



# Academic Sports Scholars

## ANALYSIS OF STATIC VERSUS DYNAMIC STRETHING EXERSICE ON MOTOR ABILITIES OF FOOTBALL PLAYERS



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### ABSTRACT

The purpose of this study was to analyze the static versus dynamic stretching exercise on motor abilities of football players. Twenty junior state level football players [aged between 15-17 years] were selected as subject from Malappuram district in Kerala. Data was collected on the selected variable, namely body mass index, speed, agility, strength, endurance and flexibility. 't' test was used for statistical analysis. The result of the study showed that there was significance difference among football players in speed, agility, strength, endurance and flexibility. There is no significant difference in Body mass index.

**KEYWORDS** :aerobic exercise, stretching ,football players , statistical analysis.

### INTRODUCTION

A regular warm-up usually consists of three components: aerobic exercise, stretching, and a rehearsal of the movements that will be used in the subsequent training exercise or sports competition. Stretching is often utilized for a wide variety of populations to be an essential part of a warm-up. Increasing flexibility through stretching is one of the basic tenets of physical fitness. It is common for athletes to stretch before and after exercise in order to reduce risk of injury and increase performance. Increasing flexibility through stretching is one of the basic tenets of physical fitness. It is

common for athletes to stretch before and after exercise in order to reduce risk of injury and increase performance. Three muscle stretching techniques are frequently described in the literature: Static, Dynamic, and Pre-Contraction stretches. Static stretching is the traditional and most common type, where a specific position is held with the muscle on tension to a point of a stretching sensation and repeated. This can be performed passively by a partner, or actively by the subject.

There are two basic ways static stretching can be performed: active and passive. Active stretching occurs when the individual uses his/her own muscles to hold the stretching position. Active stretching is more beneficial in the development of active flexibility. In passive stretching, an external force holds the static stretching position of the individual. This external force can be an object or a person. Dynamic stretching refers to the movement of limbs in an “organized pattern to increase range of motion.” Unlike static stretching movements do not exceed the individual’s limits of range of motion within the joints being warmed up.

In football the player’s motor abilities have a great role. The motor abilities are key factors for the development of their performance. The motor abilities such as speed, strength, flexibility, agility and endurance are very important factors for the improvement of football players. So it is very essential to develop these qualities in football players. Speed is very important for dribbling the ball and agility also required and if a player has less endurance he can’t perform well throughout the game. For kicking ball the players need good strength and also it is one of the main factors for developing speed and agility.

### **PURPOSE OF THE STUDY**

The purpose of this study was to analysis the Dynamic Stretching versus Static Stretching exercise on motor abilities of football players.

### **HYPOTHESIS**

It was hypothesized that there will be difference in performance of motor abilities of subjects undergoing dynamic and static stretching exercises.

### **METHODS**

20 junior state level football players from in Malappuram district in Kerala were selected as subjects for this study. For body mass index, weight and height, for speed 20 meter dash and agility assessment Arrowhead agility, for strength standing vertical jump, endurance Yo-Yo intermittent level-2 endurance test and for flexibility sit and reach test were as the variable of the study.

Weight was measured to kilogram, height was measured to centimeter and speed and agility measured in seconds, standing vertical jump measured in centimeters and endurance measured by distance recorded in meters. For analysis of dynamic stretching and static stretching among football players, data of body mass index, 20 meter dash, agility test, vertical jump, endurance test were analyzed by ‘t’ test. Each selected six variable of the football players were compared separately.

### **RESULT AND DISCUSSION**

The gathered data were analyzed through statistical procedure ‘t’ test was applied to find out significant differences of static versus dynamic stretching exercise on motor abilities of football players. The level of significant was set at 0.05 level of confidence.

