A Comparison of Static and Dynamic Stretching on Functional Performance
Scifers JR, Plourde, JM: Western Carolina University, Cullowhee, NC

Context: Static and dynamic stretching techniques are commonly employed prior to activity in order to improve functional performance in athletes. Although research exists examining the effect of stretching on injury prevention and muscle strength, little research is available comparing various stretching interventions on functional performance using agility tests. **Objective:** The objective of this study was to compare the effects of no stretching (NS), static stretching (SS) and dynamic stretching (DS) on functional performance, as measured using the T-Drill Agility Test, in healthy subjects. **Design:** The study was a randomized controlled trial with subjects acting as their own control. **Setting:** The study was conducted in a University research laboratory. **Patients or Other Participants:** Subjects consisted of 27 healthy, college-aged, student volunteers (21 female, age=19.67 +/- 1.07 years). Subjects were required to be free of lower extremity pathology at the time of participation. **Interventions:** Each subject attended three data collection sessions involving warm-up on a stationary cycle, a pre-test stretching intervention and a timed agility test. Subjects underwent three different, randomly assigned stretching interventions (NS, SS or DS) prior to completion of two T-Drill Agility Tests, with the best time of the two trials being recorded. The T-Drill Agility Test requires subjects to sprint forward ten meters, laterally shuffle 5 meters to the left, laterally shuffle ten meters to the right, laterally shuffle five meters to the left and back-pedal ten meters to the start/finish line. This agility test simulates the functional requirements of many sports. **Main Outcome Measures:** The main outcome measure of this study was time to complete the T-Drill Agility Test following each of the three treatment interventions. Data was analyzed using T-Tests and ANOVA testing to examine differences between groups. **Results:** The average time to complete the T-Test Agility Drill following static stretching was 13.92 seconds, following dynamic stretching was 14.38 seconds and in the absence of stretching was 14.07. Comparison of the groups found a statistically significant difference between the performance of the static stretching and dynamic stretching groups (p<0.05). No other statistical differences were found between the groups. **Conclusions:** The findings of this study demonstrate the value of pre-activity static stretching in order to improve performance. These results do not support the use of dynamic stretching prior to physical activity in order to improve athlete performance. The findings of this study suggest that static stretching is superior to dynamic stretching as a warm-up to agility activity. Furthermore, the findings indicate that dynamic stretching is no better than no stretching prior to agility activity. The findings of this study conflict those of previous research investigating the effect of various stretching protocols on athletic performance. Due to numerous limitations associated with this study, additional research is needed. **Word Count:** 450