37 - STRETCHING THE INFLUENCE OF PERFORMANCE ATHLETES OF FOOTBALL

CAMILO ZUMBI RAFAGNIN
CRISTINA FERREIRA DA SILVA
PABLO DANIEL SANTOS QUADROS
DANIELLY FERNANDES FERREIRA
CARLOS EDUARDO DE ALBUQUERQUE
UNIVERSIDADE ESTADUAL DO OESTE DO PARANÁ
CASCAVEL - PARANÁ - BRASIL
ceafit@yahoo.com

INTRODUCTION

Interest in sport and performance grows every year. Since the high performance athlete to the professional athlete aims not reach their full potential. Several studies have been done in order to increase performance from athletes, as well as serve as a parameter for physiotherapy treatments applied in training and rehabilitation.

Among the ways to achieve greater efficiency, heating is one of the tools used by having the ability to improve exercise due to the ease of adaptation of the individual to exercise stress, in order to prepare the athlete physiologically and mentally. The heating raises the temperature and muscular energy metabolism, providing the fabric greater elasticity, increased cardiac output and improves blood flow and functions of the central nervous system, enabling a greater number of motor units neuromuscular. Furthermore, decreases blood lactate and increases oxygen consumption in the first minute of exercise, compared to unheated condition (OLIVEIRA, 2011; MCANRDLE, Katch And Katch, 2008; ROBERGS E ROBERTS, 2002).

Similarly, the elongation is used with the purpose to increase muscle response. Stretching can be defined as a method to achieve greater mobility of soft tissue with a consequent increase in range of motion (FABRICIO et al, 2012). There are several ways of stretching between the main are: active stretching - stretching muscles, tendons and ligaments produced by the development of active tension in antagonistic muscles; passive stretching - stretching muscles, tendons and ligaments produced by a stretching force another than the tension in the muscles antagonists; dynamic or ballistic stretching - the individual who aims to make sudden movements to increase the limit of elongation (Hall, 1993).

But one question is becoming increasingly intense: what performance interference in the athlete has the pre-exercise stretching? We need to understand if interference occurs in speed and strength, therefore the union of the two generates power (MACHADO et al, 2007). To potencializarmos an exercise in high yield, weekend or clinicians, we need to be able to use the individual muscle groups at its maximum power. (FABRICIO et al, 2012).

Static stretching can temporarily impair muscle function to generate strength and power. This can be explained by neural and mechanical factors involving the elongation resulting in temporary reduction of muscle activity. There is equal idea about the impact of stretching on performance, there is no agreement whether stretching benefits or diminish the ability of the individual (FABRÍCIO et al, 2012; RAMOS, SANTOS and Goncalves, 2007).

Thus, this study aims to investigate the correlation between static stretching and athletic performance in sports.

METHODOLOGY

This is an observational cross. We evaluated 17 male athletes, aged between 15 and 18 years the junior category of Francisco Beltran Football Club.

We excluded athletes who had some type of injury pretest. Tests were separated on two different days. The first day was held screening of athletes with anthropometric measures of weight, height and BMI tests and only with specific pre-warming exercises, lasting 10 minutes, aided by the coach of the club.

On the second day the test was conducted with athletes after heating associated with static stretching of the upper and lower retaining 30 seconds in each position. The tests consisted in assessing the strength of the lower limb, agility and speed of athletes.

The leap frog test was used to evaluate the strength of the legs. For this test it was necessary to fix a tape and a ground line, being as zero point. The athlete is placed immediately behind the line, with your feet parallel, slightly apart, knees semi-flexed, torso slightly projected forward. At the signal the athlete jumps as far as possible, repeating the test twice and considering the best brand.

To test speed used a timer and a track of 22 meters marked with three lines parallel to the ground as follows: the starting (0); timing line (20m) and the finish line or reference line (22m). When's command, the athlete moved as quickly as possible toward the finish line. The marker is set at the time the student took the first step to playing the first leg after the starting line. When the student crossed the line timing (20m), broke off the timer.

