

The Related Research on Gymnastics Training and Youth Balance Ability

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Keywords: Gymnastics training, Youth balance ability, Physiology

Abstract: A person's balance ability reflects the activity of his cerebellum, which directly affects his athletic ability. Due to the usual extracurricular sports injuries may cause great harm to the young people's body and mind, and seriously affect the healthy growth of young people, coupled with the continuous improvement of people's living standards in recent years and the abundance of material life, more people will focus on To the growth of young people. The main purpose of this article is to study the relationship between gymnastics training and youth balance ability. Through a simple understanding of the related concepts and characteristics of youth balance ability, to study the role and influence of gymnastics training on various aspects of youth balance ability, and to encourage everyone to pass reasonable and correct training. Ways to effectively improve the balance ability of young people and reduce the chance of sports injuries in gymnastics training.

1. Introduction

Adolescents are a period of rapid growth of a person's body. Appropriate physical exercise can make this growth process healthier, especially gymnastics training. Reasonable and moderate gymnastics training can greatly improve a person's balance ability. The earth guarantees that young people are not so easily injured when they participate in other sports. Teenagers are generally more active and like to participate in various sports activities, so they are often injured due to various reasons during sports, which will cause certain physical and psychological harm to the teenagers, to a certain extent Reduce and dispel their enthusiasm for participating in sports, so the prevention of youth sports injuries is worthy of our in-depth study.

2. The Physiological Concept of Adolescents' Balance Ability and Characteristics of Young People's Balance Ability

The balance ability of adolescents means that they keep their body's center of gravity within a fixed range, and can automatically adjust and maintain and maintain their original movements when they are disturbed by the outside world. Balance ability is coordinated by the human senses, movement, peripheral nerves, and central nervous system. Relevant textbooks of Chinese universities and colleges have also made relevant definitions of balance ability. They define balance ability as a posture of the body and the ability to automatically adjust and maintain the posture when exercised or subjected to external forces. Therefore, the composition of the balance ability of

adolescents is composed of multiple systems within the body participating and working together, and adjusting the balance ability of adolescents has become a complex physiological problem that is involved and completed by multiple systems.

Balance is to maintain a stable center of gravity on the basis of a supporting surface. It is a variety of nervous systems that work together, and through the cooperation of muscles, the center of gravity is constantly changing position on the supporting surface to find its own stable position. On the other hand, balance means that the human body uses vision and proprioception to determine the position of its own center of gravity and understand the external environment, and transmit information to the central nervous system, and the central nervous system integrates the acquired information and then transmits it to the next Levels, such as the lower limbs of stepping and knees, can also be transmitted to the upper limbs and torso of a person, so as to adjust the activities of the human body and achieve a balanced state of the body. In terms of mechanics, balance is mainly affected by the center of gravity and the supporting surface. The height of the center of gravity, the size and stability of the supporting surface can all affect the balance. From a physiological point of view, the size of the human body's ability to balance also reflects a person's motor skills. It is a process in which nerves and muscles work together, and this process is very complicated. Under normal circumstances, when a person's center of gravity is perpendicular to the base, the human body will automatically adjust to move the vertical line of the center of gravity to a normal level, so that the human body can regain its balance. It is generally believed that the human body uses three major sensory systems to control its balance. These three sensory systems include vision, proprioception, and vestibular system. The mechanism of their operation is relatively complicated. First, the multi-level balance sensory nerve center integrates and processes the information transmitted from the three sensory systems, and the multi-level balance sensory nerve center is composed of the spinal cord, vestibular nucleus, and cerebellum, and then processes it. Passed information is conveyed to the muscles, and the muscles have a certain relationship with the body's balance ability. It can maintain the body's center of gravity. These processes are indispensable. When there is a problem with the balance ability, one of the functions must be damaged, which will have serious consequences for the human body.

The balance ability of adolescents is determined by the comprehensive development of various systems within the body. Only when the various systems are developed in a coordinated manner can they maintain a stable level of balance. Most young people have an obvious characteristic, that is, they are very active. They are easily affected by emotions, act impulsively, and do not know how to control their words and deeds. At the same time, their young age and lack of experience make them unable to be proficient in sports. Mastering skills often suffers from some sports injuries due to some irregular movements, especially in the process of gymnastics training, one who is not careful will be injured. Therefore, for young people, we must pay attention to the places that are easy to cause injuries in gymnastics training and take preventive measures actively. As adolescents age, their balance ability will gradually improve, but after they reach adulthood, their balance ability will reach a peak and then begin to decline. Teenagers can improve their balance ability through some acquired exercises. Related scholars have conducted a special survey. They believe that teenagers gradually improve their balance ability in the age range of 12 to 15 years old. The taller adolescents tend to have poorer balance ability, which explains why are gymnasts generally not tall? In addition, many people believe that there is also a certain relationship between gender and balance ability. Women's balance ability is generally better than that of men. They give the basis that women's upper body is narrow and thin, so the center is low, but through our research It is found that there is no obvious difference between men's balance ability and women's, because men's muscle strength can produce a certain amount of feedback ability, which can well make up for the lack of balance ability.

