

Badminton Sports Injury and Its Preventive Measures

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Abstract: People's living standard improve constantly, and sports have become an important part of the public's spiritual and cultural life. Badminton is a popular sports program that combines enjoyment, participation and exercise. In order to solve the practical problem of buckling injury in the process of badminton, this paper analyzes the body parts of badminton sports injury in detail; the technical movements against badminton sports injury are not standardized, the preparation activities are insufficient, the amount of exercise is too large, lack of thoughts, field and equipment factors; put forward specific preventive measures: comprehensively improve physical fitness, popularize sports injury prevention knowledge, carefully do warm-up activities, rationally arrange sports load, master correct technical actions, and construct damage prevention and control system.

1. Introduction

Life is movement, and having a healthy body can effectively engage in various social activities. With the continuous improvement of the material life and spiritual living standards of the people, "Outline of the National Fitness Program" has been constantly deepened, and sports have become an increasingly important part of the spiritual and cultural life of the people. While bringing spiritual pleasure to people, it has also become an important mean of overcoming various diseases and strengthening physical fitness in the development stage of the well-off society. While people pay attention to the physical and mental benefits of sports, the choice of sports has also changed. The diversification and high grade of sports means are the development trend of sports for all.

As an anti-ballistic sport, which is held across the net, badminton is a combination of enjoyment, participation and exercise. Because of the simple equipment, no physical contact, self-control of the amount of exercise, full of fun and physical fitness, it is loved by the people. Regular badminton exercise can improve the cardiovascular system and respiratory system function, increase lung capacity, increase oxygen consumption and eliminate carbon dioxide, make respiratory muscles developed, powerful and durable, can withstand large amounts of exercise, and increase strength and speed. Regular badminton sports also help to improve the quality of will, foster a sense of competition and develop sportsmanship.

In recent years, badminton sports have developed rapidly, especially in more and more badminton events in the community. The technical requirements for badminton are also getting higher and higher, which promotes the popularity of badminton. Badminton sports constantly run, stop, turn and take off on the field. For ordinary badminton enthusiasts, the technical movements are not standardized, it is easy to cause damage, both mentally and physically, which will cause great trouble. It has an adverse impact on the promotion and development of badminton. Through the research of this subject, the reasons for the loss are analyzed, and preventive measures are proposed. In theory, the research on prevention and control of sports injury can be further enriched. In practice, badminton sports injury can be reduced, badminton sports and national fitness programs can be promoted.

2. Characteristics of Badminton Sports

Badminton is a sport that can fully exercise, enhance physical fitness, cultivate sentiment and good moral qualities. It has the following characteristics:

(1) Systemic sport. Whether it is a regular competition or a general fitness activity, badminton must be constantly moving, jumping, swiveling and swinging on the field. Using various batting techniques and footwork, the ball will be played back and forth on the field. Increases the strength of the upper limbs, lower limbs, and lower back muscles, speeds up systemic blood circulation, and enhances cardiovascular and respiratory function. Long-term badminton exercise can make the heart beat powerful, the lung capacity is increased, and the durability is improved. In addition, judging the ever-changing ball path and decisively countering can improve the sensitivity and coordination of the human nervous system.

(2) Highly controllable amount of exercise and rules. The amount of exercise can be adjusted according to the physique, exercise level, age and environment of the participants. The rules of the game are controllable. As long as it is good for exercise and happiness, the rules can be formulated according to needs. Young people do badminton sports, exercise intensity can be slightly larger, promote body growth and development, improve physical function. The elderly play badminton, the amount of exercise should be relatively weak, and it has a significant effect on enhancing the cardiovascular and nervous system functions of the elderly. Children and children play badminton, more restricted by rules, running and jumping in the sun, and getting happy in the game.

(3) Strong entertainment and appreciation. Originally as a competitive sports program, it has now developed into a fitness program that people love and enjoy. As an entertainment and fitness activity, there are still characteristics of competitive projects. Participants won the victory by running and fighting against each other, winning both physical and mental pleasures, and being able to experience the joy of playing a good ball and the joy of winning a game. Badminton players combine speed, endurance, strength and flexibility on the court, making the badminton sport full of fun, refreshing, sporty and entertaining.

(4) Economical and practical badminton sport. In addition to professional badminton training and competitions, people often perform badminton training in parks, open spaces and venues, which are not restricted by the field. It is also the reason why badminton is widely welcomed. As an easy entertainment, you can cultivate and exercise, and improve your overall function. In recent years, with the improvement of people's living standard and the development of infrastructure construction, many places have built indoor badminton halls. The charging standards are in line with the level of mass consumption. Many people choose badminton halls for sports.

