

Options for Spine Treatments

Benefits of Spinal Manipulation

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Spinal manipulation refers to the movement of a spinal segment by applying a force to the area. Spinal manipulative therapy (SMT) can be performed using a variety of different techniques. Manipulation improves spinal segmental movement and influences the nervous system.

Chiropractic physicians are well trained and experienced in the art of spinal and extra-spinal manipulation. Chiropractic focuses on the relationship between musculoskeletal structure (primarily the spine) and bodily function (primarily nervous system function) and on how this relationship affects health. Most spinal manipulation is performed by chiropractors. It is estimated that there may be more than one hundred chiropractic and spinal manipulation techniques. Healthcare specialists of different disciplines may differ in their approach to manual treatment of the spine.

Research on animals and humans has revealed that abnormal positioning or spinal movement of the spine can change the function of nerves coming from the spine and may alter heart rate and blood pressure. Spinal manipulation reduces pain by improving spinal joint mobility and by decreasing muscle spasm/guarding. It has also been proposed that SMT reduces pain through the release of chemicals that suppress pain such as substance P and endorphins.

Spinal manipulation is performed to help improve the mobility of spinal segments. Improved spinal mobility is associated with improved stimulation of sensory nerve endings around the spinal joint (facets), which sends nerve messages to specialized nerve centers within the spinal cord and brain. Good joint movement and normal sensory input increases the likelihood of appropriate muscle function and muscle reactivity around spinal segments.

Good spinal segment mobility reduces the risk for developing scar tissue or adhesions around the spinal joints (facets). Normal spinal joint mobility also helps to reduce pressure within the intervertebral foramen. Spinal movement prevents the adverse effects of immobilization degeneration.

The mechanical benefits of manipulation include:

- Release of entrapped synovial tissue
- Release of entrapped/migrated disc tissue
- Stretching and breaking up of scar/adhesions

- Dynamic stretching of muscle/myofascial tissues
- Dynamic stretching of the muscle spindles and Golgi Tendon apparatus

Neurological Benefits of Spinal Manipulation

The classical theory of the "pinched nerve" has been replaced by a model that includes direct and indirect effects of manipulation on the function of the peripheral and central nervous system. There are many areas within a spinal segment where nerve structures can be physically compressed or entrapped. This includes small nerve structures not just the large spinal nerves. Neural structures are responsible for pain, sensation, muscle control and autonomic nervous system function.

Two proposed neurological mechanisms of spinal manipulation include:

- Reduction of compressive insult on nerve tissues
- Creation of stimulus-induced reflex changes at the spinal level

Spinal manipulation causes dynamic stretching of deep spinal muscles and gapping of the spinal joints with mechanical stimulation of nerve receptors in the spinal joint capsule. Both of these mechanisms simulate nerve endings, which through a reflex arc influence muscle tone and inhibit pain.