

Core Stability Exercises and Notes

To achieve good core stability you must learn how to effectively co-contract the key To do this you need to be able to find your neutral position for the spine and pelvis. This is best achieved by first finding out what the extreme opposites feel like. The neutral position can then be more easily found in the middle of these two extremes.

To do this, use the following method.

- * Start by lying on your back with knees bent.
- * Imagine a compass on your lower abdomen.
Your belly button is north
Your pubic bone is south
- * Tilt your pelvis up northwards - doing this will:
Have caused your pelvis to tuck under
Flattened your back into the floor
Loose your low back curve
Tightened your 6 pack
Tail bone has lifted off the floor.
- * Now do the opposite, tilt your pelvis down southwards
Your lower back becomes very arched
Your ribs have flared
Your stomach sticks out
- * The neutral position is between these two extremes.
- * The compass should now be like a spirit level, balanced between North and South
The pelvis is tilted neither north or south or tucked under
Nor is the back excessively arched
The tail bone remains down on the floor
The pelvis is lengthened not scrunched up
There is a small natural arch in the back



If you find this difficult try it on all fours, you may know it as the Cat Stretch.



In this neutral position you can now learn to perform 'abdominal hollowing' which causes the co-contraction of the key muscles.

Step 1

Start by lying on your back with knees bent. Remember your lumbar spine should neither be arched up nor flattened against the floor; but aligned in the neutral position with only a small gap between the floor and you lower back.

- * Breathe in deeply
- * Relax all your stomach muscles.
- * Breathe out and as you do so:
- * Draw your lower abdomen inwards as if your belly button is going back towards the floor.

Think of the key muscles acting like a corset as you 'suck your belly button in'. Or think of scooping the lower abdomen back towards the spine. Alternatively think of struggling into a tight pair of jeans by sucking your belly in and zipping up.

Practise achieving this 'hollowing' action by holding the contraction for 10 seconds and repeating. During which you must

- * Stay relaxed.
- * Ensure you breathe in and out as normal.
- * Hold the tension only in your lower abdomen.
- * Repeat 5-10 times.

Sounds dead easy? Well maybe for some not so for others, particularly those with weak backs or those that have done loads of abdominal work. It is absolutely vital that you perform this abdominal hollowing correctly otherwise you will not recruit those all-important deep core muscles. Note the following guidelines:

* Do not let the whole stomach tense up or your upper abdominals bulge outwards lifting your rib cage, as this means you have cheated by using your large rectus abdominus muscle (the six-pack) instead of the Transversus abdominis & Multifidius.

* Do not brace your Transversus abdominis & Multifidius: just a gentle contraction is enough. Remember it is endurance not maximum strength you are trying to improve.

* Do not hold your breath, as this means you are not relaxed. You must learn to breathe normally and maintain the co-contraction of the Transversus abdominis & Multifidius muscles.

You may find it useful to do the following at least initially:

* Place one hand under your lower back to ensure that you do not tilt your pelvis nor arch or flatten your back, as this means you have lost the neutral position you are trying to learn to stabilise.

* Use your fingers to feel for tension in your lower abdomen, which indicates tension in the Transversus abdominis. Do this by placing your fingers an inch in towards your belly button from the bony protrusion of your pelvis and an inch down towards your groin.

Once you have mastered the abdominal hollowing, or zipping up, while lying on your back, practise it lying on your front, sitting and standing. Progress by holding the tension for longer. In each position ensure that your pelvis and therefore your lumbar spine is in the neutral position before you perform the hollowing movements. If you are finding this difficult try the following exercise:

Level 1: 4 Point Kneeling

Kneel on all fours, hands beneath shoulders and shoulder width apart.

Knees beneath hips.

Top of head lengthening away from the tail bone.

Pelvis and spine in the neutral position.

Relax and let the belly hang down.

Then draw the belly button up, hollowing the belly.

This should be a controlled contraction.

Progress by maintaining and holding the contraction for 10 seconds. Further progression by extending one arm out level with the ear. Repeat 30 times and using the other arm.

Once you find this very easy progress to the next level

Level 2 Bent Knee Fall Out

Lie on your back with your knees bent. Ensure your back is in neutral as described previously.

Breathe in and out performing abdominal hollowing as you do so - sucking the belly button in - control the contraction.

Continue breathing normally.

Put the fingers of one hand on to your pelvic bone.

Let one knee fall out to the side.

The pelvis must not move, feel for movement with the fingers

The knee should go half way to the floor.

