



Mid Atlantic Regional Chapter of the American College of Sports Medicine

Annual Scientific Meeting, November 4th- 5th, 2017
Conference Proceedings

International Journal of Exercise Science, Issue 9, Volume 6



The Human Piriformis Muscle: Sensory, Postural, or Just a Pain

Timothy Dusch, Rachel Sweetnich, Matthew Kostek. Duquesne University, Pittsburgh, PA

Piriformis syndrome is a form of low back pain that is debilitating and difficult to treat. Physical therapy is often effective but in some cases the Piriformis muscle is disconnected or removed entirely through surgery. The short term consequences of this procedure are negligible but the long term consequences have not been studied. Furthermore, because of its size and anatomical location, it is not thought to be a primary mover of the body. The purpose and necessity of the muscle is an area of speculation. We hypothesized that it is a sensory and postural muscle, which could explain why short term consequences of its removal are minimal. **PURPOSE:** To determine the density of muscle spindles and fiber type composition of the human Piriformis muscle. **METHODS:** Six human cadavers (male = 3, female = 3) had their right and left Piriformis muscles removed for histological analysis. Whole muscles were paraffin embedded, sectioned, H&E stained or stained with myosin heavy chain antibodies. Microscopy analysis examined spindle density and fiber type composition. **RESULTS:** The average spindle density per muscle was 3.4+1 and was not significantly different between male and female ($p=0.46$). Fiber type composition was 84+8% slow twitch and was not different between men and women ($p=0.23$). **CONCLUSION:** The human Piriformis muscle does not appear to be a sensory muscle due to the low concentration of muscle spindles but is very likely a postural muscle. The results of this characterization may better inform treatments including the surgical removal and long term rehabilitation.