**The Role of Core Strength Training in Badminton**

**Mengyao Xie**  
*Jianghan University, Wuhan, Hubei 430056*

**ABSTRACT:** This article uses the literature material, the logic analysis and so on to carry on the discussion and the research to the core strength training in the badminton movement, in order to provide the reference for the badminton lovers and researchers.

**KEYWORDS:** Core strength training; Badminton.

Twenty-first Century core strength training is gradually recognized and respected by the competitive sports training field in our country. So far, very important and special strength training - the core strength training has gradually become popular sports training. At present, the core strength training of the research system is not very perfect, the research of each sport is not deep enough, still in the exploratory stage, especially the badminton movement, the number of research is very few. This paper expounds the role of core strength training in badminton training, and provides reference for badminton lovers and researchers.

1. **DEFINITION OF CORE STRENGTH**

Core strength is the core area of the muscle force in motion is shown by force, normally it is divided according to anatomical knowledge, simply say that the core area of muscle is outlined above the group's strength, it is better reflected in the movement of the connecting upper and lower limbs, reduce the body center of gravity the fluctuation of the bridge, is equivalent to the human.

2. **DEFINITION OF CORE STRENGTH TRAINING**

Core strength training is a kind of physical training, it uses a variety of related training equipment and training methods of the core area of the muscle groups to carry out targeted training, improve the human core function, to the human body center of gravity wave motion stability.

3. **THE CHARACTERISTICS OF THE CORE STRENGTH AND BADMINTON**

3.1 *The characteristics of the core strength*

Core strength is a kind of strength training ability which is the main function of stabilizing the core part of the human body, controlling the movement of the center of gravity, transferring and connecting the upper and lower limbs. Compared with general strength, core strength is more prominent on muscle innervations and control, more emphasis on the development of small muscles and the cooperation between big muscles and small muscles, pay more attention to the relationship between power and coordination. In a similar and badminton tennis, Zhang Zhiwu and others in the core strength training on improving experiments show that empirical research in tennis ball: after core strength training for a period of time the tennis players serve speed and control group members’ generally highly significant difference. As a result, it can be inferred that the core strength training is of great significance for the badminton, which is a kind of skill control for the project.

3.2 *Characteristics of badminton*

Badminton is a network of flexible and varied sports events, with a certain range of motion. With the promotion of badminton, people's physical quality is increasing and the level of technology is constantly improving. Nowadays, "fast, accurate, malicious, live" technical wind becomes the main stream of badminton. In badminton sport, the direction of the ball to the ball, angle, arc distance and other uncertain factors, the stability of its return is extremely critical. Therefore, as the core of maintaining the stability of the core parts, controlling the movement of the center of gravity, and connecting the upper and lower limbs,
the core strength plays an important role in the badminton movement.

4. THE ROLE OF CORE STRENGTH TRAINING IN BADMINTON

4.1 To enhance the stability of the spine and pelvis in the sport of badminton players

The importance of the core parts of the equivalent of building foundation floor, no matter how strong the foundation is unstable and ultimately could not escape the fate of collapse. Not only affect the movements of the limbs, but also the control of the body's center of gravity, coordination of the role of the lower limb synergy. The badminton athletes need to move, stop all the time to jump, smash and upper continuous ball in the game, to hit the ball out of that is stable and powerful, we must let the limbs coordination, more important is the core of regional stability, provide a stable support for other muscles or all the muscles. Therefore, only to strengthen the core strength training in order to ensure that badminton players in the game can play a stable technical action, so as to win the game to add weight.

4.2 Enhance neural control of muscle

The core strength training often uses the Swiss ball as the training equipment, in the dynamic motion lets the athlete carry on each kind of core strength training, in order to enhance the strength of the core area of the athlete, also match the characteristics of the game. So often in an unstable environment for training, you can force the body to continuously adapt to changes in the external environment, so that the body can produce adaptive changes, which can improve the neuromuscular function.

4.3 To improve the energy output of athletes

In the badminton sport, the consistency of the body to coordinate the requirements of higher, it requires the core muscle group to play its ability to play its ability, better convergence of the lower limb, so that the power can be successfully passed. Based on the core strength training can be more efficient to complete the energy output, speed up the transfer of power to speed reduced by hitting the whole process time, thereby reducing energy consumption, improve efficiency, make the action more economical and practical.

4.4 To enhance the coordination of the work of the body

In badminton, the core strength is strong enough to keep the body in the air more harmonious, to maintain stability in the air, and to ensure the stability of the landing. The body parts of the solid support, the body will be free to carry out more coordination of technical movements, which are dependent on the core strength. Especially the core muscles in the small muscles play the role of stabilizing muscles, strong core muscles and deep small muscle group coordination and cooperation, the badminton players on the pitch to complete the precise place hitting cohesion more smoothly.

4.5 Between upper and lower limbs, connecting

According to the principle of moment in physics is kept constant in the closed individuals, people in the process of movement to the body as a whole is closed, part of a forward rotation torque, so other parts will produce a backward rotation torque, the core in the process of power will play a connecting the role of. In the action of badminton is also the same, such as the upper arm to complete the forward stroke action, the lower limb must have a back kick action, so as to achieve the balance of the body.

4.6 Prevent sports injuries

Badminton is a "fast", "ruthless", "quasi" and "live" for the characteristics of the activities, these four characteristics determine the badminton movement mainly depends on the fast and powerful accurate shots to finish the race, with a rapid force in the badminton movement in the most common, but also is the key. The badminton movement of rotation range of motion of each joint has a very high demand, not the right to force action over the long term will cause fatal injuries, the core strength of the stability of the premise of other forces play a role to prevent injuries, it can maintain the stability of the athletes body, acute injury prevention does not conform to conventional action by. Often the core strength training can effectively prevent unnecessary injuries, so as to improve the competitive level of athletes.

5. CONCLUSIONS

This paper analyzes the important role of core strength training of badminton, badminton enthusiasts all make a preliminary understanding of the value of core strength training in badminton sport, can pay attention to core strength training in peacetime exercise and learning, strengthen the core strength training. Core strength training plays an important role in badminton sport, can enhance stability, the badminton athletes in the movement of the spine and pelvis to improve the ability of athletes to improve work efficiency, output coordination and cohesion of upper and lower limbs, connecting and injury prevention.

REFERENCES


