

# Effect of Posterior Pelvic Tilt Exercise on Strength and Endurance of the Core Musculature

Brittany Gapter, Jane Pendry, Abby Regier, Ethan Winter

Faculty: Dr. Barbara Smith

*Department of Physical Therapy, College of Health Professions*

**INTRODUCTION:** A posterior pelvic tilt is typically discouraged in terms of posture. However, due to the muscles of the core that are firing both concentrically and eccentrically while completing a posterior pelvic tilt, further studies are needed to determine its efficacy as an exercise. This study aimed to see what its effects as an intervention would be over an 8-week period.

**PURPOSE:** The purpose of this pilot study was to use posterior pelvic tilting as a simple exercise to facilitate an overall increase in core strength and endurance over an 8-week period.

**METHODS:** Our cohort consisted of 25 healthy males and females whose ages ranged from 19-54. Participants had no history of back pain or surgery involving the anatomical structures of the core, not currently pregnant or planning to become pregnant, and willing to make no change in their current exercise program. The participants were blindly randomized into 2 intervention groups and a control group. All participants were brought in for a pre-test consisting of the Biering- Sorenson and a timed sit-up test with a metronome. Participants began the 8-week study and came back at the end of the 8 weeks for post-testing. All participants in the intervention groups started with completing 25 reps per day 5 days a week and increased the number of posterior pelvic tilts by 25 reps every two weeks in sitting or standing until they were doing 100 per day at weeks 7-8.

**RESULTS:** Improvements in both number of sit ups performed and length of time in maintaining a stable back extension posture were found in both intervention groups. However, these were not statistically significant. Results were examined by intervention group and significant improvement occurred in number of sit ups in those doing the pelvic tilt in sitting.

**CONCLUSION:** Changes were shown in the intervention groups regarding the variables tested. While statistically significant, the clinical significance of these changes is in doubt. Normal healthy individuals may need a larger challenge to show clinical improvement in core strength measures. Future studies should consider a larger number of participants. It is also recommended to modify testing equipment and/or methods due to reports of participants stopping testing early because of unrelated anatomical discomforts. Our final recommendation is to come up with a cohort in which participants have no current exercise protocol.