To test the agility used a timer, a square drawn in with soil slip 4m hand, four cones 50 cm mark the corners. At the sign of the evaluator, the student walked in the shortest time possible route demarcated playing with his hand the four cones. The timer was triggered by the assessor at the time the individual performed the first step with the foot touching the inside of the square. The shorter two attempts was recorded.

The analysis of the results was performed using the paired t test using SPSS software. The accepted level of significance was 5%.

RESULTS

The study included 17 athletes from the under-18 category of Francisco Beltran Football Club, aged between 15 and 18 years. Based on the analysis anthropometric observed average BMI of 22, 63 kg / m², maximum height of 180 cm and minimum of 168cm, weighing between 83kg and 60kg. All athletes to participate in the test that was performed on all samples available on the day, and none of the athletes had some type of injury, and no injury reported during the test.

On the first day the tests were conducted only with muscle heating through a run of ten minutes with the intensity increasing every two minutes. The tests aimed to assess muscle strength measured by the test of leap frog in centimeters, speed through the shot 20 feet in seconds and agility testing at the four cones in seconds.

The tests started by the strength test, a greatest observed reached a jump distance of 249 centimeters and 180 centimeters less, and the total average between samples was 221.17 cm. In testing acceleration of 20 meters, the best result

observed Testing in 2.78 seconds and the fastest time was 3.56 seconds, with an average of 3.18 seconds. In the agility test between the cones, the most agile Testing in 4.91 seconds, the slowest in 5.84 seconds, making an average of 5.31 seconds (Table 01).

On the second day of testing was held the same heating and then static stretching active, prioritizing the muscle groups of the lower limbs. Then there were the tests of strength, agility and speed.

Again the tests initiated by the strength test, where the biggest jump observed reached a mark of 254 centimeters, 180 centimeters lower, averaging between samples of 223.82 cm. In testing acceleration of 20 meters were observed times of 2.75 seconds for the fastest and 3.47 seconds for the slower, with average of 3.08 seconds. In agility with cones were observed results of 4.69 seconds for more agile, 5.56 seconds for the slowest and average of 5.04 seconds (Table 01).

Analyzing data from the strength test can check slight increase in the distance of the jump on the second day, ie, static stretching after the test. The mean of the first day was 221.17 cm and the average days of 223.82 seconds in the second test so on average the athletes were obtained 2.65 cm longer than the first, as observed (Table 01).

In Figure 01 presents the results of the tests. The reaction of the athletes was different in relation to stretching. In the post stretching can be seen that there was a positive variation of up to 17 inches and 12 inches negative. Eleven athletes improved their marks, five worsened the brand and equaled the mark in two days.

	Agility (s)	Speed (s)	Leap Frog (cm)
Pre-Test	**5,31 ±0,27**	**3,18 ±0,25**	**220,41 ±22,21**
Post-Test	**5,05 ±0,24**	**3,08 ±0,20**	**223,82 ±22,96**
T- Test	**0,0044**	**0,0668**	**0,1002**

Table 01 - Comparison of the results of the test of strength of the lower limb before and after stretching.

To test the speed of 20 meters the variation observed between pre and post stretching appeared small, being only 0.10 seconds. The average speed of the first and second days of testing was 3.08 and 3.18 seconds respectively, as shown in the figure below.

Through the figure 01 it can be seen that there was little variation in the time of pre-to post elongation. On the second day of testing 13 athletes showed improvement in its brands, the largest of which was presented variation of 0.53 seconds and four had worsening of brands, with a negative change of 0.25 seconds.

