**Comparing Pain-Free v. Pain-Threshold Rehabilitation for Acute Hamstring Injury and Return to Play Clearance**

Hamstring injury is among the most prevalent sport-related injuries and accounts for a long amount of time removed from participation. Physical therapy intervention is recommended to improve strength (isometric, concentric, and eccentric) in order to return-to-play (RTP) with a reduced risk of re-injury.

Hickey et al., performed a randomized control trial comparing a standard rehabilitation protocol for hamstring injury with a pain-free group and pain-threshold group. Forty-three patients were randomly assigned to the pain-free group (22) or pain-threshold group (21). The primary measure assessed was days to RTP, with secondary measures assessing isometric knee flexor strength and re-injury occurrence at 6-month follow-up.

The rehab protocol included a variation of exercises targeting the hamstring muscle groups with varying angles. A 9-stage progressing running program was also incorporated into the rehab protocol. The two groups worked at different levels of intensity solely based on pain limits, however was not specifically defined. The rehab protocol was completed when the patient met all of the RTP criteria.

Results of the study showed no statistical difference between groups in the primary outcome measure, days to RTP, as the pain-free group returned within a median time frame of 15 days and the pain-threshold group with a median time frame of 17 days. However, the pain-threshold group displayed increased isometric knee flexor strength by 15% at RTP and 2-month follow-up. Therefore, pain-threshold rehab for acute hamstring injury did not accelerate RTP clearance. There were two reinjuries in both the pain-free and pain-threshold groups when assessed at 6-month follow-up.

Based on the results of this study, clinicians should feel safe when having patients with acute hamstring injury exercise within limitations of pain during treatment sessions without the risk of further injury. However, if a patient is highly irritable and exhibits a high-level of pain it may be more beneficial to perform exercises in a pain-free range. Clinicians should educate their patients on the efficacy of physical therapy intervention in the acute phase of hamstring injury in order to return-to-play.

Hickey, J. T., Timmins, R. G., Maniar, N., Rio, E., Hickey, P. F., Pitcher, C. A., Williams, M. D., & Opar, D. A. (2019). Pain-Free Versus Pain-Threshold Rehabilitation Following Acute Hamstring Strain Injury: A Randomized Controlled Trial. *Journal of Orthopaedic & Sports Physical Therapy*, (0), 1-35.