

The Spinal Cord and its Functions

The spinal cord is made up of nerve fibers that travel in two ways. These fibers send messages from the brain to the body and vice versa.

An example of messages being sent is... when you touch something hot/cold/sharp etc, messages are sent through your spinal cord and your body reacts with the reflex action. This can also be seen when you are off balance, miss a step, or misjudge something.

THE LOWER BRAIN – made up of the brain stem, cerebellum, and basal ganglia.

The brain stem is the stalk of the brain connecting it to the spinal cord. This area is highly involved in maintaining the body's centre of gravity and plays a huge role in stability and balance training.

The cerebellum is the modification area. This is where running, jumping, and agility training are adjusted. The cerebellum adjusts the actual movement pattern being produced so that everything works the way that it should.

The basal ganglia helps the brain control complex motor activities, and almost all the motor nerve fibers pass through the basal ganglia. This area is used to initiate and control repetitive and continuous movement patterns such as walking or running.

THE HIGHER BRAIN (cerebral cortex) – controls the most complex motor patterns and is responsible for initiation of all voluntary movements.

Together the SPINAL CORD, LOWER BRAIN AND UPPER BRAIN, along with the rest of the central nervous system are continually attempting to learn, store, recall, and modify movement to help our bodies move and react in a changing environment.

As your body changes (grows, gets damaged, gets stronger, shrinks, weakens), then these systems are affected and will adjust to reprogram the body to compensate. This process happens all through our lives and requires constant coordination of the neuromuscular system. This is another good reason why we all need to be consistent and efficient in our exercise programs.