

# Insights Into Chiropractic

*Discerning the true nature of an alternative health care method*

## Can Spinal Adjustment/Manipulation Effect Blood Pressure?

### INTRODUCTION

Chiropractors have long held the notion that vertebral lesions may be a contributing factor contributing to the aggravation of many types of visceral disease. Further, chiropractors have long speculated that spinal manipulations might be an intervention that could possibly result in apparent improvement or cure of such disorders having a vertebrogenic origin.

Clearly, there is compelling evidence that insults to the nervous system, possibly from vertebral lesions, could result in the signs and symptoms of many types of visceral disease. For example, medical author Kunert states, ". . . lesions of the spinal column . . . are perfectly capable of simulating, accentuating or making a major contribution to organic diseases. There can . . . be no doubt that the state of the spinal column does have a bearing on the functional status of the internal organs(1)." In addition, the representatives of the Royal Commission of Inquiry Into Chiropractic stated, "A number of medical experts told the Commission that the results chiropractors and their patients claimed in Type O (organic) cases were unlikely to be the results of spinal manual therapy. . . However, at the same time no medical expert was prepared to say that such results were impossible, simply because knowledge of neurophysiology had not advanced to a point where the possibility of such results from spinal manual therapy--however remote he might think they were--could positively be excluded(2)."

In recent articles, Seaman and Winterstein(3) and Nansel and Szlazak(4) have described neu-

roanatomy that can easily demonstrate how vertebral lesions can present with signs and symptoms of primary visceral disease. Indeed, increasing evidence is accumulating that indicates that improvement of spinal structure and function through chiropractic methods may carry with it the beneficial "side effect" of improved visceral health.

### BLOOD PRESSURE AND CHIROPRACTIC ADJUSTMENTS IN NORMAL SUBJECTS

McKnight and DeBoer(5) performed a prospective study of seventy-five normotensive subjects to determine if chiropractic spinal manipulation in the cervical spine had any effect on blood pressure. Fifty-three subjects were assigned to the cervical adjustment group and twenty-two to a control group who received only motion palpation of the cervical spine. Baseline blood pressure was established for all subjects and reliability testing with appropriate statistical analysis was carried out to insure accurate results.

Within one minute of either the motion palpation procedure (in the control subjects) or the cervical manipulation (in the experimental group) blood pressure readings were again obtained and recorded. The blood pressure examiner was blinded as to the subjects control or experimental group status. The results indicated a small (~3mmHg) statistically significant decrease in both systolic and diastolic blood pressure in the experimental group. No change in blood pressure was found in the control group. Although the average blood pressure changes that occurred in the experimental group were small,

the authors state, "It may be noteworthy that substantial before-and-after blood pressure changes occurred in every subject with a preadjustment [premanipulation] value of greater than 130mmHg systolic or 90mmHg diastolic blood pressure(5)."

Further, McKnight and DeBoer go on to state, "The close association of several major autonomic nerves and ganglia with the cervical spine makes feasible the postulate that certain abnormalities affected by manipulation of this area could result in reflex neurological changes affecting the cardiovascular system . . . The most interesting effect was noted in 14 of our experimental subjects who showed a (clinically) significant drop in blood pressure following the adjustment. This suggests a potential method for controlling mild-to-moderate hypertensive patients if further studies using a wider variety of subjects should confirm this finding(5)."

In another study of normotensive subjects, Dulgar et al.(6) report a statistically significant drop in both systolic and diastolic blood pressure in normotensive males (n=5) receiving Basic Technique adjustments versus a modified control group (n=5) receiving sham manipulation and another control group (n=5) receiving no intervention. The authors suggest that their findings along with other anecdotal evidence, " . . . might offer a drugless means of lowering blood pressure in essential hypertensive patients."

