

# Association of Case Duration with Late vs. Early Physical Therapy Initiation in Treatment of Work-Related Musculoskeletal Injuries: A Retrospective Analysis

Grant Sawyers<sup>1</sup>

Amelia Roebuck<sup>2</sup>, Amanda Coupe<sup>2</sup>, Michael Knipp<sup>2</sup>, Tungyun Wu<sup>2</sup>

<sup>1</sup>Indiana University School of Medicine; <sup>2</sup>Parkview Mirro Center for Research & Innovation

## Background:

Occupational medicine providers treat patients who are injured while working. Conservative management with over-the-counter anti-inflammatory medicines, physical modalities (ice/heat), and activity restrictions are first-line treatment strategies. Physical therapy (PT) is often added to assist with patients' return to baseline through symptom reduction and restoration of function. PT efficacy on outcomes and healthcare costs has been described in other patient populations but less described in injured worker populations. This study focused on associations between PT timing and case duration for treating musculoskeletal injuries in a regional injured worker population.

## Methods:

A retrospective chart review of 795 patients receiving care at Parkview Occupational Health (POH) for musculoskeletal injuries from 2017-2023 was conducted to determine if early PT was associated with case duration. Patients employed in Indiana and referred to PT within Parkview were included in the study. Age, BMI, and case duration were compared between early vs. late PT groups using two-sampled t-test. Race, sex, smoking status, and injury type were compared using chi-squared tests.

## Results:

The mean case duration (73.41 days) when PT was initiated early ( $\leq 30$  days after date of injury, DOI) was significantly shorter compared to the mean case duration (104.21 days) when PT was initiated late ( $p < 0.0001$ ). Case duration was even shorter (67.61 days) when early PT was defined as  $\leq 14$  days after injury ( $p = 0.001$ ). There was no significant difference in case duration (mean difference = 9.5 days) between patients initiating PT within 14 days and within 15-30 days ( $p = 0.15$ ). Injury type (back vs. other musculoskeletal injuries) was significantly associated with PT timing ( $p = 0.002$ ).

## Conclusion/Implications:

Future analysis should compare case duration, days of restricted work, advanced imaging utilization, and specialist referral rate between patients with early and late PT initiation. This comparison will aid in development of best practice guidance for treatment of work-related musculoskeletal injuries at POH.