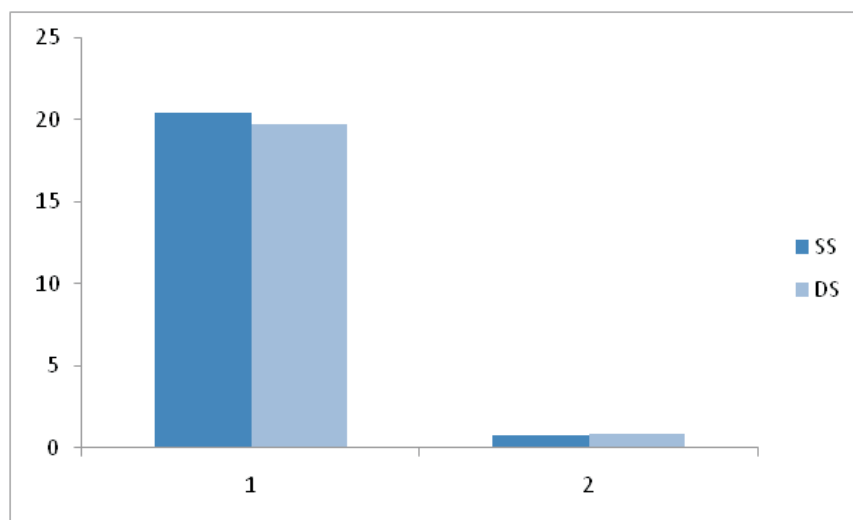
Effectiveness of static and dynamic stretching exercise on body mass index

**Table 1: Data and test of significance (paired t test) for the effectiveness of Static stretching exercises and Dynamic stretching exercises on BMI**

Statistics	SS	DS
Mean	1.75	1.75
SD	2.50	2.50
DF	19	
t	1.371	
P	0.186ns	

Source: Primary data, \*\*: Significant at 5% level ( $P < 0.01$ ), ns: not significant ( $P > 0.05$ )

From Table 1, paired t test showed that the mean BMI level do not significantly differ ( $t = 1.371$ ,  $P > 0.05$ ) due to Static stretching exercises (mean=18.0550, SD=2.93911) and Dynamic stretching exercises (mean=18.0565, SD=2.93827).



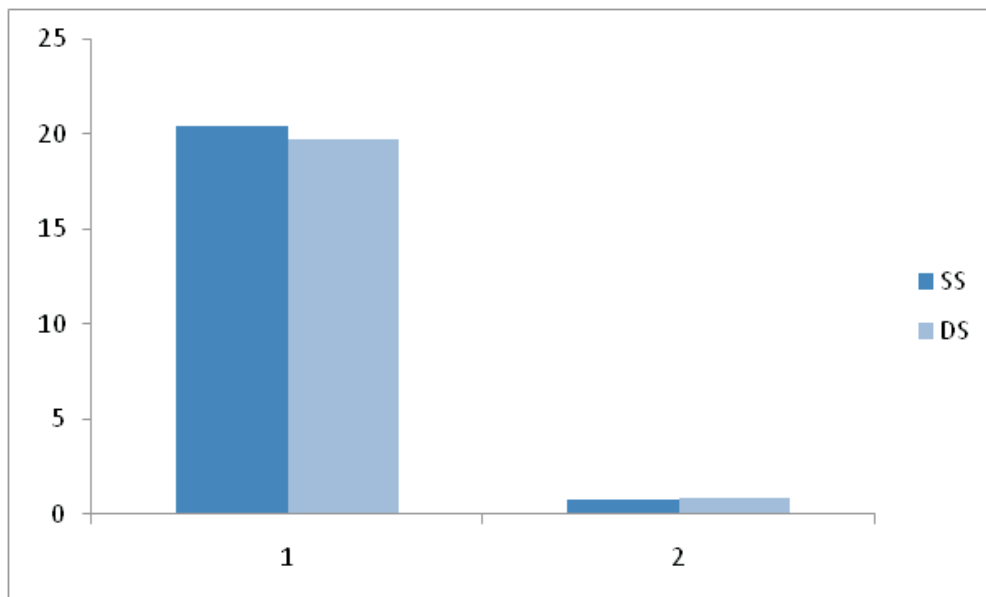
Effectiveness of static and dynamic stretching exercise on 20 meter dash

