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学位論文題名 (注: 学位論文題名が英語の場合は和訳をつけること)

Effects of thoracic spine mobilization on the lumbar spine rotation angle during trunk rotation

胸椎モビライゼーションが体幹回旋時の腰椎回旋角度に与える影響

学位の種類: 修士 (理学療法 学)

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注: 1 ページあたり 1,000 字程度 (英語の場合 300 ワード程度) で、本様式 1~2 ページ (A4 版) 程度とする。

**Abstract**

**Background:** Limitation in the movement of the thoracic spine can cause excessive lumbar rotation and back pain; however, it is unclear whether increasing thoracic rotation reduces excessive lumbar rotation.

**Objectives:** To examine the effect of thoracic spine mobilization on the rotation angle of the lumbar spine during trunk rotation.

**Design:** Cohort study.

**Methods:** Twenty healthy volunteers participated in this study. Through physical exam, we identified and then mobilized three restricted vertebrae in the thoracic spine using a facet joint traction mobilization technique. Rotational movements of both the thoracic and lumbar spine were assessed pre- and post-intervention. Measurement items included: (1) lumbar

rotational angle measured using via magnetic resonance imaging taken in the lateral position with 45° of trunk rotation; and (2) thoracolumbar rotation range of motion in the sitting position. In post-hoc analysis, paired t-tests or Wilcoxon tests were used to examine the mean differences in these measurements and statistical analysis was performed using SPSS version 26.0.

**Results:** The thoracic rotation range significantly increased after intervention (pre-intervention:  $50.0 \pm 15.7^\circ$ ; post-intervention:  $54.6 \pm 17.4^\circ$ ), and the rotational angle of the lumbar spine significantly decreased after intervention (pre-intervention:  $7.07 \pm 1.65^\circ$ ; post-intervention:  $5.90 \pm 1.87^\circ$ ).

**Conclusions:** Our study demonstrated that increasing thoracic spine rotation using joint mobilization can reduce excessive lumbar rotation.