

# A Study of Effects of Physical Fitness Physical Performance of Football Players

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## Abstract

Football is high risk sports and injuries are common prom for football players and Lindquist. It is an enjoyable and social sport than can be played from childhood to old age, either at a recreational level or as competitive sports. In several cases, football related injuries may occur due to over physical work that participating in a particular activity most of the sport injuries occur while participating in games and sports, tournaments, training period, or fitness activities. Football, soccer, basketball, cricket, volleyball, skiing, tennis as well as contact sports are high risk injuries. Low level of physical fitness Accidents, Bad sports training technique or foul play can cause injuries most often. It is well recognized that warming up and stretching is not practiced properly, injuries may sustained and lead to a rehabilitation and recovery process. Injuries sustained in all levels of football, either at senior level or junior level. Today sport is considered as the most important factor for around development. Sports are also linked with the image of country and national pride. Everybody accepts the importance of sports as a base for health of body and mind. It is very important to exercise the mind and body together. Games are the necessity of spiritual and moral renovation of the society. Better world is a place and atmosphere of peace for all people. Therefore, all organization at national and international level are working hand to hand to make this world fit for living, with amity and tranquility and use sports as one of the medium for spreading this gospel. Present era is the era of competition in every field to large extent in games and sports. While talking about those games which are played for long times lime Hockey, Football, Volleyball etc. require efficient skill as well as speed, strength, endurance and stamina till end of the game. It is often seen that lack of these capacities in player's result in losing the game. Except these capacities players have to possess efficient techniques and tactics. Physical fitness is must for any good performance in games and sports. Different sports require different types of fitness emplacing on a particular fitness factor. However, general level of physical fitness is necessary for every sportsman.

**Keywords:** *Physical Fitness, Physical Performance, Football Players, Injuries*

## 1. INTRODUCTION

Football playing largely involves starting, running, slopping, twisting, jumping, kicking, and turning movements that lead to greater risk of injury. Football has received a little interest in the sphere of sports medicine. Football is a high risk sport sports by overuse injuries are prevalent in football. In football only a few studies have been made in the literature regarding incidents of injury and pattern, possible risk factors and injury prevention. In football lower extremities injuries are the most common occurrences of injury as compare than upper extremities. Football is sports that make heavy demands on the player. Head injuries can be serious or fatal injuries in football during a game, three types of potentially fatal intracranial bleeding conditions to which the examining physician must be alert in every instance in which a player receives a head injury. The most rapidly progressive, yet correctable, one is caused by a tear in one of the arteries in the covering of the brain. This usually takes the form of an extramural hematoma. The Second type of bleeding occurs under the drug. It is either associated with a tear of the vessels bridging from the surface of the brain to the sinuses or occasionally is caused by oozing from contused brain surface. The tear in the vessels is usually due to a shearing of these bridging vessels and a contusion to the impact of the surface of the brain against the inner surface of the skull during a deceleration injury. Third type of intracranial bleeding that occurs in association with trauma is within the substance of the brain. Again, this is usually caused by contusion. The frontal bone is usually fractured by a force applied from directly anterior, resulting in displacement at the anterior wall of

