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# To Stretch Or Not To Stretch: Comparison of Static and Dynamic Stretches.

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## Abstract

Static stretching is a primary component in the warm up routine of athletes (Beckett et al. 2009). It consists of stretching the muscles while at rest for about 30 seconds. This type of stretching is believed to aid in athletic performance and decrease the risk of injury and muscle soreness (Beckett et al. 2009). Athletes warm-up with stretching to prepare them in their training or competition, believing that these routines will help them in their performance (Fletcher et al. 2007). Research has shown a decrease in muscular performance with static stretching being a part of the warm-up routine (Fletcher et al. 2007). Six women (W; age  $23.3 \pm 1.21$  yrs) and nine men (M; age  $24.4 \pm 2.74$  yrs), participating in this study. Subjects were divided into three groups of five labeled group A, B, and C. The test was completed indoors on a basketball court. Each subject had their scores compared to their own sprint times in three different situations, which included them doing a set of dynamic and static stretches and then a control series. Across conditions, the Static, Dynamic, and Control stretching had no significant difference. (Static: mean=3.07; Dynamic: mean=3.09; Control: mean=3.1) Repeated Measures results indicated no effect for Run Time, Static:  $F=.381, p > .05, SD=.442, df = 2$ ; Dynamic:  $F=.246, p > .05, SD= .384, df =2$ ; Control:  $F=.599, p>.05, SD=.585, df=2$ . Even if order was considered (1: static, dynamic, control; 2: dynamic, static, control; 3: control, dynamic static), the data showed no significant difference. The study found that when compared to their own sprinting times after a completion of static, dynamic or no prior stretches, there were no significant differences in the final times.

## BACKGROUND & PURPOSE

- The purpose of this experiment is to examine the effects that static stretching has on sprint time in athletes.
- Based on previous research, static stretching has been thought to show improvements for athletic performance, however more recent studies have shown this to not be true.
- With the rise of new evidence supporting the negative role that static stretching plays for athletic adults, the study hoped to determine if this account was true or if it was in fact not.

## METHODS

### Participants:

15 subjects (6 healthy females and 9 athletic males)  
Age range: (19-25 years)

### Criteria for experiment:

Subjects had to have a background in exercise, athletics, be currently physically active

### Measures:

Experiment took place at the gymnasium in the P.E. building here at UTA

Each group consisted of both male and female

Subjects were instructed to wear athletic wear and running shoes

### Protocol:

The experiment consisted of 3 groups (Group A, Group B, and Group C)

Group A: Static stretching, Dynamic stretching, and control

Group B: Dynamic stretching, Static stretching, and control

Group C: Control, Dynamic stretching, and Static stretching

All three groups consisted of the same stretches, they were used to give a counter balance effect.

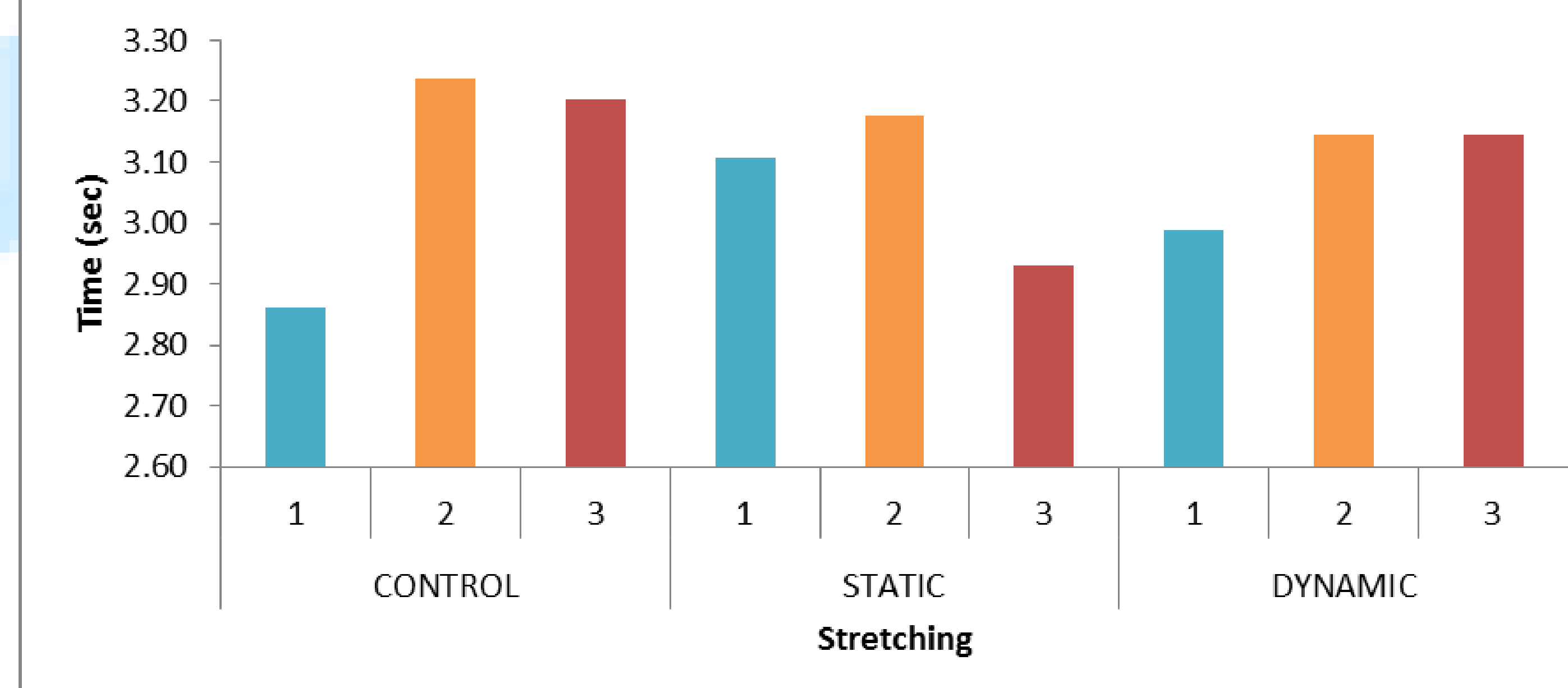
### Data Analysis:

Repeated Measure Design was used

Design consisted of 3 conditions: Static, Dynamic, and Control (no stretching)

## RESULTS

**Fig. 1 Relationship between Static, Dynamic, No Stretching vs. Sprint Time**



(Static: mean=3.07±.442; Dynamic: mean=3.09±.384; Control: mean=3.1±.585)  
Repeated Measures results indicated no effect for Run Time. Values for condition:  
Static:  $F=.381, p > .05$ ; Dynamic:  $F=.246, p > .05$ ; Control:  $F=.599, p > .05$ .

## DISCUSSION & CONCLUSION

- The study compared three different sprinting times of each individual that participated in a series of stretches in order to analyze which stretches would increase the sprinting time of each individual.
- The estimations and data were collected by examining the three ending sprinting times after a fifty feet completion for each set and then used to discover the actual results.
- In summation, the experimental study conducted found that when individuals were compared to their own sprinting times after a completion of static, dynamic or no prior stretches, there were not any real significant changes displayed in each individual's final sprinting times.
- The order to which the subjects were placed in to sprint did not affect the sprinting times in this case, but there were other possible limitations and implications that led to the final outcome.
- In conclusion, the expectations that the static stretches implemented before a fifty feet sprint would impede the sprinters time were not proven to be true after the study was completed.

## REFERENCES

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