Figure 01 sh ds on average before and after stretchi

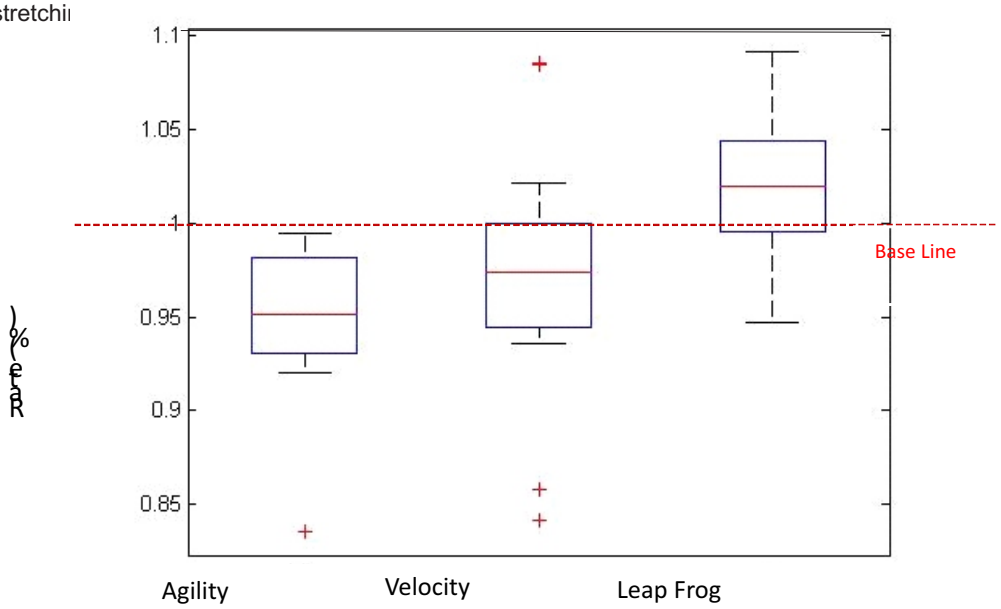

Figure 01 - Box plot of test results agildade, speed and leap frog groups before and after stretching.

DISCUSSION

The study by Fabricio et al (2011) showed similar results. The authors investigated the influence of acute static stretching on strength in young soccer players and found that the acute effect of passive static stretching did not cause statistically significant changes in muscle strength athletes.

Ramos, Santos and Gonçalves (2007) conducted a scientific literature on stretching and muscle strength and concluded that the majority of studies showed that stretching causes decreased muscle strength. No plausible explanation nor agreement among the authors on the effects of stretching on muscle strength.

Different results were found by Gomes (2008) to evaluate the effect of stretching on the speed in athletes 14 to 17 years. After performing pre-and post-race stretching 400 meters, the author noted a drop in income of athletes and suggests that

further tests are performed to prove that the real effect of static stretching in different motor acts.

In relation to the test speed between the cones it was possible to observe more interference between the stretching all tests. All athletes showed improvement, though still insignificant for most. The results can be compared by looking at the picture below.

The increase in speed can be explained, according to Gomes apud Dantas (2008) in that stretch being a "form of labor, sub-maximal, which aims at maintaining levels of flexibility and performance of movements obtained in the normal range minimum possible physical restriction. These results are obtained by deformation observed in acute plastic components. "

Divergence occurs in the literature of ideas regarding the use of stretching before sports activities. There is no consensus on the time required for stretching viscoelastic changes occur in the muscle groups. Note a difference between the movements that an athlete performs during sport activity. Specific studies are needed to determine the best type of stretching fits in the activity which is needed to improve performance.

CONCLUSION

With this study, we observed that static stretching had active influence on the performance of the athlete. The main interference of elongation was observed in the agility test between the cones, where all athletes showed improved performance with a significant difference.

