

# Spinal Manipulative Therapy for Adolescent Idiopathic Scoliosis: A Systematic Review



Jean Th eroux, DC, PhD,<sup>a</sup> Norman Stomski, PhD,<sup>b</sup> Christine Dominique Losco, M(Chiro), PGCert(Ed),<sup>b</sup> Christelle Khadra, RN,<sup>c</sup> Hubert Labelle, MD,<sup>d</sup> and Sylvie Le May, RN, PhD<sup>c</sup>

## ABSTRACT

**Objective:** The purpose of this study was to perform a systematic review of clinical trials of spinal manipulative therapy for adolescent idiopathic scoliosis.

**Methods:** Search strategies were developed for PubMed, CINAHL, and CENTRAL databases. Studies were included through June 2016 if they were prospective trials that evaluated spinal manipulative therapy (eg, chiropractic, osteopathic, physical therapy) for adolescent idiopathic scoliosis. Data were extracted and assessed by 2 independent reviewers. Cochrane risk of bias tools were used to assess the quality of the included studies. Data were reported qualitatively because heterogeneity prevented statistical pooling.

**Results:** Four studies satisfied the inclusion criteria and were critically appraised. The findings of the included studies indicated that spinal manipulative therapy might be effective for preventing curve progression or reducing Cobb angle. However, the lack of controls and small sample sizes precluded robust estimation of the interventions' effect sizes.

**Conclusion:** There is currently insufficient evidence to establish whether spinal manipulative therapy may be beneficial for adolescent idiopathic scoliosis. The results of the included studies suggest that spinal manipulative therapy may be a promising treatment, but these studies were all at substantial risk of bias. Further high-quality studies are warranted to conclusively determine if spinal manipulative therapy may be effective in the management of adolescent idiopathic scoliosis. (*J Manipulative Physiol Ther* 2017;40:452-458)

**Key Indexing Terms:** *Spinal Manipulation; Scoliosis; Adolescent; Cobb Angle; Systematic Review*

## INTRODUCTION

Adolescent idiopathic scoliosis represents a >10° 3-dimensional spinal deviation occurring in adolescents 10 years or older.<sup>1</sup> The etiology of this condition remains unknown, and its documented prevalence ranges from 1% to 3%.<sup>2</sup> Although scoliosis can remain stable in some adolescents throughout their growth period, it can progress in others and needs to be adequately managed.

Management of adolescent idiopathic scoliosis is aimed at preventing curve progression and respiratory dysfunction, reducing spinal pain, and improving aesthetics.<sup>3</sup> Appropriate management usually comprises (1) observation for a small curve <25°, (2) bracing or special intensive inpatient rehabilitation for curves between 25° and 45°, and (3) surgical correction when the curve has progressed beyond 45°. Observation usually encompasses 6 to 12 months' in-clinic evaluation and, in some cases, radiologic assessment.<sup>5</sup>

Special inpatient rehabilitation comprises a combination of therapeutic intervention and exercises as an inpatient hospital program and is typically recommended for curvatures of 30° to 40°, with or without the addition of bracing.<sup>3</sup> This treatment approach, however, requires an extensive hospital stay, which may be unsuitable for some young people to undertake.

Bracing has been reported to significantly decrease the risk of progression in high-risk curves.<sup>6</sup> However, several issues can affect bracing compliance, including poor self-esteem and body image resulting from the brace's unpleasant cosmetic appearance, discomfort associated with pressure points or inclement weather, and impeded range of movement.<sup>7</sup> Given the reluctance of substantial numbers of adolescents to use bracing, it is warranted to

<sup>a</sup> Chiropractic Discipline, School of Health Profession, Murdoch University, Murdoch, Western Australia, Australia.

<sup>b</sup> School of Health Profession, Murdoch University, Murdoch, Western Australia, Australia.

<sup>c</sup> Faculty of Nursing, University of Montr al, Montr al, Qu bec, Canada.

<sup>d</sup> Faculty of Medicine, University of Montr al, Montr al, Qu bec, Canada.