the sinus sometimes, with great forces applied, the posterior wall of the sinus can also be injured in football, with exposure or disruption of either dura or brain. The nose is the most commonly fractured facial structure in football because it is the most prominent and has a relatively weak structure. The mandible is the most frequently injured of the facial bones in the football, when a footballer falls on the ground or struck with other players or goal post. Because the mandible has a semicircular structure, usually two fractures result from a blow impinging upon the mandible. Fracture at the zygoma or cheek bone is the most common facial fracture in the football, it is the third most prominent facial structure and its buttressing structures are 10 times relatively weak when a blow fall on the body of the zygoma displacement will usually occurs, injury to the external ear are common in some sports but rare in football. The most frequent external injury at larynx and trachea is life threatening. Any blow to the neck those results in shortness of breath, hoarseness, loss of voice or hemorrhage. Larynx and trachea is very rare injury in football. Injuries of the Knee, Ankle wrist, hand and fingers are common in football. Injuries to the wrist range from mild ligamentous injuries to dislocations that frequently require surgical reduction, and the major tendon injuries that may terminate careers. Serious injury to the abdominal wall is uncommon in football. This is because the several factors. The abdomen is largely protected as it is on the flexion side at the torso. Injuries of the wrist, hand and fingers are common in football. A closed dislocated interphalangeal joint is a common injury for football interior linemen. Injuries to the wrist range from mild ligamentous injuries to dislocations that frequently require surgical reduction, and the major tendon injuries that may terminate careers. Wrist injuries occur as the result of single training and of repetitive force overload. Single training injuries include sprains, fractures, and dislocations of the wrist joint and at all the intercarpal levels. The most frequent injuries of the hand and finger include fractures, sprains, and dislocation. Most fractures of the hand and finger are closed and appear relatively. One of the most common injuries of the finger in footballers is a combination of tendons injury and fracture, the mallet finger. Groin injuries are one of the popular injuries in football. Groin injuries are the second most frequent injury category in the Australian football league.

## 2. LITERATURE REVIEW

**Hermassi (2019)** This exam analysed the effects of weightlifting training in the season that was conducted for 12 weeks every other week. Twenty two handball players were insulated into the trials (age:  $20.3 \pm 0.5$  years; size:  $1.85 \pm 0.04$  m, weight:  $86.3 \pm 9.4$  kg) and checks (age:  $20.1 \pm 0.5$  years, size:  $1.81 \pm 0.05$  m and weight,  $83.9 \pm 10.3$  kg). A cycle ergometer strength test, a vertical squat spring jump, and a countermovement bounce controlled Pinnacle speed. The full strength proportions included seat press, semi-squats backrest, catching and fast lifting. The handball speed of standing, running and bouncing tosses was checked. Of course, combined photocells were recorded as a teste-half alter, and run times more than 5, 15 and 30 m. All parameters exceeded 0.75 intra-class connexion coefficient. All dash (3/3) and tossing (3/3) measurements were notable training impacts, but 7/14 strength parameters and 3/10 hop parameters were only observed. For snatch ( $\pm 0 = 0.627$ ,  $d = 2.85$ ), and 15-m dashing ( $\pm = 0.852$ ,  $d = 2.73$ ), were the highest execution increments. The reaction power of bounce countermovement was negative ( $d = -0.62$ ). There have been only minor results ( $D = 0.45$ ,  $d = 0.31$ ,  $d = 0.23$ , separately) in three different parameters (V0 in the top and the bottom, countermovement hop power). We assume that 12 weeks of weight training in each other week in the season improved the pinnacle power and maximum power, running and throwing of the players in the handball field.

**Ana Filipa Silva (2019)** The volleyball is seen as a touchy and fast-paced sport that normally uses plyometric training. We were inspired to evaluate the influence of plyometric preparation on the performance of volleyball players. A detailed analysis of PubMed, SciELO, SPORT Discus, Medline, Scopus, Academic Search Complete, CINAHL, and Web Science items published no later than December 2018 was conducted to classify the facts for effective audits and meta-investigations (PRISMA) of results. For the example used, all conditions were coerced. The hunt centre composed of interventional concentrates with a plyometric method. Five further publications were published in the 1831 journal, separated from numerous sources. Copied papers have been removed, titles and updated publications have been reviewed, resulting in a large review of 21 remaining inquiries. Significant capacity focused in plyometric training intercessions, qualified by intensity (four investigations), level hop (four investigations), adaptability (four examinations) and readiness / speed (two investigations) have been shown to be of a vertical bounce (15 examinations). In addition, young adults (under 18 years of age) were the most considered contestants. The included investigations showed that vertical bounce efficiency, power, even hop performance, adaptability and depth / speed in volleyball players seems to improve in plyometric training. However, it is expected that more studies would understand the benefits of plyometric training in the presentation of volleyball players.

