

## Immediate Effects of Side Lying Manual Lumbar Traction in Patients with Painful Active Lumbar Motion

The purpose of this study was to determine if a gentle form of manual lumbar traction could reduce painful lumbar motions associated with lumbar disc degeneration (LDD). This clinical trial incorporated 134 participants with painful active lumbar motion. Participants were randomly assigned to an experimental treatment or sham group. 67 participants received side-lying manual lumbar traction while the other 67 participants received a sham treatment. Pre and post treatment NPRS values for the painful active lumbar motion were recorded for each group. There was a statistically significant improvement ( $P=0.00$ ) for decreased pain intensity during active lumbar motion in the experimental group as compared to the sham treatment group. The average percent decrease in numeric pain rating scale (NPRS) values was 52.1% for the experimental treatment group and 8.1% for the sham group. The results of the study suggest that side-lying manual lumbar traction can improve painful lumbar motion in patients with LDD.

**Key words:** Low back pain; Lumbar disc degeneration; Lumbar manual traction

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### INTRODUCTION

Low back pain (LBP) is the most common musculoskeletal complaint of the adult population<sup>1</sup>. The prevalence of back pain and the number of patients seeking care in the US has increased over the last two decades<sup>2</sup>. It is estimated that 60% to 80% of people will have it during their lifetime and 2-5% will have it at any given time<sup>3-5</sup>. Lumbar traction, lumbar mobilization, and lumbar manipulation are common forms of conservative care intervention for LBP<sup>6</sup>. All three of these interventions have all demonstrated positive immediate effects for lumbar pain and motion impairments<sup>7</sup>. Lumbar traction involves the application of a low-velocity passive motion to distract or separate the lumbar segments in a straight sagittal plane<sup>8</sup>. Spinal mobilization involves the use of a low-velocity passive motion applied either directly to a portion of the vertebrae or more generally the pelvis or lower extremity (LE)<sup>9</sup>. Spinal mobiliza-

tion is typically applied in a graded or oscillatory fashion<sup>10</sup>. Spinal manipulation involves the application a high-velocity (HV) passive motion<sup>11</sup>. This passive movement is typically applied to the lumbar segments in an indirect fashion using the patient's pelvis, trunk, or shoulder region as a lever to deliver what is typically a rotatory motion into the lumbar segments<sup>12</sup>. Spinal manipulation, when applied in this fashion, is controversial if not potentially dangerous if applied to patients with LDD and associated segmental instability<sup>13</sup>.

In a comprehensive review of the literature published in 1996, Stevinson identified 295 cases of complications following HV spinal manipulation. Sixty-one of these cases noted disk herniation, worsening of radicular symptoms, or development of cauda equina syndrome. Fifty-six reports of other types of complications, including dislocations and fractures that were often accompanied by spinal cord compression<sup>14</sup>. In a case study by Morandi, neurological symptoms including worsened

# Lying Manual

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## **Lying Manual:**

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Village Medical Manual: A Layman's Guide to Health Care in Developing Countries, Mary Vanderkooi, 2000

Landing-Force Manual, United States. Office of the Chief of Naval Operations, 1921

Postsurgical Rehabilitation Guidelines for the Orthopedic Clinician, Hospital for Special Surgery, JeMe Cioppa-Mosca, Janet B. Cahill, Carmen Young Tucker, 2006-06-08

Designed to help therapists provide post surgical rehabilitation based on best practices and evidence based research, this comprehensive reference presents effective guidelines for postsurgical rehabilitation interventions. Its authoritative material is drawn from the most current literature in the field, as well as contributions from expert physical therapists, occupational therapists, and athletic trainers affiliated with the Hospital for Special Surgery. HSS A DVD accompanies the book, featuring over 60 minutes of video of patients demonstrating various therapeutic exercises spanning the different phases of postsurgical rehabilitation. Examples include hand therapy procedures working with post surgical patients with cerebral palsy, sports patient injuries, and pediatric procedures for disorders such as torticollis. Material represents the best practices of experts with the Hospital of Special Surgery, one of the best known and most respected orthopedic hospitals. Phases of treatment are defined in tables to clearly show goals, precautions, treatment strategies, and criteria for surgery. Many of the treatment strategies are shown in videos on the accompanying DVD, enabling the user to watch the procedure that is discussed in the text. Information on pediatric and geriatric patients explores differing strategies for treating these populations. Treatments specific to sports injuries are presented, highlighting the different rehabilitation procedures available for athletes. An entire section on hand rehabilitation provides the latest information for hand specialists. Information on the latest treatment strategies for hip replacement presents complete information on one of the most common procedures. Easy to follow guidelines enable practitioners to look up a procedure and quickly see the recommended rehabilitation strategy. A troubleshooting section provides solutions for common problems that may occur following each phase of the rehabilitation process. Broad coverage addresses both traditional techniques as well as newer methods in a single resource. Clear photos and illustrations show how to correctly perform the techniques described in the book.

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