

## Lower blood pressure with neck alignment

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A one-time chiropractic adjustment of a misaligned neck vertebra has been shown to significantly reduce blood pressure in people with hypertension, according to a pilot study by University of Chicago researchers.

When the vertebra, known as the Atlas, or C1, was manipulated in 25 people with high blood pressure, both their systolic and diastolic readings decreased significantly, equal to taking two blood-pressure drugs at once.

High blood pressure, or hypertension, is defined in an adult as a systolic pressure of 140 or higher and/or a diastolic pressure of 90 or higher. The mean blood pressure of those who had the adjustment was 147 systolic before adjustment and 129.8 systolic after. The mean diastolic reading was 92.5 before adjustment and 82.3 after.

For years anecdotal reports have linked blood pressure and neck pain, according to the study's lead author, Dr. George Bakris, director of the hypertension center at the University of Chicago Medical Center. He and his team decided to put the hypothesis to the test after he was approached by family practitioner Dr. Bruce Bell of Barrington, who has been interested in this phenomenon for years.

The Atlas vertebra, which lies high in the neck, is not anchored like other vertebrae, so it easily slips out of alignment. It relies solely on muscles and ligaments to stay in place. The vertebra also can become displaced without pain and often goes undetected and untreated.

### **Problem long recognized**

"Even back in the 1960s and '70s, neurosurgeons and some specialized chiropractors knew that things change when you realign C1," Bakris said. "But there has not been the rigor of the scientific method applied to see what's going on. We wanted to find out if this effect lasts longer than a week or two."

Enough chiropractic specialists were aware of the phenomenon to limit their practice to manual alignment of C1. They make up the National Upper Cervical Chiropractic Association. It was a Chicago member of the association, Marshall Dickholtz Sr., to whom patients with high blood pressure and misaligned C1 were sent for the study. Half the patients received a tailor-made adjustment; half received a "sham intervention." Patients were assessed after the alignment as well as at the end of eight weeks.

"We were shocked to find out that we got more than double what we expected in blood pressure reduction," Bakris said. Patients did not need to resume taking blood pressure medicine. The effect lasted for months.

### **Wide-ranging effects**

People with a misaligned Atlas vertebra have leg-length disparities that are noticeable when the person lies down and their heel positions are compared. When patients turn their head to the left or right, their heel position changes. If the heels do not appear parallel to one another or change on head-turning, the Atlas is misaligned.

"There's a lot of nerve traffic through that area," Bakris said. "We have to figure out why it's happening."

Bakris and his team are working with the National Institutes of Health and General Electric to develop a proposal to study changes in blood flow at the base of the brain and changes in neurotransmitters possibly related to serotonin. These changes could result in a lack of blood flow involving the Atlas misalignment. Realignment results in higher levels of serotonin and less nerve traffic.

Study results mean that people with Stage 1 hypertension who are in their 40s and 50s may be freed from blood pressure medication for a time. Older patients on three or four medications may be able to reduce their pill count.

Dr. Chuck Woodfield, a chiropractic researcher in Bellingham, Wash., was part of the research team.

"We need to do more research to understand why this effect occurs," Woodfield said. "It'll be at least five years before we can get the actual mechanism inside the brain."

"When the Atlas misaligns, you get cascaded effects. There are changes in posture and the way blood flows to the brain stem. This sets up an inflammatory process. When you adjust the Atlas, posture comes back to somewhat normal and inflammation decreases. It improves overall health. I don't know if it's a cure-all. It's just one study, and we need to do a multisite study and look at minority populations."

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