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Excerpted from the 4/00 - 7/00 Newsletter

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Anatomy: The Paravertabral Chain [Table of Contents](#) | [Go Top](#)

Most people know that within the vertebral column is the spinal cord —the main cable in the body’s information system. Less well-known are two nerve bundles, called ganglia, which lie just outside the vertebral column. These two ganglia resemble beaded chains running from the top of the neck down to the tailbone (coccyx).

The specialized nerves which extend from these chain-like ganglia are called sympathetic nerves, and the ganglia themselves are called the sympathetic chain ganglia. Due to the location of these ganglia running along the left and right sides of the vertebral column, they are sometimes also referred to as the paravertebral chain ganglia.

A number of vital internal organs are profoundly affected by signals traveling along the nerves given off by the paravertebral chain. For instance, stimulation of the portion of the paravertebral chain located in the upper back can increase heart rate, elevate blood pressure, and open up the bronchial passages leading to the lungs. Lack of stimulation in the same region of the paravertebral chain will lower heart rate, depress blood pressure and cause the bronchial passages to constrict.

The stomach, liver, pancreas, spleen, and the entire intestinal tract also receive sympathetic nerves from the paravertebral chain. In fact, virtually every organ of the chest, abdomen and pelvis is affected by nerves which originate from these ganglia.

Of particular importance is the fact that almost every blood vessel in the body receives sympathetic fibers from the paravertebral chain ganglia. Signals from these fibers cause the muscles in the blood vessel walls to contract, causing the vessel to constrict. When signals from these sympathetic nerve fibers stop or become less intense, the muscles in the blood vessel walls relax, allowing the vessel to expand or to “dilate.”

An understanding of these nerve fibers is very useful in the chiropractic examination. A displaced or abnormally mobile vertebra—called a vertebral subluxation—can disturb the paravertebral chain. This disturbance can cause related blood vessels to constrict or dilate in an abnormal manner. This disturbance can often be detected as hot or cold areas in the skin, giving the doctor of chiropractic valuable information in the search for subluxations. For example, a left-right temperature difference in the hands may be caused by a subluxation disturbing the paravertebral chain in the lower neck or the upper back. A left-right temperature difference in the feet may represent a similar disturbance in the lower back.

Neurological disturbance is rarely “skin deep.” The sympathetic nerves that control the blood vessels of the skin originate from the same place as the nerves that control the internal organs and the blood vessels leading to them. The same subluxation causing a hot or cold spot in the skin may also be changing the thermostat of one or more internal organs. This may be one reason that patients sometimes report relief from difficulty in breathing, indigestion, intestinal upset and other such problems following a chiropractic adjustment, even though chiropractic does not treat internal disorders as such.

Chiropractic Research Review [Table of Contents](#) | [Go Top](#)

1. How Often Do Patients Experience Benefits Beyond Pain Relief Under Chiropractic Care?

Reference: Leboeuf-Yde, C., I. Axen, G. Ahlefeldt, P. Lidfelt, A. Rosenbaum, and T. Thurnherr. The Types and Frequencies of Improved Nonmusculoskeletal Symptoms Reported After Chiropractic Spinal Manipulative Therapy. Journal of Manipulative and Physiological Therapeutics, 1999; 22: 559–564.

Synopsis: The rapidly growing chiropractic community of Scandinavia has been extraordinarily active in clinical research. This study is the product of a group of Swedish chiropractic investigators in cooperation with the Nordic Institute for Chiropractic and Clinical Biomechanics in Denmark.

More than 1,500 chiropractic patients were questioned about unexpected positive changes other than reduction of back pain, such as improved hearing, vision, breathing, digestion, etc. More than 20% of these patients answered in the affirmative. Within this group, the most commonly reported extra bonus of the chiropractic adjustment was easier breathing (21%). Other beneficial side effects included improved digestion (20%), improved vision (11%), better circulation (7%) and improved hearing (4%). One patient in particular maintained that he had experienced improvements in vision, heart rhythm, respiratory function, the appearance of his skin, digestive ease and sexual function.

The authors of this study were careful to note that a subjective improvement in a symptom does not necessarily mean that the related bodily function has actually improved. However, the subjective reports by these patients is supported by previous research in which actual lung

volumes, blood pressures, etc., were measured before and after chiropractic care. You will find much of this material summarized in our publication Neurological Fitness.

2. Chiropractic vs. Ultrasound for Patients with Neck Pain

Reference: Moodley, M., and J.W. Brantingham. The Relative Effectiveness of Spinal Manipulation and Ultrasound in Mechanical Pain: Pilot Study. Chiropractic Technique, 1999; 11 (4): 164–168.

Synopsis: The chiropractic college at Technikon Natal, South Africa is relatively new. The authors of this study are to be congratulated for their early commitment to research publication.

Thirty patients with neck pain at the college clinic were randomly assigned to two groups. One group received ultrasound therapy, while the other group received chiropractic adjustments. Each patient filled out three well-established pain and disability questionnaires before and after a four-week treatment period. The range of motion in the neck was also carefully recorded before and after the treatment period.

Both ultrasound treatments and chiropractic adjustments were effective in alleviating pain and increasing range of motion; however, the results for disability and certain ranges of motion were significantly superior in the chiropractic group. The authors call for a larger study in the near future to verify the findings of this pilot study.

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We realize that a lot of you use your cell phones to keep in contact with your offices, your clients and your kids; however, we hope that you will honor the following requests:

1. Turn your cell phone off in the office. There are days when there are so many phones ringing that the place sounds like an old fashioned switchboard.
2. If you must take or make a call, please keep your voice down to the level that you would use if the person on the phone were sitting next to you. Some of you become extremely animated on your cell phones!
3. Please, please, please, don't take calls during your appointment! It is so awkward to sit in an examination room trying not to listen to a personal conversation, especially while your fifteen minute appointment slips away.

Thank you!

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