**Pedersen (2019)** Growing strength in sprint velocity and leap tallness in first grade male football players is taken into account. Although the same results in females are common, this has not yet been clarified. This thesis explored the effect of full strength training on sprint speed and high altitude of women's football players at high school. MST increase in women's soccer players' physical strength to a large degree, however, there was no change to sprint speed or jumping height by increased maximum capacity.

**Nygaard (2019)** 's ability to play rapid directional (COD) transition is a simple aptitude. The goal of this survey is to examine the effect on COD efficiency of different physical training systems. The findings suggest that the potential of COD is a specific skill, but the COD solution demands that sports work out the training framework is the best for developing the capacity of COD. Training based on success in the application of COD should discuss the teaching concept according to the vitality system. The unpredictability of the COD mark must be taken into consideration as regards the particular contestant. And, when the preparation is coordinated, the amount of shifts in the course and the edges of the organisation is important.

**Haugen (2019)** remains constrained in our interpretation of the preparation technique leading to a world-class sprint execution considering the voluminous combination of studies into sprint formation. This study seeks to provide rational and best practise writing for preparation and better sprint success in the world class. Sprint success is heavily dependent on genetic characteristics, and the annual internal rivalry comparisons are less than mill variation, the slightest beneficial adjustment and the effect of external factors such as wind, observing technology etc. In all situations, main determinants (for example, strength, technique and clear perseverance in sprints) can be conditioned. Show now how important fitness requirements are applied to a sprint training environment (movement, precision, variety / division, and personalization) and the evolving strategies ( e.g. sprinting / running, special training, force / power, plyometric training). There is without doubt a large distance between theory and best practise in the implementation of teaching principles and techniques. Whereas most sprint-related experiments are done on young group athletes and focus on fast sprints with full strength and fast recoveries, sprinters from the world class sprint over a wide range of distances and strong forces and intervals of recovery. Within best practice, the reasons behind the training meeting have been more innovative (i.e., technique, word, strength, regeneration, meeting rate) and the "one-sized fit-all" approach to rational learning, which are contrasted. This audit offers researchers and experience in the development and enhancement of top-level sprint execution as a starting point to draught state-of-the-art sprint training initiatives and to assess the ages of current speculations in future studies.

### Physical Fitness

Well-being is a key of physical and social stability and health is the ability of fulfil the demands of physical activities. Basic fitness can be divided into 4 main components-strength, endurance, agility and adaptability. As it occurs, exercise scientists have defined nine pieces of the fitness:

➤ **Strength:**

The extent to which muscles can use strength by the contracting of resistors (for instance: retaining or restricting an object or person).

➤ **Power**

In an unpredictable blast, all aspects of force are strength and speed (for instance, jumping or jog beginning), which will apply the most intense muscular compression in one instant.

➤ **Agility**

The ability to execute a true contact action in accelerated succession under opposing headings (e.g. Punch Zap running) Balance: The ability to regulate either the holding (e.g. hand stand) or moving of the body ( e.g. gymnastic truth)

➤ **Flexibility**

The willingness to reach an all-inclusive freedom of expression with no obstructions to the excess of tissue (for example, fat or muscle)

➤ **Local muscle Endurance:**

Continued function (for example, paddling or cycling) of a single muscle

➤ **Cardiovascular Endurance:**

The power of the heart to transfer blood to functioning muscles (for example , long separation)

➤ **Strength Endurance:**

The tendency of a muscle to perform intense penance on a variety of occasions (for example, persistent uncertainty in a whole ball game)

➤ **Co- ordination:**

The ability to organise the above segments with a view to achieving successful movements Of all nine cardiovascular fitness components, the most important elements for optimising the different segments of the moulding state are the.

**Protective device**

Use of protective equipment has been recognized as a common injury prevention strategy. Shin-pad is used to protect the lower leg from impact injuries. According to Lees and Lake, shin-pad offer protection from injuries ranging from the severe (such as direct contact between the opponent boot and the legs as in a poorly executed tackle) to the minor (such as bruises and scratches from glancing blows). However, in present study it was found that players were notfully implementing the use of shin pads especially during training. It was shown that 39% of the players always wore shin pads during training whereas all the players wore shin pads during matches. Ironically, the results of this study had shown that the trend of injury during training and matches were consistent. In the previous study by Hawkin and Fuller, the findings were inconsistent with the findings of this study including the area where, in the previous study it was reported that more than 80% players were not encouraged by their coaching staff to wear shin pads during training.