Repeat 30 times each side.

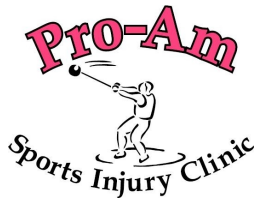
Progress by holding the heel of the dropped knee 1" off the floor.



Level 3 Isometric Contraction

Lie on your back with your knees bent. Ensure your back is in neutral as described previously.

Breathe in and out performing abdominal hollowing as you do so - sucking the belly button in - control



the contraction.

Place one hand on the knee on the same side.

Push the knee into the hand but do not let the knee move - isometric contraction.

Hold this contraction for 10 seconds.

Place the other hand beneath the lower back to check for pressure. Do not let the back arch or collapse, maintain abdominal hollowing. Repeat with the other leg.

Hip Flexion Control Level 4 - Level 9. This is a series of exercises that gets progressively more testing. You should only progress to the next level when you are sure you are not cheating and not in any discomfort.

Level 4

Lie on your back with your knees bent. Ensure your back is in neutral as described previously.

Breathe in and out performing abdominal hollowing as you do so - sucking the belly button in - control the contraction.

Place your hands as described above, one under your back checking for pressure and the other checking for tension in the lower abdomen. Breathe in and relax. Breathe out, and as you do so perform the abdominal hollowing - sucking up the belly button. This ensures that the Transversus abdominis & Multifidius muscles have co-contracted first. Once you have established some tension in these muscles, slowly lift one foot off the floor and bring towards the chest. Ensure that the knee is pointing towards the ceiling.

Maintain the lumbar spine in the neutral position throughout this movement otherwise you will not be training the core-stability muscles effectively. Repeat the exercise with the other leg, building up to 3 x 30 each leg.

Level 5

Start in the same position as level 4 but this time slide one leg out into extension keeping in contact with the floor until it is straight and then slide it back to the starting position. Repeat the exercise with the other leg, building up to 3 x 30 each leg.

Level 6

Repeat level 5 but this time raise one foot 1" off the floor and extend and return as in level 5 but keeping the foot off the floor during the exercise, building up to 3 x 30 each leg.

Level 7

Repeat level 6 but this time raise both feet 1" off the floor. But extend and return one foot only keeping both feet off the floor during the exercise, building up to 3 x 30 each leg.

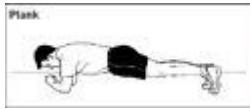
Level 8

Proceed as in level 7 but this time alternate extending and returning each leg again with both feet off the floor, building up to 3 x 30 each leg

Level 9

Proceed as in level 8 but this time extend both the legs at the same time, building up to 3 x 30.

Core stability Intermediate level - examples only



Plank

Start face down on the floor and lift your weight onto your forearms and toes keeping a straight body. Variations include starting with your knees on the floor, instead of the weight on your forearms you can place your arms straight with the weight on your hands. Follow this link to see a video of how to http://video.google.co.uk/videosearch?hl=en&rlz=1C1CHNG_en-GBGB324GB324&um=1&q=plank%20exercise&ie=UTF-8&sa=N&tab=iv#



Superman

Kneel on the floor and place your hands below your shoulders and knees below your hips (4 point kneeling). Extend your right arm and left leg. Maintain a straight body making yourself as long as possible. Repeat with opposite limbs.

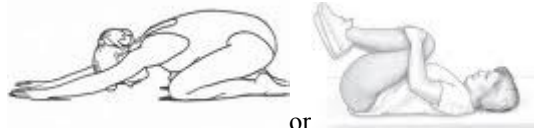


Bridging

Lie on the floor with your knees bent and feet flat on the floor. Squeeze your gluteals and then push your hips until there is a straight line through the knee and hip to upper body and shoulders remaining on the floor. Follow link for video demonstration. http://video.google.co.uk/videosearch?hl=en&rlz=1C1CHNG_en-GBGB324GB324&um=1&q=plank%20exercise&ie=UTF-8&sa=N&tab=iv#q=bridging+exercise&hl=en&emb=0

Stretches

These are examples only for demonstration of the type of stretches used to balance posture.

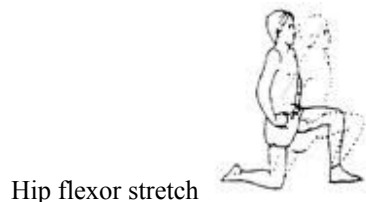


Childs pose

or



Low back twist



Hip flexor stretch