**Table 2: Data and test of significance (paired t test) for the effectiveness of Static Stretching Exercises and Dynamic stretching Exercises on 20 meters Dash**

Statistics	SS	DS
Mean	1.75	1.75
SD	2.50	2.50
DF	19	
t	4.449	
P	0.000**	

Source: Primary data, \*\*: Significant at 5% level ( $P < 0.01$ ), ns: not significant ( $P > 0.05$ )

From Table 2, paired t test showed that the mean 20 meters DASH level differ significantly ( $t=4.449$ ,  $P<0.01$ ) due to SS (mean=3.6740,  $SD=.22244$ ) and DS (mean=3.4650,  $SD=.25969$ ). Hence the TMD significantly improved due to DS.



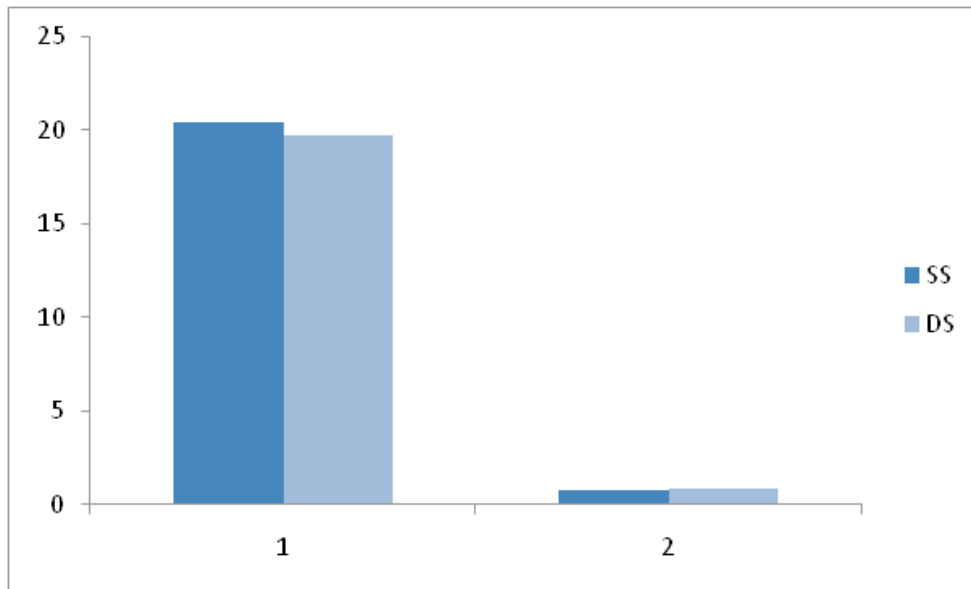
**Effectiveness of static and dynamic stretching exercise on arrow head agility test**

**Table 3: Data and test of significance (paired t test) for the effectiveness of Static Stretching exercises and Dynamic Stretching exercises on agility**

Statistics	SS	DS
Mean	1.75	1.75
SD	2.50	2.50
DF	19	
t	4.652	
P	0.000**	

Source: Primary data, \*\*: Significant at 5% level ( $P<0.01$ ), ns: not significant ( $P>0.05$ )

From Table 3, paired t test showed that the mean Arrow Head Agility Test level differ significantly ( $t=4.652$ ,  $P<0.01$ ) due to SS (mean=20.4340,  $SD=.79451$ ) and DS (mean=19.8040,  $SD=.84079$ ). Hence the TMD significantly improved due to Dynamic Stretching.