**Nutrition**

Proper nutrition is another measure to help prevent injury. In terms of the carbohydrate intake by the footballer, it is often inadequate. If the muscle stores of carbohydrate are not adequately replenished, subsequent performance will be impaired. However, most players reported in this study are lacking the awareness about carbohydrate intake prior to and after training and matches. In the previous study by Hawkin and Fuller, most players (more than 80%) always consumed carbohydrate, and they were given some advice before and after matches and training. In the present study, most players reported that they were given very little advice on the nutrition intake during the pre and post training and match period. This shows that the professional Indian footballers are very much lacking in their energy store for the purpose of delaying fatigue and for the recovery aid.

**Strength training**

In the area of strength training, in this study it was found that the Indian footballers were lacking in their awareness towards strength training. As high as 51% agreed that strong muscles are important in the protection against injury. Also, most literature recommended that 3 times per week is the best routine for elite footballers, because overtraining might lead to burn out overuse syndromes. Overuse injuries are caused by continued or repetitive action or as a result of exposure of a structure to high loads.

**3. SPORTS TRAINING**

The method should be structured and guided against rational reality and the ways in which it is difficult to aspire to, and preparation should be based on the effects of a fruitful experience that has followed the test of time competition. The method of instruction should be focused on the best performance. Competition preparation is a very comprehensive procedure. There are many reasons behind physical fitness strategies to improve the efficiency of sport people. A sports person's success relies fundamentally on his ability, such as pace, strength and stamina.

Consequently, each of these variables was the major physical fitness criteria. Sport fitness is an individual athletic, professional, strong and academic skill in physical activity helps to gain top-level success in favour of an individual and player. In building up the physical, motor and performance related segments in football, b-ball, by and large the player is treated with changed type of training, for example, extending exercise, obstruction, plyometric training, interim training, speed based training and blend of various training module of these the training modules utilized in the present examination are clarified underneath quickly.

Contingent upon the advancement in the development plan, the general blend of every one of these materials will fluctuate. As a training season creates, pressure molding work for endurance will bit by bit from a progress into an accentuation on power with substitution of force of volume in deciding the all-out burden.

### **Physical Education and Physical Fitness**

It was during the war long stretches of the mid 1940's that the term physical wellness and all out wellness become commonly utilized. These terms were applied to the different limits which have been perceived for a considerable length of time as a feature of the commitments of physical instruction which the term wellness and its use were moderately new, the concepts and its significance to physical training were not new projects were altered to give more noteworthy underline to the wellness destinations and by and large assess system were utilized. The later were typically chosen based on practicality and sometimes with the standard endeavors to approve regarding a standard which had been acknowledged.

Scott and French (1959) clarify that the development of physical wellness requires principally two kinds of exercises, to be specific strengthening exercise and endurance exercises. An individual who is physically fit has strength and stamina to do his day by day task without undue exhaustion. In this way, school physical training project ought to incorporate diverse physical exercises, proper to each review level. In India, no activity steps were taken to advance physical wellness until 1958. In any case, in 1959, an endeavor was made by the Ministry of Education, Government of India with the assistance of Joseph, the previous Principal of Lakshmibai National College of Physical Education, Gwalior to advance physical proficiency through the Nation. Physical wellness assumes a significant job in all sports occasions particularly games and games like container ball, volley ball; football and so on crude man was fit by the day by day schedule obstruction against nature and wild creatures. However, presently a day kids and youth are delicate as a rule not just that they don't have chance to accomplish physical wellness. Yet additionally doesn't completely value the significance of physical wellness. Subsequently wellness implies shaving the important characteristics to play out any exercises. Physical wellness is a piece of complete wellness.