3. The Effect of Gymnastics Training on the Balance Ability of Young People

Many sports can have an impact on the balance of young people, but the most influential are martial arts, gymnastics and other sports. Gymnastics training is irreplaceable by other sports due to its rich diversity and fitness value. Gymnastics training skillfully uses flat ladders, single parallel bars, mats and other equipment to form a variety of exercise facilities. On the one hand, it has greatly aroused the interest of young people in training; on the other hand, the full combination of these equipment can make training better to improve the balance ability of young people, exercise their flexibility and agility. In recent years, there have been more and more examples of adolescents' sports injuries. Adolescents' sports injuries occur at all ages, but the injury rate of middle school students is significantly higher than that of elementary school students. This is because Compared with elementary school students, middle school students participate in more intense sports, which increases their chances of sports injuries, especially gymnastics. If teenagers cannot concentrate during sports, they are prone to injuries. Therefore, it is necessary to strengthen the training of students' balance ability and prevent possible injuries. The balance ability of young people in sports mainly comes from acquired training, such as gymnastics training, martial arts, etc., can effectively help young people improve their balance ability, and good balance ability will also have a certain impact on the daily life of young people, so that their standing , Li, and Xing all have a relatively graceful posture. In summary, through certain gymnastics training, it can help young people to improve their balance ability to a certain extent, and prevent young people from being injured in sports.

4. The Influence of Gymnastics Training on the Balance Ability of Young People

Balance ability can ensure that teenagers minimize the chance of injury during exercise, and can help teenagers maintain and stabilize standardized movements in gymnastics training. Our common adolescents with graceful posture and excellent balance ability must be acquired through exercise. This effect. In order to fully exercise the balance ability of young people, it is necessary to create an opposite environment, allowing young people to adapt to the environment with their own reactions, and achieve the effect of exercising their balance ability. For example, gymnastics training is a good way to exercise the balance ability of young people. When young people are doing gymnastics training, they need to keep their bodies as balanced as possible on the one hand, and on the other hand they need to exercise their own strength to support their bodies. Weight and force during exercise. Gymnastics training for teenagers is not only to exercise their balance ability, but also to improve their physical strength and stability. For example, the most common horizontal and parallel bars require teenagers to have sufficient upper limb strength to support their entire body during exercise. The force received is something other sports cannot have at the same time.

Before the experiment, the static balance ability test showed that there were no significant differences between the experimental group and the control group for the 7 test indicators of the right foot with eyes open, the left foot with eyes open, the right foot with eyes closed, and the left foot with eyes closed. Static balance test after the end of 18-week aerobics training: In the before and after comparison of the experimental group, there are 2 very significant differences among the 7 test indicators in the state of the right foot with eyes open, and 4 with significant differences , There is 1 item with no significant difference; 2 items with very significant difference among the 7 test indicators in the state of left foot eye open, 3 items with significant difference, and 2 items with no significant difference; Among the 7 test indicators with the right foot closed, 5 have very significant differences, 1 with a significant difference, and 1 with no significant difference; 7 tests with the left foot closed with eyes Refers to 4 items with very significant differences and 3 items with significant differences. In the self-comparison of the control group after the experiment, there were no

significant differences in the 7 test indicators under the state of right foot with eyes open, left foot with eyes open, right foot with eyes closed, and left foot with eyes closed. Comparing the experimental group and the control group, there are 2 items with very significant differences in the data obtained with the right foot with eyes open, 4 items with significant differences, and 1 item with no significant difference; 7 items with the left foot open eyes. There are 4 test indicators with very significant differences, 2 with significant differences, and 1 with no significant differences; among the 7 test indicators with the right foot closed eyes, there are 7 test indicators with very significant differences There are 4 items, and 3 items have significant differences; among the 7 test indicators with the left foot closed eyes, there are 1 item with very significant difference, and 6 items with significant difference. From the results of the one-foot test, whether the experimental group compares its own changes or the second comparison with the control group, the changes of 7 indicators are different. Some indicators show very significant differences, and some indicators do not. There is a significant difference, but we can still see from the data obtained that the average and standard deviation are significantly reduced compared to before. The reason for this may be that the practice time is too short and the competitive aerobics exercise takes a long time. Only by practicing in order to control one's own movements more clearly and precisely in consciousness. Generally speaking, the maintenance of human balance ability mainly depends on the central nervous system's proper adjustment of vision, proprioception, etc., and on this basis, the purpose of coordinated operation is achieved. Balance ability is closely related to the exercise ability of trunk muscles and lower limb muscles. . Many movements of competitive aerobics require single foot support to complete during the exercise, and in the entire competitive aerobics exercise, the practitioner must maintain the state of standing ankles. From the point of view of the characteristics of competitive aerobics, competitive aerobics is a kind of fast-strength exercise that can make the whole body muscles fully exercised. Especially when completing the difficult vertical turns in Group D, there are high requirements for the finisher's trunk control, lower limb strength, and the vertical angle between the trunk and the ground. Therefore, competitive aerobics can improve the body's static balance ability.

5. Conclusion

The balance ability of adolescents directly affects their athletic ability, and sports injuries will cause a certain degree of psychological trauma to adolescents to a large extent, and seriously affect the physical and mental health of adolescents. Injuries to young people during exercise have frustrated their enthusiasm for exercise, so we need to take certain measures to strengthen the training of young people's balance ability and minimize the chance of them being injured during exercise. Especially for those young people who are injured in sports due to poor balance ability, we should focus on strengthening the training of their balance ability, and quickly cultivate their balance ability through certain gymnastics training, and try to eliminate the safety hazards of their sports injury. They can thrive in a happier and safer environment.

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