3. Body Parts of Badminton Sports Injury

Whether it is a beginner in badminton or an athlete who has been engaged in badminton for a long time, if you do not pay attention to mastering the correct hitting technique, not preparing for warm up or inadequate preparation, or being in a state of excessive training for a long time, it is easy to cause some acute or chronic injuries. Through systematic investigation and detailed data analysis, it is concluded that the badminton sports injury presents two characteristics: first, the regularity of the injury part. The probability of injury in all parts of the body, from high to low, is the knee, waist, shoulders, ankles, wrists, and other parts. The second is the staggering of the damaged parts. Badminton players often do not have a single injury situation, the damage is diverse, and often staggered. A brief analysis of the specific damage is as follows:

(1) Shoulder joints. Basic actions such as backhand hitting, high ball and killing the ball need to be achieved by the strength of the shoulders and arms. The process of repeatedly hitting the ball is repeated in the shoulder muscles. The small muscles are in a state of eccentric overload, and the chance of causing various degrees of damage or traumatic lesions in the rotator cuff increases.

(2) Elbow joint. Badminton sports often have elbow and wrist joints that control the movement of the ball by controlling the strength of the fingers, wrists and arms. During the stroke, the palms are turned upside down, bent backwards frequently, and repeated wrong movements at the wrists cause the muscles and tendons at the elbow joints to violate the physiological stress characteristics for a long time, causing elbow joint damage.

(3) Wrist joints. Insufficient strength of the wrist joint, in the action of catching the ball and other ball speeds too fast, the reaction is not timely, the force is incomplete, and the impact force is

excessively excessive to the wrist, causing damage. Next, it is an irregular movement. When the ball is shot, the face is not correct. The position of the effective hitting area of the face can not be used, so that the racket is not evenly stressed, and the wrist is easily damaged.

(4) Knee joints. Badminton sports repeatedly appear in short distances, such as momentary change, sideways, flexion, extension, take-off, striding and squatting. The stability of the knee joint is constantly subjected to severe tensile stress and pulling force. Once the movement is uncoordinated and excessive, excessive fatigue can easily cause acute injury to the knee joint. Sometimes the knee joint exceeds the toes and can cause serious damage.

(5) Ankle joint. The main cause of ankle injury is unsteady landing after hitting the ball, irregular movement, or insufficient warm-up before exercise. In the process of playing, there are more jumps and emergency stops. It is necessary to step the ball in front of the net and the legs change rapidly. If the ankle is injured during exercise, the external ankle will be swollen or subcutaneous, and the pain will not stand.

(6) Muscle strain. Badminton requires a lot of movement in the legs and elbows, and the muscles behind the thighs and the muscles in the elbow are the most vulnerable. Muscle strain is divided into active strain and passive strain. The main reason for active strain is that the muscle contraction is too fast, and the speed exceeds the range of the muscle itself. The passive strain is the muscle that is subjected to violent impact under tension and stiffness caused by traction.

4. Cause Analysis of Badminton Sports Injury

The reasons for badminton injury are summarized as follows:

(1) Technical movements are not standardized. After years of exploration and development, badminton has formed a scientific and complete action system. For example, reasonable use of flat push, lob and smash can not only effectively score, but also protect the body from harm. However, these techniques are complex and must be mastered by professional guidance and long training. Most badminton players do not have professional training in the early stage of contact with badminton. Almost all movements are self-exploration. There are widespread technical movements, even wrong movements, which violate the physiological characteristics of the human body and increase the burden on certain parts caused damage.

(2) Preparation activities are insufficient. The preparation activity is to perform muscle exercise in advance, leaving traces in the corresponding center of the cerebral cortex, and the excitability of the central nervous cells in the movement is advanced first, so that the nervous system can more effectively regulate the various organs of the body, the body is more flexible, and can quickly adapt to high intensity. motion. If the preparatory activities are inadequate, the movements are not correct, and the lack of pertinence, the body functions cannot be mobilized, and the power of the human body cannot be exerted, resulting in stiff and uncoordinated movements during exercise. Badminton is a need to respond quickly and make corresponding ball-catching movements. Mismatch between the two can easily lead to sports injury.

(3) The amount of exercise is too large. During exercise, the joints of the body will touch. If the amount of exercise is too large, the number of collisions in the joint parts of the body will increase, which will inevitably cause wear and tear between the joints, which is very easy to be injured. Continuous high-intensity exercise can easily cause fatigue in the human body. Fatigue can lead to deformation of technical movements, distraction, decreased physical strength, decreased body flexibility and responsiveness, and easily cause sports injuries. If you feel muscle stiffness and soreness during badminton, immediately adjust to the rest of the game, do not overload, do not continue the game and training, so that the body is restored.