### **Goal Keeper:**

The goal keeper is very important player in the team. He is main defender of the goal. In one sense, he controls the defense, particularly when the opponent is near his own goal. He must be strong, able and daring. He must be extremely skilled in gripping and throwing the ball. He must be able to jump and dive to grip or punch away a ball. He must be able to kick accurately and strongly from the ground and with a punt [half and full volley]. He must have an ability to read and anticipates the game as any other player. The best goalkeeper is the one who seldom appears to make an incredible dive or leaps, he position himself so that the ball comes to him, and by positioning he makes the angle for scoring very difficult for the attackers.

### **Full Backs:**

They are mainly defenders (right, left and sweeper backs). However, they should be all-rounder with the ability to use both feet equally well, skillful use of the head, speed or retreat back, strength in the tackle and clever anticipation. Each player must work in formations with his co-defenders. A full back will know the set position. He should never be afraid of joining the attack when the chance presents itself. When it does, it is important that his fellow back should be slightly farther back to cover him; plan for what to do in such a situation is essential. A full back, like goalkeeper, can start many attacks. A common Football saying is that "most attacks start in one's own penalty area" The fullback must use the ball well with accurate passes rather than making long kick, which often will go straight to an opponent. However, he must never kick or head across the face of his own goal, he should learn to intercept through clever anticipation. The fullback must be neither a complete Football player nor just a tough fellow with a big kick.

**Wing Half Backs:**

Wing half backs are in fact a link between the forwards and the fullbacks. They have a somewhat disgusting position. They must be ready to back up their own forward line, and quick to shift to a distant position. They have to run more or less nonstop. At one time they will make passes to the forwards helping them to score a goal and another time they will be in their own area to defend an attack on the goal. They must have ability to understand the game, great endurance, speed, strength, coordination and a great tactical sense ability to know the weak points of an opponent. He should be good at shooting, as very often he takes at the goal. He should be able to use both his head and feet and if ever his opponent beats him, he must return briskly behind and again tackle his opponent.

**Center Half Backs:**

The center half marks the most dangerous player on the opposite forward line, namely the center forward. He must be a speedy, heady player and the leader of the half back line. The center half back must be a sound kicker, and like the other members of his defense, he must be able to use the ball and not mere clear it widely away. He must have complete understanding with goal keeper and his fellow full backs; he will often find himself covering his other men. He must have full comprehension of the offside law, and know when to try to apply a play to discourage an opponent's attack. In short, he must be the pillar of any defensive system.

**Wing Forwards:**

A winger is an attacking player whose main role is to play outside and get to the bye line and supply crosses to teammates in the center area. The prime requisite to a wing is an ability to control the ball while traveling at top speed. He must also have dribbling ability, for very often he will find him hemmed in to the touchline by the fullback, and his only way out is to attempt to beat full back. He must be able to pass, center or cross the ball accurately. He must be able to shoot hard with both feet because one of the attacking of wingman is to cut inside the opposing and shoot at the goal. He is certainly more full back of an attacker than a defender, but this does not mean that he should not be prepared to fallback and help his defense when the occasion demands. He will come back down his wing to take the clearance from his full backs and his goalkeeper, and he will be able to utilize the open spaces to be found at the wing. The wing forward must be good at kicking a dead ball, for he is the man to take the corner kicks; he should be prepared to chase and tackle back if he loses the ball to an opponent; he should be able to inter pass with his inside forward to easily beat any one man approaching him. The work of this forward will produce many immediate scoring opportunities for a team. Thus we see that football being a team game requires players playing in different positions with different specific conditional and volitional abilities. These players with different conditional and volitional abilities play in a cohesive manner using various strategies and tactics to win the game. Conditional and volitional ability to a great degree depends on the anthropometrical parameters of the players. Several researchers in the past had carried out studies to ascertain this fact. Gray (1936) carried out a study on 1979 football players in relation to the field positions in which they played. They varied very slightly in their age. The weight increased in successive positions, and significantly so, except the guard (defenders) versus the Tackle (Forwards), the latter being only 1.1 kg heavier. These men were the heaviest of all groups studied. Stature was also found to increase in successive positions, but not in the same order as weight, the main shift had been for the ends who were lighter than the centers (Half) and guards (defenders), but taller than both; it was noteworthy that they were taller than centers (Half's) by only a trifling margin of 3mm. If weight and height together be taken as a rough criterion of more physical power. These measurements gave the two tackles (forwards) very special characterization of the least weight for their height. In study of Junior high school athletes, Shelley (1960) found that those athletes who were outstanding in football were largely mesomorphic or mid types, and that they were taller and heavier than other athletes.

