

ANATOMY OF THE SPINE & EXERCISES FOR CORE STABILITY – DO THESE FIRST BEFORE PROGRESSING TO MOBILITY EXERCISES



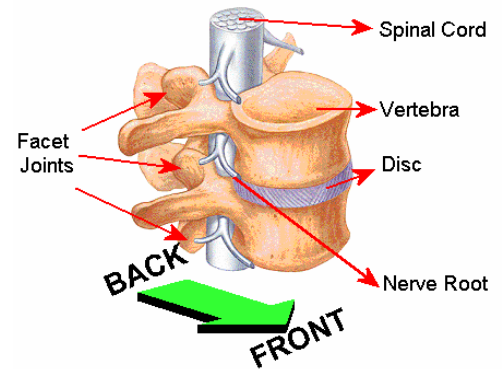
Fig 1 View of spine from the side



Fig 2 A vertebra viewed from top

The parts of your spine and how they work

The spine is made up of 25 bones (vertebrae) that are stacked on top of each other to create the spinal column. Between two vertebra is a soft, gel-like cushion called a disc. In addition to the discs the spine also has small joints at the back called facet joints. The spine itself has four main segments: the cervical spine, the thoracic spine, the lumbar spine and the sacrum or the tail end. The normal spine has a double "S"-like curve when looking at it from the side. This allows for an even distribution of weight. When viewed from the top each vertebra has a hole in the center, so when they stack on top of each other they form a hollow tube (spinal canal) that holds and protects the spinal cord and its nerve roots.



Spinal Cord and Nerve Roots

The spinal cord is a column of millions of nerve fibers that run through the spinal canal. The spinal cord extends from the brain to just below the chest. After this it continues as a collection of nerves called the cauda equina. The spinal cord branches off into thirty-one pairs of nerve roots. These nerve roots exit the spine on both sides through spaces (neural foramina) between each vertebra. The nerves in each area of the spinal cord connect to specific parts of your body.

Core Stability

As mentioned before the spine consists of a series of bones placed on top of each other with the discs in between. This structure is not very stable on its own. It becomes unstable if weight is put on it or when it is moved about. The ligaments hold the bones together and give the spine a certain amount of stability. However, much of the stability of the back is provided by the muscles. This muscular system is often disrupted in people with low back pain and it is useful to attempt to correct this. There are two main muscles that are affected in back pain. Building them up helps recover from back pain in most cases.

1. The multifidus muscle, at the back, which runs from one back bone to another along the spine.
2. The transversus abdominis muscle. This is a muscle deep in the tummy and encircles the tummy like a jacket.

Core stability exercise programme

Core stability work is the term for the exercises which are done to improve the muscles around the back. It is only necessary to tense the muscles up to about 25-30% of their maximum capacity to get the best effect. So trying very hard when doing these exercises is not helpful. All the exercises are held for 10 seconds and done 10 times. Three times a day is enough initially.

1. Exercise One (Pull belly button to spine)

Lie on your back in a relaxed position. Tighten up the "pelvic floor" as if you are trying to stop yourself passing water, then pull your belly button towards your spine. Hold for ten seconds then relax. Do not tense up the chest or lift your hips off the surface. Remember to keep breathing normally. Give yourself a short time to recover then repeat the process until you have done it ten times.

2. Exercise Two (Lift bum off floor)

Lie on your back. Bend your hips and knees. Tighten up the "pelvic floor" as mentioned above. Push down with your feet and lift your bum off the floor and try to keep your trunk and thighs in a straight line, Hold for 10 seconds and then relax. Repeat 10 times.

Standing and sitting

Pulling the belly button towards the spine is an exercise that can be done constantly even while standing, sitting, talking, watching TV etc. You cannot overdo this exercise.

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