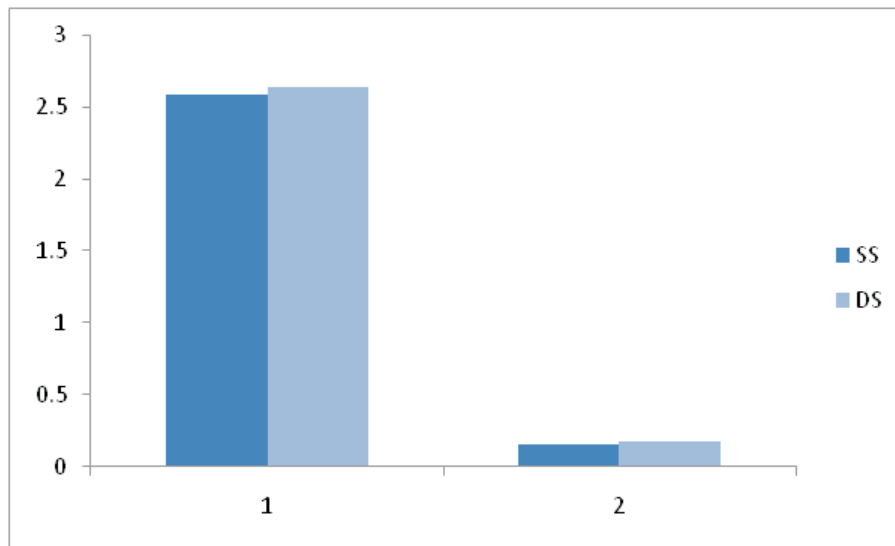
**Effectiveness of static and dynamic stretching exercise on strength**

**Table 4: Data and test of significance (paired t test) for the effectiveness of Static Stretching exercises and Dynamic Stretching exercises on strength**

Statistics	SS	DS
Mean	1.75	1.75
SD	2.50	2.50
DF	19	
t	-3.777	
P	.001**	

Source: Primary data, \*\*: Significant at 5% level ( $P < 0.01$ ), ns: not significant ( $P > 0.05$ )

From Table 4, paired t test showed that the mean Standing vertical Jump level differ significantly ( $t = -3.777$ ,  $P < 0.01$ ) due to Static Stretching Exercises (mean=2.5875, SD=.16049.) and Dynamic Stretching Exercises (mean=2.6470, SD=.17330). Hence the TMD significantly improved due to Dynamic Stretching



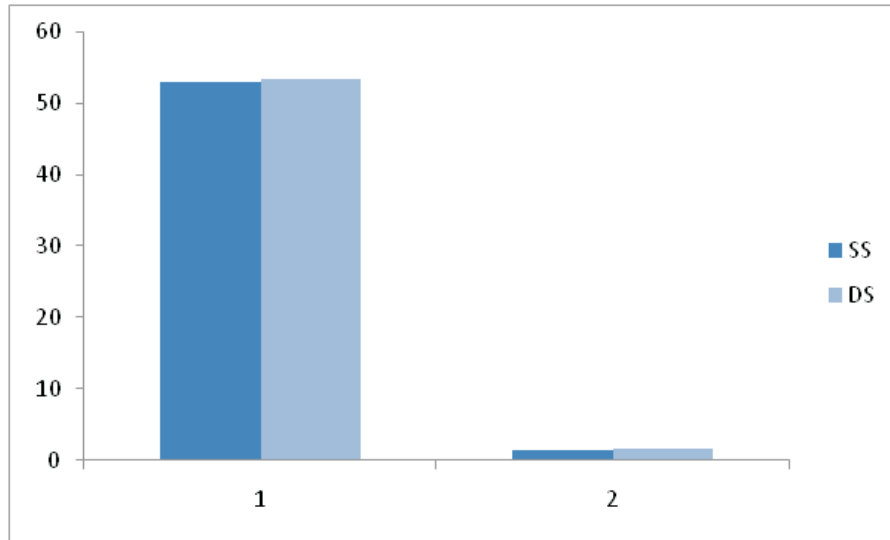
Effectiveness of static and dynamic stretching exercise on yo-yo intermittent endurance test

Table 5: Data and test of significance (paired t test) for the effectiveness of Static Stretching exercises and Dynamic Stretching exercises on endurance

Statistics	SS	DS
Mean	1.75	1.75
SD	2.50	2.50
DF	19	
t	-3.567	
P	.002**	

Source: Primary data, \*\*: Significant at 5% level (P<0.01), ns: not significant (P>0.05)

From Table 5, paired t test showed that the mean Yo-Yo Intermittent Test level differ significantly ( $t=-3.567$ ,  $P<0.01$ ) due to Static Stretching Exercises (mean=53.1608, SD=1.51289) and Dynamic Stretching Exercises (mean=53.4192, SD=1.57438). Hence the TMD significantly improved due to Dynamic Stretching.



