

LETTER TO THE EDITOR

The effect of static stretching exercise on flexibility and speed ability in young football players

Sami Sermahaj¹

¹Department of Physical Culture, Sport and Recreation, University College, Pristina, Kosovo

Abstract

Training programmes for young football players are designed to stimulate an optimal development of physical performances relevant to football game. The primary aim of this research is to establish the effect of the static stretching exercise on the motor abilities (flexibility and speed) of young football players. A total of 24 young football players (U17 category) from Football Club "Ramiz Sadiku" were included in this pilot study. Participants were divided into control and experimental group. The research implemented 6 variables: 1) 2 variables for estimation of morphological characteristics (body height, body mass) and 2) 4 variables for estimation of motor abilities such as flexibility (Sit-and-Reach test), and speed (sprint 5m, sprint 10m and sprint 30m). Data processing was conducted with the software package SPSS, 23.0 version and uni-variant analysis was performed. Acquired results show that conducted experimental program for development of flexibility have statistically significant effect only on flexibility variable "sit and reach test" with the experimental group, and no significant effect on speed 5m, 10m and 30m. Based on the data obtained in this research, it is recommended to use static stretching exercises after training (in the recovery phase), 2-3 times a week for the optimal development of the flexibility of the players at the U17 category.

Keywords: *young footballers, static stretching, flexibility, speed*

Introduction

Football is a sport characterized by numerous and various complex dynamic kinesiology activities with a large number of cyclic and acyclic movements (Bjelica et al. 2013). Performing a large number of movements in soccer (such as sprinting, changing the direction of movement, performing technical elements), depends, among other things, on the flexibility of the player's locomotor system.

There are different opinions about the role and influence of flexibility exercise on motor skills. It usually depend on the methods of application more precisely on when, and to what extent certain forms of stretching exercises (dynamic and static) are used for flexibility development (Brandey et al., 2012).

Static stretching exercises as a recovery strategy in football have been widely discussed, but currently there is not enough strong scientific evidence that static stretching exercises contribute to players regeneration (Sands et al., 2013; Nedelec et al., 2013). Furthermore only 50% of professional clubs in France use stretching exercises at

the end of the training as a recovery strategy (Nedelec et al., 2013).

It is well know that coaches of younger categories of football players do not pay attention to adequate forms of flexibility exercise (static and dynamic) in the phases of warming up and calming down the body, even though they are necessary for the development of flexibility in the young players.

However, it is not yet sufficiently known to what extent static stretching exercises applied after training in the active recovery phase affect the motor skills of soccer players.

Therefore, we designed a study to investigate the impact of static stretching exercises on the motor skills of young football players, with the hope that it will provide an original contribution both to theory and practice.

Material & Methods

A total of 24 young soccer players (U17 category) from Football Club Ramiz Sadiku from Prishtina werw included in this pilot

Correspondence:

**Montenegro
Sport**

Sami Sermahaj
E-mail: sami.sermahaj@kolegjiuniversi-edu.net

study. The participants were divided into control (n=12) and experimental group (n=12).

The medical checkup was realized in the medical sport Centre in Prishtina and it was confirmed that all the football players are healthy to participate. In accordance with the Helsinki declaration, all the participants have been informed with the aim of the testing procedures and the regular and experimental training program.

Players were involved in the regular and experimental training sessions while competing in the Kosovo elite soccer league over the season's first macrocycle (preparation and competition) from 1st of August until 1st of December.

During the preparatory and competition period, the training program was conducted in a time span of four months, four times per week, for both of the groups. The content of the regular training program is based on four components: conditioning (KO), technical (TE), tactical (TA) and mental (ME) preparation. The work plan and program was prepared from Sami Sermaxhaj the author of this study - based on the recommendations of the German and Swiss football federations and several authors who represent eminent experts in this field (Bisanz and Gerisch 2008; Bjelica and Popović 2012; Jankovski 2015, Sermaxhaj 2021).

Only the execution manner of the experimental program was different (17 exercises of static stretching) for development of flexibility), which was conducted three times per week only with the

experimental group, and with an increased duration at the end of the training session.

The content of the experimental part of the training was: 1) Neck stretch; forward, upwards, right-left, 2) Trunk Stretch; Upper Back, 3) Trunk Stretch; Chest & Back, 4) Trunk Stretch; Shoulder & mid – upper Back, 5) Trunk Stretch; Shoulder & triceps, 6) Trunk Stretch; Lateral flexion right-left, 7) Two Leg Hamstring Stretch, 8) Achilles & Back Stretch, 9) Quadriceps Stretch, 10) Hamstring Groin Stretch, 11) Standing Groin Stretch, 12) Groin Stretch, 13) Chest Stretch, 14) Sitting Hamstring Stretch, 15) Lower Back Stretch, 16) Two Leg Seated Hamstring Stretch, 17) Achilles Tendon Stretch) (Walker, 2006; Sermaxhaj et al 2018).

Statistical analysis

Statistical analysis was performed with SPSS 23.0 (IBM, Armonk, USA). Uni-variant analysis was performed to calculate the differences between control and experimental group in initial and final measurements. The level of significance was set to $p < 0.05$.

Results and discussion

There are no significant differences between the control and experimental groups.

Results of the final measurement for both groups are presented in Table 1.

