

Risk of Traumatic Injury Associated with Chiropractic Spinal Manipulation in Medicare Part B Beneficiaries Aged 66-99

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James M Whedon, DC, MS; Todd A Mackenzie, PhD; Reed B Phillips DC, PhD; Jon D Lurie, MD, MS; The primary author is from the Dartmouth Institute for Health Policy and Clinical Practice

OVERVIEW:

This is a retrospective cohort study. The objective of this study was to compare the risk of injury to the head, neck or trunk following an office visit for chiropractic spinal manipulation for neuromusculoskeletal pain, as compared to office visits to a primary care physician. The study subjects were aged 66-99 years.

This study was quite large. It assessed:

- 13,536,595 primary care office visits
- 10,532,213 chiropractic office visits

KEY POINTS FROM THIS STUDY:

- 1) "This is the first nationwide population-based study in the US on risk of injury following SM, and the first study of the risks of chiropractic to focus specifically on older adults."
- 2) "The adjusted risk of injury in the chiropractic cohort was lower as compared to the primary care cohort [by 76%].""Among Medicare beneficiaries aged 66-99 with an office visit risk for a neuromusculoskeletal problem, risk of injury to the head, neck or trunk within 7 days was 76% lower among subjects with a chiropractic office visit as compared to those who saw a primary care physician."
- 3) "It is unlikely that chiropractic care is a significant cause of injury in older adults."
- 4) The cumulative probability of injury was:
 - In the chiropractic cohort: 40 injury incidents per 100,000 subjects
 - In the primary care cohort: 153 incidents per 100,000 subjects

5) The following factors increased the risk of injury from chiropractic:

- A chronic coagulation defect
- Inflammatory spondylopathy
- Osteoporosis
- Aortic aneurysm and dissection
- Long-term use of anticoagulant therapy

6) "Chiropractic physicians should exercise caution with regard to the provision of spinal manipulation in older patients with coagulation defects, inflammatory spondylopathy, osteoporosis, aortic aneurysm & dissection, or long term use of anticoagulant therapy."

7) In this study there were 2,786 injured subjects in the chiropractic cohort, as follows:

- 1,132 with fracture
- 1,059 with dislocation or soft tissue injury
- 562 with brain or spinal cord injury
- 33 with blood vessel injury

"We found no nerve injuries in the chiropractic cohort." **[Important]**

8) These factors increased the risk of a chiropractic injury:

2,300%	<u>Aortic aneurysm & dissection</u> (injury to blood vessels) [Important]
159%	Inflammatory spondylopathy (dislocation or soft tissue injury)
130%	<u>Aortic aneurysm & dissection</u> (fracture)
117%	Long-term use of anticoagulant therapy (brain or spinal cord injury)
87%	Coagulation defects
66%	Osteoporosis (for fracture)
61%	<u>Aortic aneurysm & dissection</u> (injury in general)
41%	Osteoporosis (injury in general)

9) "Chiropractic physicians should exercise caution with regard to the provision of spinal manipulation in older patients with coagulation defects, inflammatory spondylopathy, osteoporosis, aortic aneurysm & dissection, or long term use of anticoagulant therapy."

10) These authors found that increased age and comorbidity were associated with higher risk of injury. **[This is important because the subjects in this study were quite elderly, yet the injury rate was quite low. This would imply that in a younger patient population group, the injury rate would be even lower.]**

- 11) "Spinal Manipulation as performed by chiropractors is an effective option for the treatment of certain types of spinal pain and some headaches."
- 12) "A recent trial designed to evaluate the frequency of adverse effects of chiropractic treatment reported no serious events."
- 13) Prospective studies have found that adverse effects associated with chiropractic care and spinal manipulation are "transient and benign."
- 14) "It is unlikely that chiropractic care is a significant cause of injury in older adults. The lower risk [of injury] in the chiropractic cohort may suggest to some that chiropractic care is protective against injury in older adults."
- 15) "Although the risk of vertebral artery injury and stroke following spinal manipulation is controversial and the subject of much investigation, subjects with injury to blood vessels comprised only 1% of subjects with injuries. This finding is consistent with the results of recent research that found a very low incidence of vertebrobasilar stroke among older Medicare beneficiaries."
- 16) "The risk of injury in patients with intervertebral disc disorder with myelopathy was actually reduced, suggesting that this condition is not a risk factor for injury due to chiropractic spinal manipulation." **[Important]**
- 17) "In conclusion, among Medicare beneficiaries aged 66-99 with an office visit risk for a neuromusculoskeletal problem, risk of injury to the head, neck or trunk within seven days was 76% lower among subjects with a chiropractic office visit as compared to those who saw a primary care physician."

COMMENTS FROM DAN MURPHY:

Risk of vertebrobasilar injuries are emphasized in chiropractic education. In this study an analysis of the numbers indicates that there were approximately 28 vertebrobasilar injuries (1% of 2,786 injuries), or about 1 such injury per 1,019,000 chiropractic office visits. This is consistent with other published studies.

Chiropractors should be extremely mindful and cautious in patients with aortic aneurysms, as the risk of injury is quite high (increased by 2,300%).

It is interesting that this study found that chiropractic spinal adjusting in this older person population was safe for patients with intervertebral disc disorders, and adjusting such patients did not increase the risk for myelopathy, but actually protective.