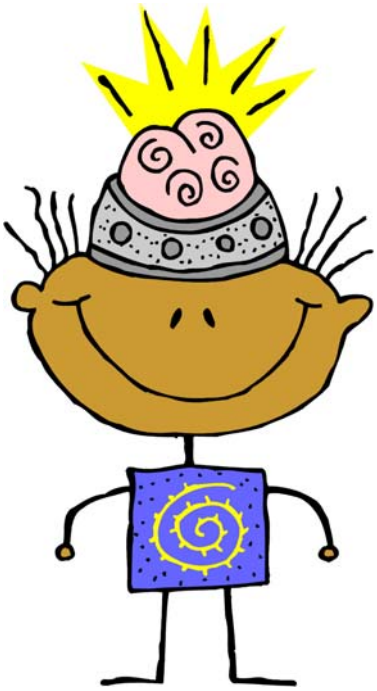
Optimal Health University™

Presented by Katie Gravesen, DC

Spinal Problems Reduce Blood Flow to the Brain



You probably are aware that spinal problems trigger back and neck pain. But did you know that research links them with a vast array of other health concerns? In fact, nearly every month researchers discover a major new finding regarding spinal dysfunction and disease.

Dr. Gravesen is committed to staying up-to-date with wellness research, and sharing this information with patients. When fully informed, patients are better able to make choices that propel them toward optimal health. What's the very latest in chiropractic research? The finding that chiropractic care may ward off a common condition that reduces blood flow to the brain. Read on to learn more.

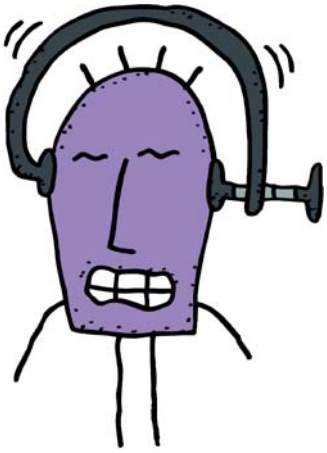
What Is Cerebral Hypoperfusion?

In medical nomenclature, the term "perfusion" refers to the process of liquid flowing to an organ. An increase in blood flow is known as "***hyper***perfusion," whereas a decrease is dubbed "***hypo***perfusion."

When discussing blood flow specifically to the brain, the moniker "cerebral perfusion" is used. Consequently, "cerebral hypoperfusion" indicates a drop in blood flow to the brain.

Implications of Hypoperfusion

Because blood carries oxygen and nutrients, cerebral hypoperfusion results in a reduction of these life-sustaining substances reaching the brain.



Nausea, fainting and dizziness are also signs of cerebral hypoperfusion (*Minerva Med* 1997;88:9-14).

Cerebral hypoperfusion is associated with an increased risk of brain cell damage and brain cell death, which may up the risk of stroke and dementia. Research also links cerebral hypoperfusion with migraine headaches.

Reduced blood flow to the brain may trigger other disorders, such as cognitive impairment and attention problems.

Cerebral hypoperfusion during pregnancy, childbirth or early childhood may result in cerebral palsy.

Visual, hearing and spatial problems may also occur (*Cortex* 2012; Epub).

What Are Vertebral Subluxations?

Vertebral subluxations are areas in the spine where movement is restricted or spinal bones (vertebrae) become slightly misaligned. This common condition may trigger a plethora of health problems including headaches, back pain, carpal tunnel syndrome, infantile colic, hearing problems, fatigue and impaired cognitive function. And that's merely the tip of the iceberg.

Dr. Gravesen detects vertebral subluxations, and corrects them using specific maneuvers called ***chiropractic adjustments***. This gentle, all-natural protocol has been proven safe and effective by a wealth of scientific research.

Vertebral Subluxations Linked With Cerebral Hypoperfusion

One report found an association between neck pain, vertebral subluxations and cerebral hypoperfusion (*J Manipulative Physiol Ther* 2012;35:76-85).

The experiment enrolled 29 women and 16 men with chronic neck, chronic upper-back pain, or both.