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ABSTRACT

The search for extracting the maximum capacity of the athlete has piqued the interest of various professionals, including the physiotherapist. Among the resources used to strengthen the muscular action, warming has already proven. Stretching, however, has generated discussion about its role in athletic performance. The present study aims to relate static stretching and athletic performance in sports. For this, we selected soccer players who work in under-18 category, ages 15 and 18. The study participants underwent tests of agility, strength and speed in two days, and only on the first and second heating with heating associated with stretching. The results obtained in the tests showed that the active static stretching has little or no influence on the performance of the athlete. Specific studies are needed to determine the type of elongation best fits the activity of which is required to improve performance

KEYWORDS: Stretching, performance, strength, agility, speed.

RÉSUMÈ

La recherche de l'extraction de la capacité maximale de l'athlète a suscité l'intérêt de divers professionnels, y compris le physiothérapeute. Parmi les moyens mis en œuvre pour renforcer l'action musculaire, le réchauffement a déjà fait ses preuves. Stretching, cependant, a suscité une discussion à propos de son rôle dans la performance athlétique. La présente étude a pour but de rapporter les performances statiques étirement et sportive dans les sports. Pour cela, nous avons sélectionné les joueurs de soccer qui travaillent dans moins de 18 catégories, âgés de 15 et 18 ans. Les participants à l'étude ont subi des tests d'agilité, de force et de vitesse dans deux jours, et seulement sur la première et la deuxième chauffage avec chauffage associé à l'étirement. Les résultats obtenus dans les tests ont montré que l'étirement actif statique a peu ou aucune influence sur la performance de l'athlète. Des études spécifiques sont nécessaires pour déterminer le meilleur type d'étirement unique dans l'activité qui est nécessaire pour améliorer les performances.

MOTS-CLÉS: étirement, la performance, la force, l'agilité, la vitesse.

RESUMEN

La búsqueda de la extracción de la capacidad máxima del atleta ha despertado el interés de diversos profesionales, entre ellos el fisioterapeuta. Entre los recursos utilizados para fortalecer la acción muscular, el calentamiento ya ha demostrado. El estiramiento, sin embargo, ha generado un debate sobre su papel en el rendimiento deportivo. El presente estudio tiene como objetivo relacionar el rendimiento atlético y estiramientos estáticos en los deportes. Para ello, hemos seleccionado los jugadores de fútbol que trabajan en sub-18 categoría, de entre 15 y 18 años. Los participantes del estudio se sometieron a pruebas de agilidad, fuerza y velocidad en dos días, y sólo en el primer calentamiento y la segunda con calentamiento asociado con el estiramiento. Los resultados obtenidos en las pruebas mostraron que la estática de estiramiento activo tiene poca o ninguna influencia en el rendimiento del atleta. Estudios específicos son necesarios para determinar el mejor tipo de estiramiento encaja en la actividad que es necesaria para mejorar el rendimiento.

PALABRAS CLAVE: Estirar, rendimiento, fuerza, agilidad, velocidad.

INFLUÊNCIA DO ALONGAMENTO MUSCULAR NA PERFORMANCE DE ATLETAS DE FUTEBOL

RESUMO

A busca por extrair a capacidade máxima do atleta tem despertado o interesse dos mais variados profissionais, entre eles, o fisioterapeuta. Entre os recursos utilizados para potencializar a ação muscular, o aquecimento já possui eficácia comprovada. O alongamento, entretanto, tem gerado discussões sobre sua atuação na performance do atleta. O presente estudo tem por objetivo relacionar o alongamento estático e o desempenho do atleta na prática desportiva. Para isso, foram selecionados atletas de futebol que atuam na categoria sub-18, com idades entre 15 e 18 anos. Os participantes da pesquisa realizaram teste de agilidade, força e velocidade em dois dias, sendo que no primeiro somente com aquecimento e no segundo com aquecimento associado ao alongamento. Os resultados obtidos nos testes evidenciaram que o alongamento estático ativo tem pouca ou nenhuma influência na performance do atleta. São necessários estudos específicos para determinar o tipo de alongamento melhor se encaixa na atividade da qual se necessita melhorar o desempenho.

PALAVRAS-CHAVE: Alongamento, desempenho, força, agilidade, velocidade.