

FACTSHEET

Core strength training

What is the core?

The core is like a muscular box, defined by the abdominals at the front, the paraspinals and gluteals in the back, the diaphragm at the top, and the pelvic floor and hip girdle musculature at the bottom. It consists of 29 pairs of muscles that help to stabilise the spine, pelvis and kinetic chain during functional movement. The muscles most often recognised in the core are the transversus abdominus, multifidus and the internal and external obliques, though they are only part of a more composite system. Whenever a person moves, their core is activated.

The importance of core strength is being increasingly recognised. Improved core strength is associated with:

- improved running efficiency
- decreased risk of injury, particularly of the lower back
- improved transfer of power between the lower and upper body extremities, and vice versa (for example, a tennis serve will transfer power from the legs to the arms)
- improved balance
- the potential to improve both acceleration and deceleration.

Successful development of the core can be achieved through Pilates and Swiss ball exercises.



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Pilates

Pilates uses coordinated breathing and movements to stretch and strengthen the body, targeting balance, posture and core strength. Exercises include the use of spring-loaded machines and Swiss balls, and floor exercises. Pilates aims to engage multiple muscle groups, working from the core to create stability, and progressing to the appendicular musculoskeletal system (upper and lower limbs) to enhance mobility and strength. One of the key principles of Pilates floor work is establishing a 'neutral spine', which immediately activates the core muscles. The person lies on their back with their knees bent and feet placed flat on the floor. The navel is then pulled in to tighten the lower abdominal muscles. By pressing their fingers just above their pelvic bone, the person should be able to feel the deeper core muscles tighten as they pull their stomach muscles in. Originally embraced by dancers, Pilates is now used by athletes and the general population as a method of enhancing the musculoskeletal system.



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Swiss ball

Like Pilates, the Swiss ball is used to develop core stability. A person exercising on a Swiss ball must maintain balance and stability on the ball while performing various movements and exercises.



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