



ISB 2013
BRAZIL

XXIV CONGRESS OF THE INTERNATIONAL
SOCIETY OF BIOMECHANICS

XV BRAZILIAN CONGRESS
OF BIOMECHANICS

STATIC VERSUS DYNAMIC STRETCHING IN RELATION TO IMPROVING GOLF DRIVING PERFORMANCE

¹ Graeme Sorbie, and ^{1,2} Ukadike C. Ugbolue

¹ School of Science, Institute for Clinical Exercise & Health Science, University of the West of Scotland, UK

² Department of Biomedical Engineering, University of Strathclyde, Glasgow, UK

email: Graeme Sorbie [B00223141@studentmail.uws.ac.uk]; u.ugbolue@uws.ac.uk

SUMMARY

This study compares a dynamic and static stretching warm-up routine and the effects these stretching routines have when performing the driving of a golf ball. Three different components were tested; these were distance, accuracy and contact.

INTRODUCTION

The popularity of golf around the world has generated widespread research with biomechanical movements, strength and flexibility training being high on the agenda [1]. Wirhed (2006) suggests many athletes look to improve performance with strength training [2] but do not incorporate flexibility training within their schedule meaning this could have a negative effect on performance. Muscles only trained for strength training become shorter, restricting the range of motion (ROM) and this in turn decreases the ability to utilize the muscles increased force resources correctly. Many athletes often ignore stretching within their routine or sometimes have a “quick stretch” before practice as they are not widely knowledgeable on the advantages it can bring.

Dynamic and static stretching is most commonly used in the game of golf. During the full swing an adequate range of motion (ROM) is required to have a fluent and consistent golf swing. This theory is well documented and Gergley (2010) states that because of this knowledge many competitive golfers are integrating stretching into their normal practice and warm-up routines [3]. Lephart et al (2007) also coincides with this theory by suggesting many individuals who play and teach golf are beginning to realize the need to incorporate flexibility and balance training into the daily routine [4]. Having this adequate range of motion can have many positives on the performance of the golfer. One of the main beneficial factors is said to be Increasing swing speed on the down swing which in turn can create a greater carry distance [5].

The purpose of this study was to investigate what effect dynamic and static stretching warm-up routines have on golf driving performance.

METHODS

Prior to commencing tests, approval for the study was obtained from the School of Science, Institute for Clinical Exercise & Health Science, University of the West of Scotland, UK, Ethics Committee. A total of 3 male participants took part in the experimental study, aged between 24-28 years. Their handicaps ranged from -1 to 4. The study was conducted in the practice area at Hamilton Golf Club, Hamilton, Scotland, UK. The subjects were required to attend two separate testing days, the testing lasted an average of two hours over a three day period. Each subject was randomized to either a dynamic or static stretching routine on their first day of testing. The opposite routine was then performed on the final testing session. This approach rules out any doubt of the testing protocol being systematic. Before the testing began the driving range was set up appropriately to enable accurate and effective testing to take place. A line was painted from the midline of the driving range with four flags situated on this line. The flags were placed at 200, 250, 300 and 350 yards (Figure 1). The distance was calculated from the flag positions. Accuracy was measured by the absolute distance each shot deviated, left or right, from the midline target. Clubface contact with the ball was calculated based on the verbal response from the participant. The verbal response was either a ‘yes’ or ‘no’ answer. This was an appropriate method due to the high skill level of each golfer.

Both the dynamic and static stretching routines had nine different stretches targeting the entire body and golf specific musculature. Each static stretch lasted for 30 seconds and was repeated twice and each dynamic stretch lasted 1 minute. After the stretching exercises were completed each subject hit ten drives and the distance, accuracy and contact was recorded from each shot. Subjects were encouraged to perform their pre-shot routine before every ball was hit. This enabled the participants to mimic their tournament pre shot routine and should have enabled them to be more consistent. The ten drives were hit with a 1 minute rest between each shot; this was specified so that the subject could regenerate the metabolic energy lost in the previous shot. After the testing was completed the subject returned two days later to perform the opposite stretching technique that was used on

day one and the same procedure was carried out. Descriptive statistics and ANOVA were performed to establish if there were differences between the two stretching techniques. The angle of deviation from the midline was determined and the percentage clubface contact with the ball was reported for both stretching scenarios. P value was set to 0.05.

