**Background**

- **Low back pain (LBP)** is the most common disability among adults.
- 80 – 90% lifetime prevalence.
- Leading causes: loss of work productivity and medical care dollars spent.
- Traditional treatments: pharmaceuticals, exercises and/or spinal manipulation.

**Purpose**

- Update on **effectiveness of Spine Thrust Manipulation (STM)** for LBP treatment as a follow-up study to the systematic review authored by Kuczynski et al. (2012).

**Methods**

- **Systematic Review of 11 Randomized Control Trial (RCT)** articles compared STM to any other treatment methods.
- **PRISMA guidelines** used to report items.
- **Data pulled** on July 11, 2016 from PubMed, CINAHL, and Embase following Cochrane Collaboration guidelines.
- All of the studies published in English.
- Articles randomly assigned to two independent authors for review.
- Inter-rater reliability measured using Cohen’s Kappa coefficient.
- Risk of bias assessed using the Cochrane Risk of Bias tool.
- **Outcome measures** and comparator interventions identified in PICOS: bicycle cardiovascular exercise, low back extension, AROM, ultrasound, and non-thrust manipulation.

**Analysis**

- Most frequently reported outcome measure(s) identified and **Cohen’s d effect size** calculated [Effect d <0 adverse; 0.0-0.2 no effect; 0.2-0.5 small; 0.5-0.8 intermediate; ≥0.8 large].
- **Meta-analysis**: not conducted due to the lack of standardized timeframe in pre- and post-treatment outcome measurements.

**Results**

- **Total of 1,120 subjects** participated in the aforementioned RCTs.

**Clinical Relevance**

- **STM vs comparator interventions**: both are safe and equally effective to use for LBP treatment.
- Overall, patient preference should be highly considered when selecting an intervention for the treatment of patients with LBP.

**Conclusions**

- Overall findings: **“no” to “small” effect size** in contrast to Kuczynski et al. findings.
- No consistent conclusion on any meaningful differences between STM and the comparators in terms of efficiency in LBP patients.
- Aside from one study (Bialosky et al 2014), no true control groups were used which limits the definitive nature of their papers.
- No clear evidence in clinical practice for using STM over comparator interventions.

**Results**

<table>
<thead>
<tr>
<th>Disability (ODI)</th>
<th>STM n=</th>
<th>Comparator n=</th>
<th>Mean STM (SD)</th>
<th>Mean Comparator (SD)</th>
<th>P value</th>
<th>Effect Size (Cohen’s d)</th>
<th>Risk of Bias Total</th>
</tr>
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<tbody>
<tr>
<td>Bialosky et al (2009)</td>
<td>225</td>
<td>NR</td>
<td>12.9 (11.9)</td>
<td>8.9 (10.9)</td>
<td>0.0001</td>
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<td>8.9 (10.9)</td>
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**References**

- References are available upon request.

**Acknowledgements**

Acknowledge Leila Ledbetter, MLS in her assistance in conducting the database search.