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# What is the Most Effective Dose of Spinal Manipulation Therapy for Patients With Chronic Low Back Pain?

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## Introduction

Spinal manipulation therapy (SMT) has been deemed effective for short-term improvements in pain and disability for patients with acute and chronic low back pain, and is recommended as an appropriate management strategy for this disorder.<sup>1,2</sup> Numerous factors must be considered when prescribing and administering SMT, such as provider type, SMT technique and dose.<sup>2</sup> Unfortunately, no consensus has been reached regarding the various options, and therefore, selecting among them is often difficult for patients, providers, and other

stakeholders. A recent federally-funded research study by Haas and colleagues<sup>3</sup> provides new information about the effective dose of SMT for chronic low back pain and is described below.

**Purpose:** The primary purpose of the study by Haas and colleagues was to assess the dose-response relationship between SMT and patient-reported outcomes in patients with chronic low back pain.<sup>3</sup>

## Methods

**Study Design:** A randomized controlled trial was conducted in nine outpatient chiropractic health care centers in the United States.

**Participants:** Patients (n = 400) with chronic low back pain were directly recruited through electronic and paper media sources, and were enrolled in

this study.

**Interventions:** The participants were randomly assigned to receive one of four doses of SMT that was delivered for six weeks as follows:

**Group 1 (n = 100):** Control - SMT delivered zero times per week, light massage delivered three times per week

**Group 2 (n = 100):** SMT delivered one time per week, light massage delivered two times per week

**Group 3 (n = 100):** SMT delivered two times per week, light massage delivered one time per week

**Group 4 (n = 100):** SMT delivered three times per week, light massage delivered zero times per week

The SMT for groups two, three and four was delivered by Doctors of Chiropractic and consisted of high-velocity,

low amplitude procedures applied to the lumbar and thoraco-lumbar regions using primarily side posture maneuvers. The control intervention of light massage was incorporated to match attention time among the groups.

**Primary Outcome Measures:** Self-reported pain and disability was recorded utilizing a standardized and validated questionnaire at baseline and at various time points up to 52 weeks following randomization.

## Results

At 12 weeks following randomization, the group receiving SMT at a dose of two times per week (12 total SMT sessions) group showed the most benefit in terms of pain and disability compared with control. At 52 weeks, the group receiving SMT at a dose of three times per week (18 total SMT sessions) group showed the most benefit in terms of pain and disability compared with control. No clinically meaningful differences were observed between the two times per week and three times per week SMT groups.

## Discussion

This study substantially adds to the best available evidence regarding the most effective dose of SMT for the management of patients with chronic low back pain. It is important to note that the study was led by a Doctor of Chiropractic (Mitchell Haas, DC), the study was federally-funded, and the study's primary findings were published in a high impact journal for spinal pain disorders (*The Spine Journal*). Efforts such as this, which demonstrate

the prominence of chiropractic research, should be applauded.

The results of this study suggest that for a six-week course of care for chronic low back pain, SMT delivered at a dose of two times per week offers the optimal results, with no further benefits achieved by increasing the dose to three times per week. While this study provides useful information for patients, providers, and other stakeholders, its direct application to clinical practice has limitations. First, only one main technique of SMT (high-velocity, low amplitude via side posture) was administered and, therefore, direct generalizability to other SMT techniques is not possible. Also, the treatment duration of six weeks assessed in this study is relatively short for the management of chronic low back pain. Since low back pain is associated with high rates of episodic recurrences over the long-term,<sup>4</sup> a six-week course of care may not be representative of the optimal treatment duration for this disorder. While the dose-response of treatment duration has not been adequately studied, a recent pilot study suggested that long-term maintenance SMT following the initial course of care was effective in improving long-term pain, disability, and quality of life in patients with chronic low back pain.<sup>5</sup>

## Conclusions

For the management of patients of chronic low back pain with a six-week course of care including SMT, a dose of two times per week of SMT was considered to be most effective in the study by Haas and colleagues.<sup>5</sup> Doctors of Chiropractic

who utilize similar SMT techniques as those tested in this study can incorporate these findings along with other findings on SMT dose to help guide clinical decision-making and informed consent processes for the management of patients with chronic low back pain. Researchers can use this information to help plan for future clinical trials on SMT for chronic low back pain. ◀FCA

### References

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Two parting thoughts:

- ▶ First, footprints were not made by sitting down.
- ▶ Secondly, be content with what you HAVE, but never with what you ARE. You have benefited from the seeds planted and the footprints made by those of our profession that came before you. You have been given a gift. Make the most of it and PAY IT FORWARD. Think of one new thing you can do this next year to pay it forward and let me know so we can feature your efforts in the next few *Journal* issues.

Finally, it has been an honor to serve this great profession through the FCA and I will continue to do so. Thank you for your confidence and help this past year. I know that you will support Dr. Jeff Bos as he assumes the FCA Presidency in November. Thank you for all you do for our profession.

Keep carrying the torch for chiropractic high and proud!!!

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we can clearly see that we are far better off now than we were 50 years ago, 25 years ago, 10 years ago, five years ago. If we just look at the recent past with an open mind, we will see that things are getting better, not worse. There are entirely too many negative mongers out there. I personally believe that our goal in life should be that our colleagues will exceed what we want for ourselves. Join me in thinking and picturing and imagining this every day.

The next issue will feature Volume III, "Desire Power."