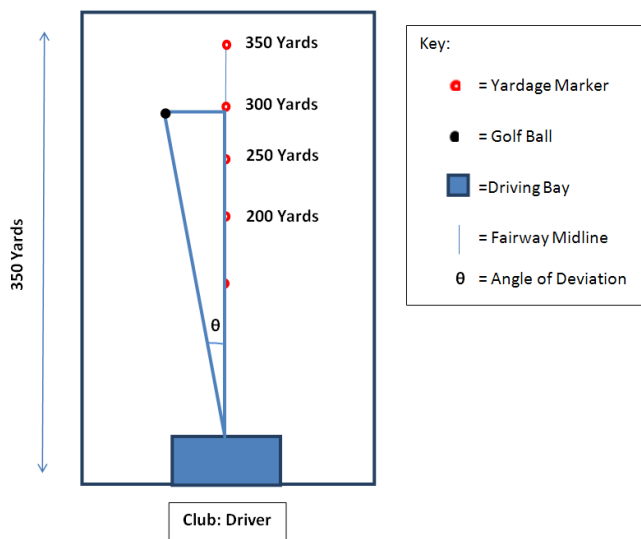


Figure 1: Illustration of the experimental setup at the golf driving range.

RESULTS AND DISCUSSION

Within participants there were no significant differences between driving distance after performing the dynamic stretch and static stretch ($P > 0.248$). Within participants there were no significant differences between shot accuracy after dynamic stretching and static stretching ($P > 0.065$). There were no significant differences between participants for the driving distance after the dynamic ($P = 0.764$) and static ($P = 0.522$) stretches were performed. In terms of shot accuracy, there were no significant differences between participants after performing the dynamic ($P = 0.350$) and static ($P = 0.223$) stretches.

On average all participants hit the ball further after performing the dynamic stretch. However, the participants appeared to show a higher level of shot accuracy after the static stretch. In general, all the participants showed a high level of good clubface contact with the golf ball after stretching. The preliminary data indicate that the participants have a 90% chance of generating solid contact with the clubface and ball after performing the dynamic stretch. The data also suggests that the same group of participants have a 67% chance of generating solid contact with the clubface and ball after performing the static stretch.

An appropriate comparison to previous research studies will be carried out once all the twelve participants have been recruited and tested.

CONCLUSIONS

This preliminary data is useful and provides an insight into the effects of both stretching techniques. Although, this preliminary study is limited to only three participants, more participants are currently being recruited. We anticipate that the outcome of this research study will provide useful data to amateur and professional golfers which could help improve their performance during training.

REFERENCES

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Table 1: Summary of Preliminary Results

Participants	Handicap	Distance after Dynamic Stretch (Yards) Mean (SD)	Distance after Static Stretch (Yards) Mean (SD)	Shot Accuracy after Dynamic Stretch (Yards) Mean (SD)	Shot Accuracy after Static Stretch (Yards) Mean (SD)	Angle of Deviation after Dynamic Stretch (°) Mean (SD)	Angle of Deviation after Static Stretch (°) Mean (SD)	Percentage Clubface Contact after Dynamic Stretch (%)	Percentage Clubface Contact after Static Stretch (%)
A	-1	255.30 (16.08)	250.00 (17.62)	7.30 (2.83)	6.30 (3.47)	0.029 (0.011)	0.025 (0.014)	80	70
B	2	250.50 (16.47)	242.30 (17.18)	8.40 (2.67)	8.20 (5.05)	0.033 (0.010)	0.034 (0.022)	70	70
C	4	220.50 (13.02)	220.40 (11.35)	9.50 (4.25)	9.50 (3.37)	0.044 (0.022)	0.043 (0.015)	60	60