

# Spinal Manipulation Therapy for Acute Low Back Pain

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## Introduction

The effectiveness and efficacy of spinal manipulation therapy (SMT) for acute low back pain has been discussed and studied extensively over the past several years. Many randomized controlled trials (RCTs) and systematic reviews have been published on this topic, and recommendations regarding SMT appear in most of the major clinical practice guidelines around the world. While trends have emerged in the various guidelines regarding the effectiveness of SMT, final interpretations on the value of SMT are often subject to the point of view of authors and associations from which these publications were derived.

In order to gain a current understanding of SMT for acute low back pain, the North American Spine Society (NASS) recently organized the Task Force on Contemporary Concepts on Manipulation, Mobilization, and Massage. This task force is comprised of an interdisciplinary team of nine researchers and clinicians, including doctors of chiropractic (DCs), a doctor of osteopathic medicine (DO), doctors of medicine (MDs), and epidemiologists. NASS is the largest spine care organization in North America and one of the most prominent spine care organizations in the world. According to NASS, "This Contemporary Concepts in Spine Care review is part of a series of referenced reviews of contemporary issues in spine care . . . Each review represents the current state of knowledge on a particular topic."<sup>1</sup>

The purpose of this article is to summarize the findings from the recently published NASS Contemporary Concepts paper on SMT for acute low back pain.<sup>1</sup>

## Methods

The NASS Task Force described above identified RCTs on SMT for acute low back pain by searching the MedLine database and two recent systematic reviews. Inclusion criteria for RCTs were as follows:

- ▶ **Patients:** Individuals  $\geq$  18 years of age with low back pain of < 12 weeks in duration.
- ▶ **Intervention:** SMT including high velocity low amplitude, mobilization, and instrumented techniques.
- ▶ **Control group:** Any intervention without SMT or that allowed SMT sub-types to be compared.

- **Primary outcome measures:** Patient-reported outcomes measures of pain and physical function.
- **Language of publication:** English.
- **Dates of publication:** 1999-2009.

## Results

The search found 14 eligible RCTs, which enrolled a total 2,027 patients. The quality of the research methods was high in seven RCTs and low in the other seven RCTs. SMT was administered by a DC in five RCTs, physical therapist in five RCTs, DO in two RCTs, MD in two RCTs, and an unclear provider in one RCT. The number of treatment sessions ranged from 1-20 and treatment duration ranged from 1-12 weeks. SMT was compared with various interventions (e.g. physical modalities, medications, back supports, education, exercise, bed rest) and placebo groups (e.g. sham SMT, placebo medication, de-tuned diathermy). Co-interventions (e.g. exercise, education, medication) were often administered along with SMT. Safety data were reported in five of the 14 RCTs, pain was assessed in nine RCTs, and physical function was assessed in nine RCTs.

## Discussion

The evidence summary for SMT for acute low back pain is as follows:

### Pain Relief

- SMT was found to be effective for pain relief in the short-term, intermediate term, and long-term for acute low back pain.
- SMT was found to be equivalent to common interventions, including physical modalities, education, exercise, and medication in six RCTs.
- SMT to be superior to education, sham SMT, and/or placebo medication in three RCTs at one or more time points. Doctors of chiropractic administered the SMT intervention in each of these three RCTs.
- No RCT found that SMT was inferior to any other intervention for pain relief.

### Improvement in Physical Function

- SMT was found to be modestly effective

for improving self-reported physical function

- SMT was equivalent to common interventions in seven RCTs, superior in one RCT, and inferior in one RCT.

### Safety

- SMT was found to be relatively safe.
- Of the five RCTs, which reported safety data, no serious adverse events were reported.
- Minor and temporary side effects were noted, such as temporary discomfort, stiffness, and fatigue.

## Conclusions

This NASS Contemporary Concepts in Spine Care study on SMT for acute low back pain provides the practicing DC with up-to-date information regarding the profession's main intervention for a very common disorder. DCs are urged to read this paper in detail. The best available evidence suggests that SMT is effective for the treatment of patients with acute low back pain when SMT is properly administered. Nonetheless, several factors remain unknown and require future research, such as the optimal number of SMT treatments and treatment duration, use of co-interventions along with SMT, patient preferences, and cost analyses. Considering that DCs provide the majority of SMT in the United States, it is imperative for DCs to take a lead role in clinical and research efforts related to this intervention. ◀FCA

### References

1) Dagenais S, Gay R, Tricco A, Freeman MD, Mayer J. North American Spine Society contemporary concepts in spine care: spinal manipulation therapy for acute low back pain. *The Spine Journal* 2010;10(10):918-40.

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