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## ELEMENTS OF THE SPECIFIC CONDITIONING IN FOOTBALL AT UNIVERSITARY LEVEL

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### Abstract

*Football is the most popular sport in the world with millions of practitioners and enthusiasts spreaded everywhere, including universities. It is played by 250 million players in over 200 countries. Along its popularity the rivalry among competitors increased, so in our days the training program became more intense and divers. In addition to their regular technical training on the field, the elite players also follow a fitness and conditioning routine which are including different components of fitness involved in this sport such as: endurance, strength, speed, power, agility, flexibility and nutrition. Technical and athletic training are both integral parts of a complete football development program. With the way the game has evolved today the players cannot stay competitive without taking the physical conditioning seriously. Once it's introduced this complete training program to the players, the feedback is an immediate improvement in their game.*

**Keywords:** *football, specific conditioning, university.*

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### Introduction

Football is the most popular sport in the world with millions of practitioners and enthusiasts spreaded everywhere, including universities. It is played by 250 million players in over 200 countries.

The regular football is played between two teams of eleven players but some variants which are very popular to universities have been codified for reduced-sized teams. Usually five, six or seven a side football, played in non-field environments as artificial pitch or indoor with different names as minifootball (or arena football) and futsal (or indoor football).

Minifootball (or arena football) is a type of game adapted for play on an artificial pitch in an indoor environment such as a baloon covered arena. Despite the term "arena football", it is also used to describe the game played on such fields which are built outdoors.

Futsal is a variant of football that is played on a smaller field and mainly played indoors. It can be considered a version of five a side football. Its name comes from the portuguese *Futebol de salão*, which can be translated as "room football". It was

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developed in Brazil where is played by more people than football but does not attract as many spectators as the outdoor version. Several futsal players have moved on to careers as successful professional football players (Manescu, C.O., 2013)

Indoor football is one of several distinct variants of the game of football designed for play in indoor arenas. Indoor soccer is the most popular in Europe, United States, Canada and Mexico, with several amateur, collegiate and professional leagues functioning. It is also played in Brazil, where it is called showbol. The other variants of indoor football, such as futsal and five a side football, are more popular in Europe and Brazil. These variants have different rules and governing bodies from those of indoor football.

## **Content**

Nevermind which version of football we are talking about we must understand the importance of a good physical condition and what this means. Football today is a way by which nations assert their biological and psychological potential. (Dulceata, V., 2014)

Despite the popularity among students, strength and conditioning programs for football are often neglected or outdated. Except the professional level, many coaches at university level still focus only on skills and endurance training (running), ignoring some other very important elements of fitness.

Looking to other popular sports we must understand the importance of a complementary strength and conditioning program in order to improve the performance in football. That's why I consider important to take a closer look at the different components of fitness involved in this sport such as: strength and strength endurance, speed, power, agility, flexibility (warm up and cool down) and nutrition.

**Endurance** – obviously a football fitness program must be built around a good aerobic base. Several studies into the physiological demands of football have shown that players can run between 8 and 13 kilometers during a 90 minute game. This means a significant demand on the player's cardiovascular system and their muscular endurance, so it's something normal to hear that players use to run for at least an hour several days per week in order to improve their performance on the field (Manescu, C.O., 2010). Analyzing the sport-specific requirements of the football players we can see that they are actually engaging in varying intensities of activity for different durations while playing, including walking, running and sprinting in different directions.

*Walking* routine must be based around every person's individual needs, because a very active athlete can not benefit too much from walking because of all the running and training they would be doing already in their sport. However, walking



could definitely be used as active recovery, especially after an intense training session. The players could work to increase aerobic endurance and elevate their lactate threshold so they would be able to perform better, as opposed to someone who would use walking just to improve overall fitness.

*Running* routine is bringing some important benefits to football players like increasing the lung capacity, strengthening of the heart and increasing the muscular strength which in turn decreases the chances of injury, and it increases connective tissues which allow the body to become a more durable support system (Manescu, C.O., 2008). Running involves multiple joint actions and requires a number of muscle groups to work synergistically in maintaining control and balance. The use of resistance training as a means to improve this control is an effective method for improving running quality. Examples of this are: a stronger push off, an increased ability to resist the eccentric forces that occur when the foot comes into contact with the ground each time a stride is taken, and a stronger torso which promotes a more efficient running posture.