(4) The understanding of ideas is deficiency. Ideological cognition affects people's behavior and becomes one of the main causes of sports injury. If participants' perceptions are low and their safety awareness is weak, they are likely to cause damage. Some participants do not pay attention to the goals and methods of exercise, can not effectively control emotions, are too violent, and are easily injured. Some participants are not clear about the measures to prevent sports injuries, eager to seek success, ignoring the principle of gradual physical exercise, no safety measures, ignoring the injury

caused by sports injuries, or not realizing sports injuries, unconcerned, blindly doing physical exercise.

(5) Field and equipment factors. The badminton court has a serious impact on the lower limbs of the athletes. The plastic field is easy to fall due to excessive friction; the plank site is relatively slippery, and it is easy to lose balance during running, causing leg muscle strain; the cement site is hard, and the reaction force on the ground is large during the running and smashing process. The part and the knee are partially overburdened. The hardness of the racket is too large and the arm is damaged. The hardness is too small. The control of the ball is poor. Running shoes and Board shoes do not have the function of slipping and protecting the ankle. It is easy to sprain the ankle; Unsuitable sportswear, for example, long trousers are not convenient. For running, it is easy to trip and damage.

5. Preventive Measures of Badminton Sports Injury

For the reasons of badminton sports injury, the proposed preventive measures are as follows:

(1) Improve overall physical fitness. Badminton is a net-defending project with high physical quality requirements. If the athlete's endurance is poor, the physical strength will drop in the later stages of the game, and the flexibility of each joint will be reduced, resulting in failure to complete normal movement or hitting the ball and causing injury. Good physical fitness helps to improve the stability of the shot, increase the speed of smash, and the muscle strength around the joints also has a protective effect. Therefore, it is necessary to strengthen the strength training. Good flexibility, which helps to increase joint mobility and stretch the footwork and hitting action. In short, comprehensive improvement of the physical fitness of badminton enthusiasts can help prevent sports injury.

(2) Popularize knowledge of sports injury prevention. There are many reasons for the damage, and improving your own safety awareness is an important way to prevent injury. In general, we must strengthen the prevention of injury concept education, whether it is fitness, or physical education, training and competition, are the principles of serious implementation of prevention. Strengthen the popularization of sports injury prevention knowledge, often conduct safety education, understand the causes and treatment methods of injury, and develop a good sportsmanship trend. Technical movements and exercise load should be actively learned and strictly controlled according to their actual conditions; try to avoid accidental factors and minimize the damage.

(3) Do warm-up activities carefully. The purpose of preparing for mobility is to increase the excitability of the central nervous system and overcome the inertia of the autonomic nervous system. Prepare activities as much as possible; prepare the content and load of the activity, comprehensively consider various factors such as the content of the official activities, the physical function of the individual, and the meteorological conditions at that time; strengthen the preparation activities for vulnerable parts; The amplitude, strength and speed should be gradual; when the interval is long, the exercise should be prepared again before exercise; proper muscle strength exercises are beneficial for improving muscle temperature and improving muscle function.

(4) Reasonably arrange the exercise load. The exercise load is too small, and there is no physiological "over-recovery", and the exercise capacity is not improved. The exercise load is too large, which exceeds the human body's ability to withstand, resulting in central nervous system fatigue, decrease systemic function, and reduce coordination ability or the damage occurred. Therefore, it is necessary to arrange the exercise load reasonably, pay attention to the reflection of various parts of the body after exercise, and avoid causing physical fatigue. The exercise load arrangement should be gradual, from small density to high density, and avoid long-term and high-intensity exercise in the absence of normal exercise, resulting in physical fatigue and sports injury.

(5) Master the correct technical actions. Mastering the correct badminton technical action plays an important role in preventing injury. During the development of badminton for more than one hundred years, through the continuous research and exploration by researchers, the normative batting action and the moving step on the field have been gradually formed. Ordinary badminton

enthusiasts can learn by watching instructional videos or standard technical movements under the guidance of professional badminton coaches or higher level athletes, from the most basic gripping movements to swinging, hitting and running. Step by step and so on, we will continue to study in depth, and we will be able to cope with various situations flexibly and freely in actual combat.

(6) Construct the damage prevention and control system. It includes four aspects: first, the identification system, which effectively controls the personnel, materials, environment and management, and identifies potential factors. Second, the forecasting system predicts the probability of occurrence of the risk, the possible damage, the degree of damage and the time of occurrence. Third, the implementation system minimizes the risk occurrence rate through risk avoidance, mitigation and transfer, and can take timely countermeasures after the risk occurs. Fourth, the evaluation system evaluates the results achieved, accumulates experience, establishes evaluation criteria, and provides support and evaluation criteria for specific implementation.

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