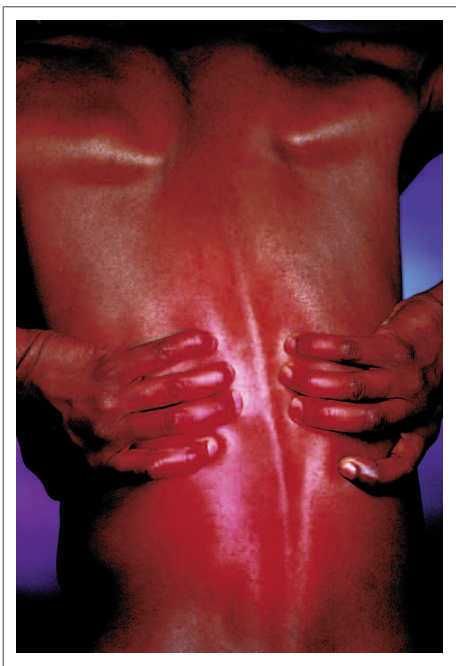


# Anatomy of a Backache



*Special  
Report*



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Knowing a little about the spine and its parts makes it easier to understand why things can often go wrong with the back.

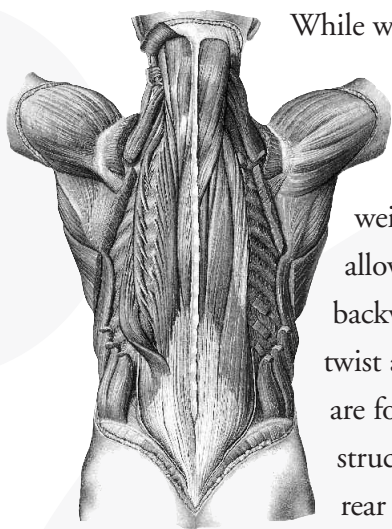
Humans are born with 33 separate vertebrae. By adulthood, most people have only 24. The reason for this is that the nine vertebrae at the base of the spine grow together forming the sacrum and the coccyx, or tailbone.

Physicians use a code to identify the vertebrae. The seven cervical vertebrae in the neck that support and provide movement for the head are called C1 to C7. The thoracic vertebrae T1 to T12 join with and are supported by the ribs to protect the heart and lungs. Because they're fairly rigid, thoracic vertebrae don't permit much movement, and, consequently, aren't injured as often as the other vertebrae. The lumbar vertebrae L1 to L5, below the thoracic vertebrae and above the sacrum, are most frequently involved in back pain because they carry most of the body's stress.

The vertebrae are not stacked one on top of the other in a straight line. Rather each rests on the one below at an angle, forming an S-curve when viewed from the side. The vertebrae would collapse like a house of cards without tough ligaments that secure one to another, and strong muscles and tendons that keep the spinal column upright.

Sandwiched between each pair of adjacent vertebrae is a spinal disc. There are 23 discs in all. Discs are flat and round, roughly one-quarter to three-quarters of an inch thick. Each disc consists of a tough outer ring of tissue with a soft, white jelly-like center. Discs are connected by flat, circular plates of cartilage.

The discs not only keep the vertebrae apart, but also act as shock absorbers by compressing when weight is put on them, and springing back when the weight is removed.



While we need the strong, solid parts of the lumbar vertebrae to bear the body's weight, only joints will allow us to bend backward and forward, twist and turn. These joints are found in a ring-like structure of bone at the rear of each vertebra called the arch. The arch has

a hollow center and little bones that spur off in several directions, serving as anchors for muscles and ligaments. The facet joints—a pair of vertical bones projecting upward and another pair projecting downward—glide on similar smooth-surfaced bones in the vertebrae above and below them, creating an interlocking column of bones. The hollow areas of the arches form a channel (spinal canal) that encloses and protects the spinal cord. The only parts of the spine that we can feel with our fingers are projections from the bony rings called spinous (thorn-like) processes. Each spinous process bends down slightly over the one below to form an extra shield for the spinal cord.

The spinal cord, an extension of the brain, extends as far as L1, where it ends in a sheaf of nerves (cauda equina) resembling a horse's tail. Throughout the length of the spine, 31 pairs of nerves branch off from the spinal cord and serve all parts of the body,

transmitting sensory messages to the brain, and messages from the brain to the muscles. These nerves exit the spinal cord through spaces, called foramina. Those between adjacent vertebrae are called nerve roots. Few people are aware that when the neck is bent forward as far as it will go, the whole spinal cord moves upward in the spinal canal. Anything that prevents the cord and nerves from moving freely, such as abnormal bone growth within the spinal canal, will cause tingling or pain.

It all adds up to 33 vertebrae, 23 discs, 31 pairs of spinal nerves and 140 muscles that hook on to the vertebrae, not to mention all the ligaments, tendons and cartilage. In other words, a very complicated wonder of anatomy with many potential sources of back trouble.

The WellnessOne™ team of professionals specialize in the treatment of back and neck problems. For more information, or to schedule an appointment, call WellnessOne™ at 425.644.8386 today.



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