

Correcting Somatic Dysfunction with Spinal Manipulation: A Treatment for the Ages

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Spinal manipulation has been practiced for thousands of years. It was depicted in ancient hieroglyphic forms, and it was practiced by Hippocrates and by the physicians of imperial Rome. The tradition was continued and passed on by “bonesetters” in medieval Europe and, in the 1870s, A.T. Still, M.D., established osteopathic manipulation as a legitimate medical discipline.

Besides acupuncture, osteopathic medicine is likely the oldest method of promoting wellness and good health.

Osteopathic spinal manipulation is based on treating somatic dysfunction. Everyone has some degree of somatic dysfunction, which is defined as an impairment or alteration in the function of related components of the body's framework (i.e., the somatic system). This system includes skeletal, arthroal and myofascial structures and related vascular, lymphatic and neural elements.

The essentials of spinal manipulation

In regards to the spine, somatic dysfunction typically involves localized restrictions between neighboring spinal vertebrae. These restrictions are believed to be caused by the contraction of small muscles attached to the vertebra. Somatic dysfunction can be caused by a physical trauma, such as a fall, or by a series of microtraumas that occur repeatedly, such as those experienced when one puts one's body in an unnatural position for an extended period of time.

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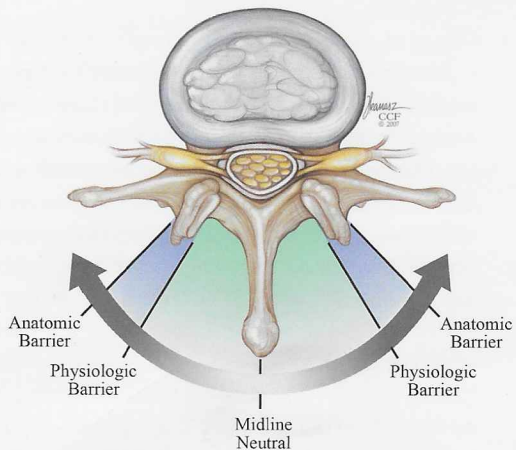


Once a vertebra is out of its normal resting position (see the figure), nerve receptors in the contracted muscles and ligaments become stimulated. This information is relayed back to the spinal cord. The segment of the spinal cord that receives this information is itself stimulated (facilitated). This segment of the spinal cord normally is responsible for maintaining resting muscle tone in the local muscles. When the nerves in this segment become facilitated, the normal resting muscle tone of the local muscles becomes increased. This increase keeps the muscles contracted (tight), which in turn keeps the vertebra in its new pathologic neutral position.

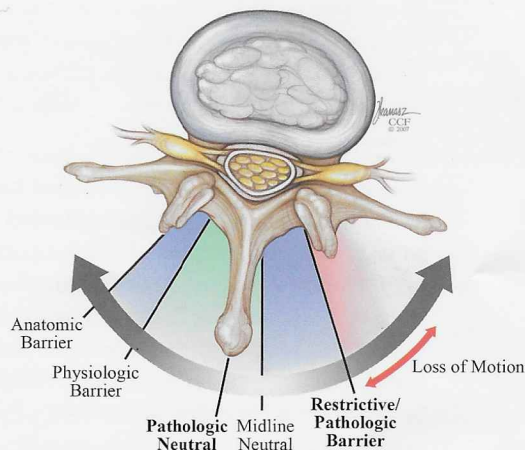
Somatic dysfunction can be acute (a few days) or chronic. A trained examiner can differentiate between acute and chronic dysfunction by palpating the skin along the spine. In acute somatic dysfunction, the skin feels warm, sweaty and swollen, and it is tender to the touch. In chronic dysfunction, the area feels cool, dry and ropy. These local changes occur because the nerves coming from the facilitated segment of the spinal cord produce chemical changes that decrease local blood flow and cause low-grade inflammation. If an acute somatic dysfunction persists and becomes chronic, the inflammation subsides.

In addition to palpating the skin along the spine, specialists in spinal manipulation find somatic dysfunction by looking for spinal asymmetry and a restricted range of motion between vertebrae. Spinal manipulation corrects somatic dysfunction by decreasing abnormal neural tone in the facilitated segment of the spinal cord. This can reduce or reset the local muscle contraction that holds the vertebra in somatic dysfunction and lead to a more normal range of motion. It also improves local blood circulation and reduces tissue swelling and pain.

In a vertebral segment without somatic dysfunction, the vertebrae may rotate equally to either side.



If somatic dysfunction is present, the vertebral segment will not lie in the midline position, and the patient will not be able to rotate the vertebral segment past the restrictive (or pathologic) barrier.



The viscerosomatic reflex

In the spinal cord, the nerves coming from segmentally controlled muscles mix and interact with nerves coming from internal organs. Just as a spinal cord segment becomes facilitated when local muscles are contracted over time, it also can become facilitated when nerves enter a spinal cord segment from an irritated or diseased organ. This can cause segmental somatic dysfunction of the vertebra as segmental muscles become contracted due to the facilitated spinal cord segment. This is called a viscerosomatic reflex.

If spinal manipulation is performed on such a vertebra, it not only will help correct the somatic dysfunction, but it also can improve circulation to the irritated organ and reduce the increased neural tone of the spinal cord segment. This is how spinal manipulation has been used for millennia to treat

medical illness as well as back and neck pain. Much research continues to be done in an effort to further understand the mechanisms and effects of spinal manipulation. Few treatments have survived the test of time as long as spinal manipulation has.

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