#### BLOOD PRESSURE AND CHIROPRACTIC ADJUSTMENTS IN HYPERTENSIVE SUBJECTS

Hypertension is defined as a resting blood pressure greater than 140mmHg/90mmHg. Hypertension affects up to ten percent of the population. In about ten percent of hypertensive patients a definite cause can be found, such as various renal and/or adrenal gland disorders or coarctation of the aorta. In most patients with hypertension, however, no specific cause can be identified. In these instances the condition is known as essential hypertension(7).

McGee(8) presents a case report of a 46 year old female with an eight year history of medication controlled hypertension. The article relates a clinically significant sustained decrease in blood pressure over the eight week period of chiropractic treatment. Subsequent evaluation by the patient's medical practitioner resulted in reducing the dosage of antihypertensive medication by one half.

Yates et al.(9) performed a single blinded controlled trial to assess the effect of chiropractic manipulation on blood pressure of hypertensive patients identified from the files of a Hamilton, Ontario chiropractic office. Patients (n=21) age 35-60 with systolic blood pressures greater than 130 mm Hg and diastolic blood pressures greater than 90 mm Hg were randomly assigned to one of three groups consisting of: (A) active treatment of actual chiropractic thoracic spine adjustment with the aid of an adjusting instrument, (B) placebo treatment consisting of sham chiropractic adjustment with adjusting instrument applied to the thoracic spine with the instrument in the "off" position, or (C) no treatment control group. Yates et al. report, "Results indicated that systolic and diastolic blood pressure decreased significantly in the active treatment condition, whereas no significant changes occurred in the placebo and control conditions. . . Although this study does not address the issue of the mechanism of such an effect, the results lend indirect support to the hypothesis that chiropractic adjustment relieves increased sympathetic neural discharge due to a subluxation of the vertebral unit(9)."

In yet another study by Goodman(10), eight subjects demonstrating C1 vertebral misalignments as determined from upper cervical radiographs were selected from a pool of fourteen subjects with essential hypertension. Over the course of one week, each of the test subjects' blood pressures was monitored to establish a baseline reading. Each subject was then treated three to ten times over a two-month period. At the end of the study period the blood pressures for six of the eight test subjects were lower than at the

start of the study. The blood pressures of two of the subjects remained unchanged, or increased sometime during the test period. Although individual readings of the six subjects with lowered blood pressure showed some random variation during the two-month period, there was a general decrease in blood pressure. The average blood pressure change was from 166/94 to 147/84. Goodman speculates that mechanical abnormalities of the cervical spine may cause a somatovisceral reflex action that raises blood pressure. Chiropractic adjustment of such a vertebral lesion may break the reflex arc and help re-establish more normal blood pressure.

## CONCLUSION

As stated earlier in this newsletter series, chiropractors do not "treat" organic disease (Type O Disorders). This would therefore be an excellent time to restate the findings of the Royal Commission of Inquiry into Chiropractic's findings. The Royal Commission of Inquiry stated, "The chiropractor does not set out to cure or relieve a particular ailment. What he sets out to do is to ensure that the spinal column is functioning normally. If a particular ailment clears up or is relieved following therapy, so much the better. If it does not, then at least the patient, now with no spinal impediment to the working of his nervous system, ought to be in a generally better condition and better able to cope with the ailment(2)."

In other words, the findings reported above in the subjects with essential hypertension are merely side effects of spinal adjustments--they just happen to be pleasant side effects!

As the Royal Commission of Inquiry found, Chiropractic is a profession whose aim is the improvement of the function of the nervous system by improving the structure of the "living conduit" in which part of that nervous system is housed. Because chiropractors apply mechanical forces directly to that living conduit (the spinal column), this is the reason why those clinical entities that are primarily musculoskeletal in

nature respond most readily to the adjustments/manipulations that chiropractors apply to patients' spines. This makes chiropractic a limited specialty much like the practices of optometry, podiatry, and dentistry. Unlike optometry, podiatry, and dentistry, chiropractic is a limited specialty with documented full body ramifications. This documented evidence does not, however, change the prime directive of chiropractic treatment--that is, the treatment of vertebral lesions--not visceral disease.

## REFERENCES

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