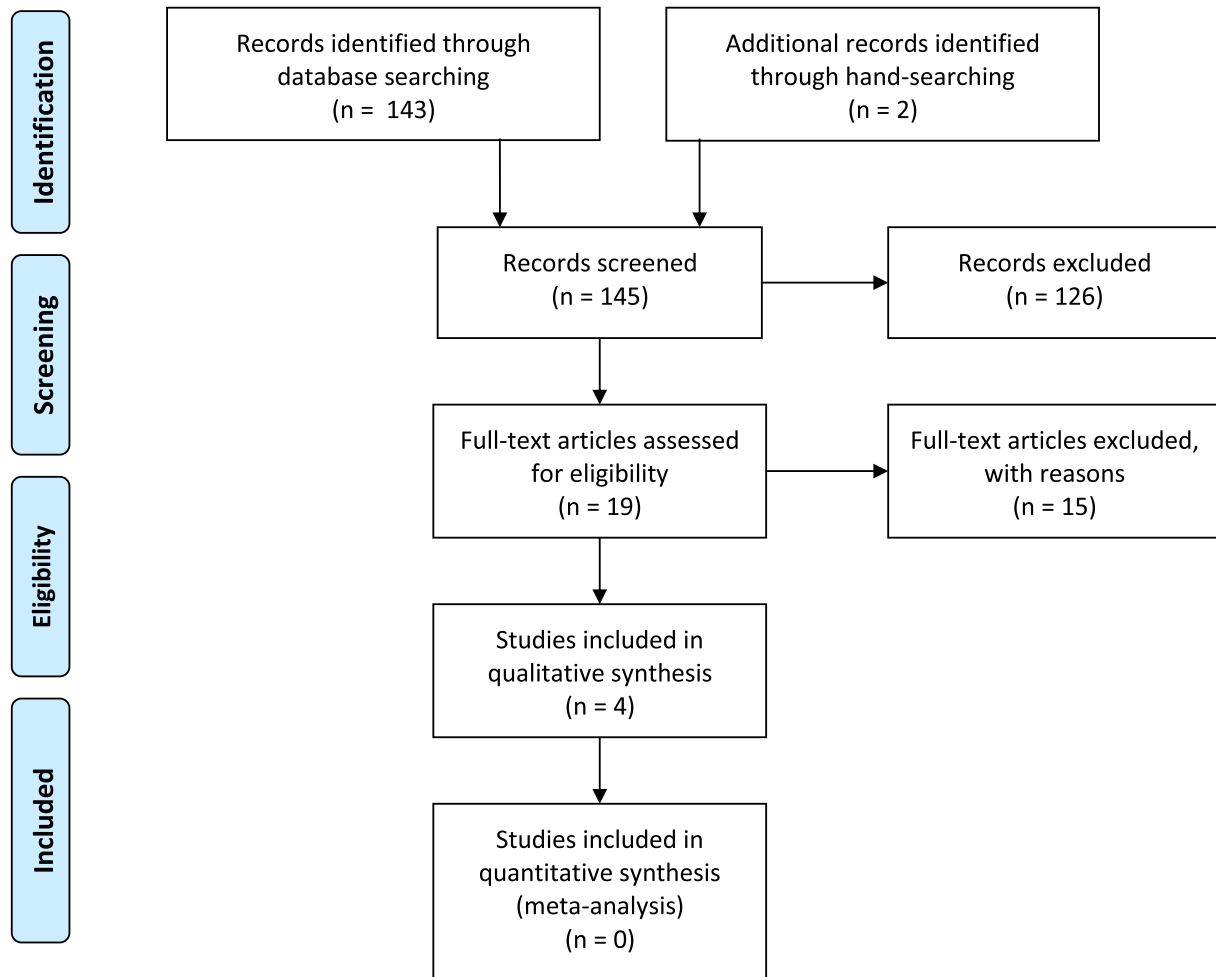
Corresponding author: Jean Th eroux, DC, PhD(c), Murdoch University, 90, South Street, Murdoch, Western Australia, Australia 6150. Tel.: +61 8 9360 7567. (e-mail: [j.theroux@murdoch.edu.au](mailto:j.theroux@murdoch.edu.au)).

Paper submitted August 19, 2016; in revised form February 9, 2017; accepted March 14, 2017.

0161-4754

Copyright   2017 by National University of Health Sciences.

<http://dx.doi.org/10.1016/j.jmpt.2017.03.009>



**Fig 1.** PRISMA diagram of the study selection process.

establish whether alternatives to bracing may be effective in the management of adolescent idiopathic scoliosis.

Guidelines developed by the Scoliosis Research Society suggest that spinal manipulative therapy may be beneficial in the management of adolescent idiopathic scoliosis.<sup>8</sup> Studies have reported that spinal manipulative therapy is commonly used by young people for the management of musculoskeletal disorders.<sup>9</sup> Whether adolescents with scoliosis use spinal manipulative therapy is unknown, but it would seem likely that it is the case. Hence, it is timely to systematically review the evidence regarding the effectiveness of spinal manipulative therapy for adolescent idiopathic scoliosis. The objective of this systematic review was to assess the effectiveness of spinal manipulative therapy for adolescent idiopathic scoliosis.

## METHODS

The reporting of this review accorded with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) recommendations.

### Search Strategy

The implementation of the search strategies and selection of studies is displayed in [Figure 1](#). Electronic search strategies were constructed to identify English or French language studies that examined spinal manipulative therapy for adolescent idiopathic scoliosis. PubMed, CINAHL, and CENTRAL databases were searched from inception to June 2016. Specific search strategies used in PubMed, CINAHL, and CENTRAL are presented in Appendix 1. Two reviewers independently screened the titles and abstracts for the studies identified through these searches to ascertain potentially relevant studies that examined spinal manipulative therapy for adolescent idiopathic scoliosis. The reference lists in these identified studies were also reviewed to identify other potentially relevant studies. Full-text copies of all potentially relevant studies were retrieved and considered for inclusion in this review.

### Selection Criteria

Studies were included if they were prospective trials that evaluated spinal manipulative therapy for adolescent

Download English Version:

<https://daneshyari.com/en/article/5564133>

Download Persian Version:

<https://daneshyari.com/article/5564133>

[Daneshyari.com](https://daneshyari.com)