

# Research on Special Physical Training of Football

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**ABSTRACT.** *As a typical competitive sport, football not only has high requirements on the technical ability of players, but also requires them to have a good physical foundation. Physical ability is to play the execution of the tactical layout in football, to maintain the stability and good psychological state of the players, and to play the players' personal skills. This paper first expounds the importance of special physical training to football, and then analyzes the content and methods of special physical training in football from four aspects: body shape, body function, sports quality and mental ability training, so as to provide some references for special physical training in football.*

**KEYWORDS:** *Football; Special physical ability; Sports quality; Training*

## 1. Introduction

Football is the most representative sports which integrates professionalism, commercialization and popularization together in the world. Special physical training integrates the latest achievements in sports training, sports physiology, life science, biomechanics, biochemistry and computer, and has become an important way for modern football to improve the level of sports [1].

## 2. The Importance of Special Physical Training in Football

Physical ability is a complex system, it includes the body form, physical function, sports quality and mental ability from the structural analysis, each element contains a large number of specific indicators, which reflect the state level of a certain aspect of players' physical ability, and the whole organic combination constitutes a complete physical structure system of players[2].The physical structure of players reflects the internal relationship of the physical system of football players, the morphological structure of organs, tissues and cells of human body is the material basis of its function. Sports quality refers to the ability of a soccer player to perform in competition and training, it usually includes strength, speed, endurance, flexibility, flexibility and coordination, they are actually the comprehensive performance of football players' morphological structure, function and metabolic status, which

reflects their overall sports function. At the same time, the development of sports quality in turn has a certain impact on the players' form structure and function. Among the four components of physical ability, physical quality and body shape are the external performance of physical ability, physiological function is the internal basis of physical ability, and mental ability is the derivative of the above three indicators.

Statistics show that professional football players in the world run around 9000-14000m each game, especially the establishment of modern total defense football, it makes the pace of total defense be accelerated increasingly and the degree of confrontation is more intense, players in the game complete a variety of tactics and technical cooperation through transposition, covering, playing and repeat sprinting, so the physical demands on the players are quite high. For example, in 90 or even 120 minutes of the game, if players have not good physical support, it will cause the decline of physical strength, mental, feeling and emotional, then it is easy to make mistakes and difficult to play a high level. For an excellent player, it is particularly important to make full use of the intermission, master the rhythm reasonably and accelerate the acute recovery of the body. Therefore, good physical ability and abundant physical strength are the premise and guarantee for players to maintain high-speed competitive ability throughout the competition.

### **3. The Content of Special Physical Training of Football**

#### ***3.1 Body Shape Training***

On the one hand, body shape is related to the innate genetic factors of athletes, on the other hand it is the result of training. Body training and special training are the main ways for athletes to acquire body shape training. Scientific special training methods can significantly and positively promote the development of body shape towards the direction of professional needs, and scientific and systematic body training methods also have a positive impact on body shape. The acquired training should be carried out according to the basic qualities of the athletes, such as the strength, speed, flexibility, coordination and agility to improve the athletes' body shape level and shape a healthy physique, so as to meet the needs of the competition. Several problems should be paid attention to in the training of body shape: firstly, the training of body shape should be arranged according to the law of growth and development, it cannot reduce the flexibility and speed; secondly, it is supposed to pay attention to the influence of genetic factors.

#### ***3.2 Physical Training***

The essence of physical training is the training of athletes' energy supply system and organ function, which is based on the training of three major energy metabolism systems. Athletic strength depends on the supply, transfer and use of energy, in the game, soccer players' energy consumption can reach 80% of the total energy of the

human body, aerobic exercise is about 70% -- 80%, this requires the muscles of the athletes to have a good aerobic supply capacity, while shooting, passing and breakthrough need no oxygen metabolism energy or direct ATP energy. In football games, in order to ensure the normal work of the muscles, players must timely supplement ATP, so the interval or competition training method often be used, such as organizing a scheduled small football game, carrying out the next game before the body is fully recovered, or long-distance timing cross-country running training.

### ***3.3 Sports Quality Training***

Sports quality generally refers to the quality of strength, speed, endurance and flexibility. In football, the training intensity and load will increase, especially the lower-limb strength and fast running ability training. In order to improve the competitive ability of football players, we should give priority to the explosive power development on legs, the agility and cardiovascular endurance.

The sudden speed shown in football match is the combination of reaction and starting speed, explosive force and movement frequency are the basis of sudden speed. In training, it is very important to improve the energy supply level of ATP-CP. Adenosine triphosphate (TP) and phosphocreatine (CP) are high-energy phosphate compounds stored in muscle cells, ATP is decomposed to provide energy directly during muscle movement, and then under the action of creatine kinase, adenosine diphosphate (AP) is synthesized. ATP-CP is the main energy supply system for jumping, 100m running and throwing. The priority of developing ATP-CP energy system in training can promote the improvement of speed and explosive force.

The endurance performance of athletes depends on the quality of anaerobic energy supply ability, only by constantly improving the energy supply ability in training can the body's ability move and guarantee the effect of technical movements[3]. In anaerobic endurance training, the intensity of exercise should be kept at the maximum level to develop the body tissue system related to anaerobic energy supply; in the acquired training, each training time is short and the interval time is long, so as to ensure that the athletes can carry out the high-intensity training in the repeat training; in the retention practice, each practice time should last for 30s to 90s, and the interval time is basically equal to the practice time, which incrementally accumulates the fatigue of the athletes [4].

Football players should have higher aerobic capacity, aerobic training can lead to blood capillary expansion, increase the volume of mitochondria and improve the enzyme activity of mitochondria, at the same time lactate dehydrogenase and isoenzyme participate in activities, obviously promote the metabolism of the body, so as to save the consumption of glycogen in the body, reduce the generation of lactic acid and improve the movement efficiency of the body[5].

### ***3.4 Mental Ability Training***

Good psychological quality and psychological skills can effectively promote athletes to carry out physical training and improve the level of skills and tactics, but also is the premise and guarantee of normal and hypernormal performance in the games. Therefore, mental training has its special significance to physical training, systematic psychological training can be divided into basic and targeted psychological training, and the commonly used psychological training methods are: goal-setting skills, imagination skills, relaxation skills, concentration skills and quality training.

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