

## **Should Physical Therapy be Incorporated in Patient Care Post 1-2 Level Lumbar Fusions for Degenerative Lumbar Instability? -A Comparative Outcome Analysis**

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**INTRODUCTION:** Fewer studies in the literature have examined the role of post-operative physical therapy (PT) after lumbar fusion. In the post-operative setting, much of the rehabilitation literature focuses on post-discectomy patients. Evaluate and compare the changes in pain and functional scores between patients who completed physical therapy (PT) versus no-PT after their anterior or posterior 1-2 level lumbar fusions for degenerative lumbar instability. Our null hypothesis was that the PT group may experience comparatively better functional and pain outcomes than their counterparts.

**METHODS:** A database of patients undergoing 1-2 level lumbar fusion surgery for degenerative disease was assembled. Demographic and outcome scores such as Oswestry Disability Index (ODI) and Visual Analog Scale (VAS) in patients who participated in post-operative PT vs. those that did not were compared.

### **RESULTS:**

72 and 51 patients in PT and no-PT met the inclusion criteria, respectively. There were higher numbers of females (63.8%) in PT group. No-PT group had similar numbers of males and females. Mean ages for PT and no-PT groups were 61.4( $\pm$ 14.7) and 59.5( $\pm$ 14.1) years, respectively. Both groups were similar with respect to body mass index. Majority of the cases in both groups involved posterior/posterolateral approach. 55.5% of patients in PT group and 50.9% in no-PT had 1 level lumbar fusion. Mean change (pre-operative vs. 1-year post-operative) in ODI between the two groups differed significantly (PT vs. no-PT: 18.8 $\pm$ 13.9 and 9.3 $\pm$ 17.5;  $p=0.019$ ). Similarly, mean change in VAS was significantly different between the two groups (PT vs. no-PT: 3.2 $\pm$ 2.18 and 1.05 $\pm$ 2.08;  $p=0.026$ ). None of our PT patients reported any change in pre vs. 1-year post-operative follow up employment status (35% retired, 38% employed fulltime, 11% unemployed and 16% homemaker). 98% of No-PT patients reported no change in employment status during the same timeframe (46% retired, 25% employed fulltime, 13% unemployed and 15% homemaker).

**DISCUSSION AND CONCLUSION:** PT group reported significant improvements in functional and pain scores than their counterparts. Post-lumbar fusion rehabilitation may benefit the majority of adult patients undergoing lumbar fusion surgery for a degenerative indication. Prospective studies with standardized PT approach, additional patients and greater statistical power are needed to further understand the effects of physical therapy on patients undergoing lumbar fusions for degenerative lumbar instability.