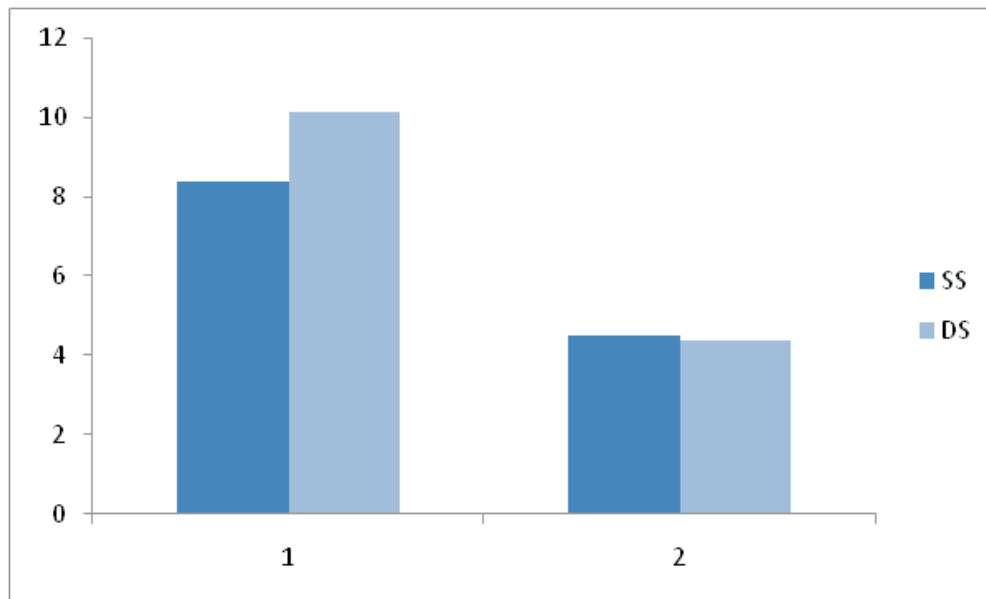
**Effectiveness of static and dynamic stretching exercise on sit and reach test**

**Table 6: Data and test of significance (paired t test) for the effectiveness of Static Stretching exercises and Dynamic Stretching exercises on flexibility**

Statistics	SS	DS
Mean	1.75	1.75
SD	2.50	2.50
DF	19	
t	-9.200	
P	.000**.	

Source: Primary data, \*\*: Significant at 5% level (P<0.01), ns: not significant (P>0.05)

From Table 6, paired t test showed that the mean Sit and Reach Test level differ significantly (t=-9.200, P<0.01) due to Static Stretching Exercises (mean=8.4000, SD=4.52362) and Dynamic Stretching Exercises (mean=10.1500, SD=4.39228). Hence the TMD significantly improved due to Dynamic Stretching.



### CONCLUSIONS

- It was concluded that there is no significant difference in Body mass index of static stretching exercises and dynamic stretching exercises.
- It was concluded that there is a significant difference in Speed of players undergoing static stretching exercises and dynamic stretching exercises.
- It was concluded that there is a significant difference in Agility of players undergoing static stretching exercises and dynamic stretching exercises.
- It was concluded that there is a significant difference in Strength of players undergoing static stretching exercises and dynamic stretching exercises.
- It was concluded that there is a significant difference in Endurance of players undergoing static stretching exercises and dynamic stretching exercises.
- It was concluded that there is a significant difference in Flexibility of players undergoing static stretching exercises and dynamic stretching exercises.

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