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The patients underwent a specialized form of CT scan, which focuses on imaging blood flow in the brain. This scan is known as single-photon emission computed tomography (SPECT). The researchers looked at blood flow in eight key brain regions.

The patients also completed a standard medical assessment for neck pain called the Neck Disability Index (NDI). In addition, they were evaluated for the number of painful or blocked spinal segments (vertebral subluxations).

Based on NDI scores, neck conditions were classified as mild, moderate, or severe.

Group 1 (mild) consisted of 14 patients. Among this group, cerebral perfusion measured by SPECT was normal in all 8 brain regions.

Group 2 (moderate) consisted of 16 patients. SPECT indicated a 20 to 35 percent decrease in cerebral perfusion among these patients. Most of the reduced blood flow occurred in the parietal and frontal zones of the brain.

Group 3 (severe) consisted of 15 patients. SPECT indicated a 30 to 45 percent decrease in cerebral perfusion among these patients, again predominantly in the parietal and frontal zones.

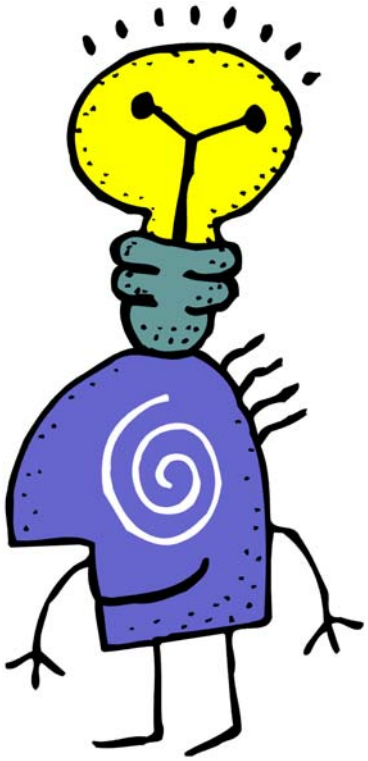
"In this group of patients with neck and/or upper back pain, NDI scores strongly predicted cerebral hypoperfusion," conclude the study's authors (*J Manipulative Physiol Ther* 2012;35:76-85).

Parietal and Frontal Zones

Both the parietal and frontal zones of the brain serve many crucial functions.

The parietal zone is instrumental in coordinating sensory input from the body. It also plays a role in spatial sense and vision.

The frontal zone helps to coordinate voluntary motor control. In addition, it is strategic in regulating sensitivity to the hormone dopamine, which is important for memory and preventing mental health problems.



Why Do Vertebral Subluxations Trigger Cerebral Hypoperfusion?

Why might spinal dysfunction reduce blood flow to the brain? One leading theory involves the nervous system.

The spinal column consists of individual spinal bones (vertebrae) stacked one on top of another, which are separated by gel-filled discs. This sturdy, yet flexible column houses the spinal cord, which is a key component of the central nervous system. The spinal cord connects with brain matter at the base of the skull.

Channels between vertebrae allow nerves to enter and exit the spinal column and travel throughout the body. This intricate construction allows nerve signals to communicate between structures throughout the body, the spinal cord and the brain.

Vertebral subluxations trigger dysfunction in spinal segments, which may irritate nerves entering and exiting the spinal cord, and the spinal cord itself. In turn, spinal dysfunction may influence messages to the brain, including messages about blood flow.

Another theory suggests that chronic pain results in a state of hyperactivity in the nervous system, which may cause permanent changes in the brain, including an increased sensitivity to pain. These changes may be associated with cerebral hypoperfusion.

"Spinal joint dysfunction may be involved via hyperactivity in the regional sympathetic nervous system." (*J Manipulative Physiol Ther* 2012;35:76-85).

Have Questions?
We Have Answers!

Do you have questions about how your spinal health may be affecting your overall well-being? Our chiropractic office is here to help. Whether or not you are a current patient, feel free to contact us for research information on the connection between spinal dysfunction and disease. And, while you are at it, schedule an appointment for a chiropractic evaluation!