*Sprinting* (short interval sessions) is also becoming a very important form of cardio because there are many adaptations, more physiological ones, that go along with sprint training. Numerous studies have been done regarding sprint training that lasts from 10 to 60 seconds, but for football we should focus on what happens when we train under 10 seconds range. Sprint training is bringing two types of adaptation, metabolic and morphological. The first adaptations to consider are metabolic adaptations. These are basically the muscle increasing its capacity to produce more energy. The muscle tissue does this by increasing the rate at which enzymes are working to produce energy by increasing the storage capacity of the muscle tissue for energy substrates and by increasing the muscle tissues' capability to resist fatigue. The morphological adaptations are mainly about muscle fibers (slow and fast types) and how the body switch over to favor the fast ones, and muscles increasing size.

**Strength** – it's an important component of fitness that can benefit the athletes from any sport, although it is often viewed as of little importance in football. High level football players don't need to have the same absolute strength as rugby players, but a properly designed 'off-field' strength training program will definitely elicit improvements in performance. Relative strength is more important in football than absolute strength. Relative strength simply means the capacity of a player to workout with weights related to his body weight. The strength training program of a football player should focus on compound, functional exercises (such as own body weight resistance exercises), and take into account balancing the strength of opposing muscle groups, without wasting the time training solely on machines. The majority of the exercises should be ground-based, using bodyweight or free weights as resistance, and should involve movement of the full body.

**Speed, power and agility** - other significant component of a football fitness



program is *speed* training, and developing of this attribute can make a massive difference to the performance. The speed of play in today's game is quicker than ever. While endurance and strength are very important to improve the performance, faster players have a definite competitive edge. Nevermind if a player may have better endurance than the next guy, but if he makes it to the ball first it won't matter that he can run marathons. There are many ways to increase the speed depending on many attributes such as the level of fitness, training experience, body composition etc. For the average trained players the quickest way to increase linear speed is through short sprints with full recovery (5-50m for football) and improving technique. Weight training (via improving relative body strength) also help to improve speed. Without sprinting it will not have much of an impact on increasing speed. The same goes for leaping and bounding plyometric drills and improving flexibility and mobility.

*Power* is the combination of strength and speed. A more powerful player is a much better player. To improve the speed and explosiveness the training must include power movements in the program, such as jump squats, high pulls, power cleans, and push presses. as well as plyometric drills. Because it is important to have speed endurance, is recommended to incorporate these exercises into a circuit training program with high intensity intervals. A typical workout would alternate between power movements for lower body and upper body, with plyometric exercises as intervals.

*Agility* refers to the ability to start, stop and change direction. Most training drills that develop agility can be very stressful on the joints or on soft tissue and hence must be done with low volume (Burns, T., 2004). Examples of these higher impact drills are plyometric drills (leaping and bounding) and cone drills. Medicine ball drills fall under the low impact category.

***Flexibility*** - another important aspect of fitness to discuss is flexibility. It is generally well accepted that stretching is an important part of a regular training program. Stretching is helping to prevent injury, is improving the performance, is reducing DOMS (Delayed Onset Muscle Soreness - is a major problem for hard-training athletes of all ages), and should be part of a warm-up and cool-down. According to the theory, flexibility is the measure of the range of motion at a joint or group of joints and the ability to move a joint through its complete range of motion. There are 2 main categories of stretching: passive and active.

*Passive stretching* is when an outside force other than own muscle is used to move a joint or limb beyond its active range of motion, to put the body into a position that couldn't be done by itself (such as lean into a wall, or have a partner that push the subject into a deeper stretch). Unfortunately, this is the most common form of stretching used.



*Active stretching* eliminates outside force and its adverse effects from stretching procedures. It involves actively using the own muscles to achieve range of motion; as the antagonist (opposite) muscle contracts, the agonist (target) muscle groups lengthen and relax. This is a safe, effective, and recommended method of stretching. It is recommended to perform active range of motion (AROM) exercises following a workout, game, or practice session. The "stretch" positions can be very similar to passive stretches, but they are being held using muscular effort, not outside force. Actively each position must be hold for 10 to 15 seconds.

*Dynamic stretching* is another form of active range of motion that is recommended before training, practice or competition, and has been shown to reduce muscle tightness while increasing nervous system activation. Dynamic warm-up exercises involve moving parts of the body and gradually increasing reach, speed of movement, or both.

### **Recomandations**

The off-competition weekly program should include two strength training days (opposed muscle groups using functional exercises) and a speed/power day (explosive movements in a circuit, with plyometrics and intervals), in addition to the athletic skill practices on the field. There is recommended some agility work and sprint starts at the end of the speed/power circuit, also to be included 2-to-3 endurance/cardiovascular training sessions each week as well.

For the period before competition must be reduced the training volume and cut back to only one strength workout and one speed/power workout per week. Can be adjusted the number of endurance training sessions as well, depending on the number of practices or games done each week.

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