Table 1. Differences between the young football players (U17 category) from the control and the experimental group at the final measurement

	Variable	CK Mean±SD	EG Mean±SD	Anova P- level
Cadets	Age (years)	15,9±0,4	16,2±0,6	-
	Body mass (Kg)	62,20±8,84	64,05±8,04	0,597
	Height (cm)	177,12±6,5	177,68±6,75	0,838
	Sit and Reach Test	-0,41±3,55	6,25±7,65	0,012
	Sprint 5m	1,18±,10	1,14±,09	0,704
	Sprint 10m	1,92±,08	1,88±,07	0,616
	Sprint 30m	4,66±,21	4,55±,16	0,201

Note: CG= control group, EG=experimental group, Mean=arithmetic mean, SD=Standard Deviation, P=p-value

Based on the results for the Sit and Reach Test, the value of the difference of 6.66 cm is in favor of the experimental group. It was observed that the distance was minimally greater at the final measurement, compared to the initial measurement. Since the experimental group performed the static stretching exercises three times a week during the preparatory and competitive period, -obtained results were expected.

The impact of long-term static stretching exercises on the flexibility of cadet players has been investigated by other authors too (Fernandez et al., 2016; Akbulut and Agopyan 2015, Sermaxhaj et al 2017). Obtained results in this study indicate that in the category of cadet players, long-term static stretching exercise had no significant effect on the 30m. However, Fernandez et al. (2016) found statistically significant effect of the static stretching exercise on the speed in football players.

Acquired results show that conducted program for development of flexibility (static stretching exercises) have statistically important effect only on flexibility (sit and reach test) and no effect on speed (sprint 5m, 10m, 30m), and morphological characteristics (body mass and height) in young football players (U17 category).

Conclusions

Static exercises have essential effect on improvement of flexibility, but without positive or negative effect on speed and morphological characteristics in young football players (U17 category).

We suggest that the positive change in flexibility in the experimental group in the cadet category was due to the influence of the experimental program (static stretching exercises). It is also recommended to apply combined stretching exercises (dynamic and static) at the beginning of training and special supplementary sessions 2-3 times a week (before or after regular training) according to individual needs with the aim of developing optimal flexibility for young football players.

Obtained results present further step in recognizing when and in which players the static stretching exercises should be implemented.

Furthermore, the present study clearly explains if flexibility exercise has positive or negative impact on speed abilities of young football players, and precisely recommends when to be employed.

Acknowledgments

There are no acknowledgments.

Conflict of Interest

The authors declare that there is no conflict of interest.

Received: 27 June 2022 | Accepted: 05 July 2022 | Published: 15 July 2022

References

Akbulut, T. & Agopyan, A. (2015). Effects of an eight-week proprioceptive neuromuscular facilitation stretching program on kicking speed and range of motion in young male soccer players. *Journal of Strength and*

- Conditioning Research*, 29(12), 3412–23.
- Bisanz, G. & Gerisch, G. (2008). *Fussball, Kondition Technik Taktik und Coachin*. Aachen: Meyer & Meyer Verlag.
- Bjelica, D. i Popovic, S. (2012). *Fudbal, teorija-tehnika-taktika*. Podgorica: Fakultet za sport i fizičko vaspitanje iz Nikšića.
- Bjelica, D., Popovic, S. & Petkovic, J. (2013). Comparison of Instep Kicking Between Preferred and Non-Preferred Leg in Young Football Players. *Montenegrin Journal of Sports Science and Medicine*, 2(1), 5-10.
- Brandey, J., Ajit, D.K., Richard, S.F. & Jennifer, L.C. (2012). Acute effects of static and proprioceptive neuromuscular Facilitation Stretching on Agility performance in Elite Youth Soccer Players. *International Journal Exercises Sciences*, 5(2), 97-105.
- Fernandez, R.A., Sanchez, J., Rodriguez Marroyo, J.A. & Villa, J.G. (2016). Effects of seven weeks of static hamstring stretching on flexibility and sprint performance in young soccer players according to their playing position. *Journal of Sport Medicine and Physical Fitness*, 56(4), 345-51.
- Jankovski, T. (2015). *Taktische Periodisierung im Fußball*. Aachen: Meyer & Meyer Verlag.
- Nedelec, M., McCall, A., Carling, C., Legall, F., Berthoin, S. & Dupont, G. (2013). Recovery in soccer. *Sports Medicine*, 43(1), 9-22.
- Sands, W.A., McNeal, J.R., Murray, S.R., Ramsey, M.W., Sato, K., Mizuguchi, S. & Stone, M.H. (2013). Stretching and its effects on recovery. *Strength and Conditioning Journal*, 35(5), 30-36.
- Sermaxhaj, S. (2021). *Futbolli, Përgatitja fizike, tekniko-taktike dhe udhëheqja e ekipit*. Prishtinë: Federata e Futbollit e Kosovës, ISBN 978-9951-9039-0-5
- Sermaxhaj, S. (2017) The impact of regular training programme on the speed and agility performance of the young football players. *Sport Science*, 10(1), 117-121.
- Sermaxhaj, S., Popovic, S., Bjelica, D., Gardasevic, J. & Arifi, F. (2017). Effect of recuperation with static stretching in isokinetic force of young football players. *Journal of Physical Education and Sport*, 17(3), 1948-53.
- Sermaxhaj, S., Arifi, F., Alaj, I., Bahtiri, A., Havolli, J. & Sermaxhaj, S.S. (2018) The Effect of Static Stretching in Agility and Isokinetic Force at Football Players. *Sport Mont*, 16(2), 45-49.
- Walker, B. (2006). *The anatomy of stretching*. Chichester: Lotus.