Sidhu and Wadhan (1974) found footballers to be of average height with larger trunks and smaller lower extremities than the controls. They also had more of lean tissues in the extremities than the taller. Among the Indian national footballers, the forward halves and backs were quite similar to one another. They were shorter than the stoppers and goalkeepers. The forwards and halves in the national level football players were bigger than their counterpart in the university level football players, but the backs of the former were shorter than those of the taller. The stoppers and goalkeepers in the two groups did not differ appreciably from each other. The forwards in the university level and national level football had shorter lower xtremities in relation to upper extremities. They also possessed broader knees in proportion to elbows. All players in university level and national level football possessed better developed tissue in the thigh in relation to that in the upper arm and possessed less of body fat than the control groups, the body

fat was found to be greater in the case of state level football players. D.B. Pyne, A.S. Gardner, K. Sheehan and W.G. Hopkins (2006.) carried out a study on Positional differences in fitness and anthropometric characteristics in Australian footballers and concluded that compared with midfield players the linkmen, forwards and defenders were decisively taller. The only significant change in the results fitness 5 year period, the height (0.76 , moderate growth) and 20 m for the sprint (0.39 , small). [Book] TheSporis Martina Mr. Goran Anberg Canaki Barisic elected Dr Valentin Bossevsy (2007) a study of a morphological difference Elite Croatian women's Football team as a player and have found that with the belligerent goalkeepers has proved to be the highest and most difficult of team players, the longest arms, feet, and the maximum thigh. It is concluded that the most important considerations in selection of the morphological characteristics specifically designed for various positions with their warlike goalkeepers. During the searching to demonstrate that anthropometrics measures play a fundamental role in playing the various positions. The design and the body size, shape and composition of known form is also play a significant role in in this respect. Although the football players also depends on the education, the capabilities of a number of other factors, and the motivation of physiological and biomechanical i.e. age, gender and physical growth, but structure will play a play a very significant role in determining the human movement. The genesis ultimately predisposes an individual to better structure certain movements. For example pre-football halfbacks quite similar players and another but not shorter than the stops with goalkeepers and warlike. That is less than lower limb forward. A greater proportion did possess on my knees. Plugs is relatively wider shoulder muscles and the tissues more developed thighs. With their high warlike goalkeepers, proportionately similar, long lower limbs lighter and the mechanism. The research had attempted to have a strong correlation between the vessel anthropometrical inter-university football players physical fitness. This research will also ensure appropriate directives and promotion of the coaches and trains the footballers for the systematic and effective way, the structure of a good team.

#### 4. CONCLUSION

The sporting motto "Bigger, Faster and Stronger" is actually read virtually as frequently as the Olympic motto "Faster, Higher and Stronger". There's no question that pro athletes are actually running faster, heavier weights are now being lifted or perhaps implements are now being tossed farther. The word "stronger" in both mottos is actually the sole phrase applied especially to one of the essential health attributes, specifically strength, and a consideration which is actually basic to other types of enhanced performance. The opposition training, detraining and retraining is the proper training convention to create huge changes over speed and physiological parameters of male players. Comparative study may likewise be led for female understudies. Investigations of comparative nature may likewise be led by changing the needy variables. Comparable study might be led utilizing opposition training, detraining and retraining by utilizing increasingly test gatherings. Fitness experts, health advisors and molding experts can utilize obstruction training for getting ready different training programs. It is prescribed that a comparative study can be directed on a wide age test and for longer term. More work should be embraced to clear the speed and physiological relationship and the impact on this kind of training. To keep up the fitness level a gentle physical movement might be finished during the training discontinuance periods.

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