



Clinic Newsletter

Back Stability

A Guide to stabilisation of the spine - Core Strengthening

Core strengthening aims to improve stabilisation and support to the spine. This is achieved by re-training specific trunk muscles, which may be under used.

Once these stabilising muscles have been re-trained the muscles of the arms and legs will have a more stable base to work from. This allows you to carry out arm and leg movements with more control and is thought to improve the quality of your movement.

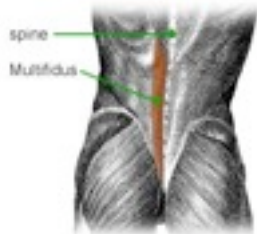
How does this help relieve back pain and reduce risk of injury?

- It will provide more support for your back and may reduce the risk of back injuries.
- It will provide a more stable base for arm and leg movements, improving the control and quality of your movements.
- It will improve your muscular co-ordination during movement.
- As the stabilising muscles gain more endurance you will be able to perform movements without your technique deteriorating excessively, due to fatigue.
- Your ability to hold off opponents in contact sports should improve.

It is important to learn the core strengthening exercises in stages so as to ensure you are using the correct muscle to do each activity.

Stage 1 Contracting Deep Muscles: There are two main deep stabilising muscles that support your lower back: the Multifidus muscle and the Transversus abdominis muscle.

In order to practice getting Transversus and Multifidus muscles to contract, it is easiest to get on all fours (hands & knees).



Without moving your back, or pelvis, draw your stomach up gently - try to bring your belly button up towards your back.

This is a very subtle movement so it is best to get your technique checked by the osteopath.



- This movement should not be confused with breathing in - it is important to breathe normally while activating the stabilising muscles.
- Do not use the muscles at the front of the stomach - using your 'six pack' is not the correct technique.
- Once you have mastered the contraction, try to hold the contraction for four seconds, and repeat the exercise in sets of ten. Once you have mastered this, you're ready to move on to the next stage

CORE STRENGTHENING

Stage 1

Learn to contract the deep muscles which stabilise the spine. At first this takes quite a bit of concentration. Each individual will master this at their own pace. There is no set time, but perseverance is the key.

Stage 2

Increase the endurance capacity of the deep stabilising muscles of the spine, by practicing to contract them in different situations for as long as you can. This will become easier with practice.

Stage 3

Begin arm and leg movements whilst contracting the deep stabilising muscles of the spine.

Stage 4

Progress to the core strengthening exercises, while contracting the deep stabilising muscles.

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Stage 2 Increasing Deep Muscle Endurance: Using the same techniques described in Stage 1, you should eventually aim to hold the contraction for as long as is possible. You will find that once you have activated the muscles to this level it will become second nature to you.

To progress from Stage 1, simply increase the duration of the contraction to ten seconds, then twenty, while continuing to practice in sets of ten. Then progress the contraction to as long as possible, aiming for five minutes, then longer.

At this point, progress to contracting the deep stabilisers in different positions such as sitting and standing. Practice while you are doing everyday activities, such as sitting at the computer, watching TV or on an exercise bike.

Once you have mastered this you will be ready to progress to stage 3.

Stage 3 Arm and Leg Movements: The whole point of Core Strengthening is to increase the support for your back and trunk in order to provide a more stable base for arm and leg movement. The best position to start these exercises is on all fours.

Commence by contracting the deep stabilisers (as described in Stage 1) and hold this contraction. Then raise your right arm straight out to the horizontal. Perform the movement slowly and in a controlled fashion - there should be no wobbling or unwanted movement of the trunk. Hold the arm up for four seconds and then slowly lower.

Repeat for the left arm.

Next, whilst maintaining the same position, contract the deep stabilisers and then slowly lift your right leg up straight to the horizontal. Hold it there for four seconds and then slowly lower. The movement should be controlled and there should not be unwanted movement of the trunk or pelvis.

Repeat for the left leg.

Once you have mastered these exercises and can perform them slowly and in a controlled manner, contracting your deep stabilisers throughout, you can practice the Bird-dog exercise.

To perform the Bird-dog, contract the deep stabilisers and then slowly lift your right arm and left leg at the same time out to the horizontal. Hold them there for four seconds and then slowly lower.

Repeat for the left arm and right leg.

Once you have mastered these exercises, whilst maintaining a contraction of the deep stabiliser muscles, you can start doing advanced core strengthening exercises.

Stage 4 Advanced Core Strengthening Exercises: *It is highly recommended that you seek advice that you are performing these initial stages correctly before moving onto these more advanced exercises.*

Wobble Cushion: Practice Stages 2 and 3 whilst sitting, kneeling and standing on a wobble cushion.

Gym/Swiss Ball: Practice Stages 2 and 3 whilst sitting and lying in different positions on a gym ball.

Side-bridge: Lay on your side on an exercise mat. Keep your body and legs straight. Push up on your forearm. Hold for 6 seconds. Roll over and work the other side.

Side-bridge with abduction: Lay on your side on an exercise mat. Keep your legs and trunk straight. Push up on your forearm and hold. Steady yourself and raise your top leg up and hold for 4 seconds



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