms up into a streamlined position. Press out with the knee into the wall, keeping the pelvis facing forward. Count to 10.

Where should I feel it?

- Feel for a muscle working hard in the depression just behind the hip bone on the stance side.

Reps 5 each side

The Upper Control Zone

Awareness Around the Scapula

If you need to improve your upper control zone, better awareness around your scapula can help you to feel the muscles in that area. We are not generally very aware of our scapula: we often don't relate well to body parts that we can't see or put our hands on easily. If you are not experienced at activating scapular stabilisers, try this awareness exercise first.

Lie down on your side with your knees bent and your arms out in front of you with the palms together. You are aiming to move with the least possible amount of muscle tension. Slowly and smoothly slide your upper hand out over your lower hand as far as you can. Notice how your scapula has moved over your rib cage, sliding forward and around in response to your hand movement.

Once you have reached your limit, pause, make sure that everything is relaxed, and begin to move your hand back to the start position again without letting your elbow bend. Your scapula will move back around your rib cage again, sliding towards your spine. Repeat the movement up to ten times slowly and then relax.