

57 About the physical quality training of speciality of table tennis

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1 Introduction

The competition of table tennis is more and more intense, so the demands for the physical quality of specialty are higher. This article studies by information the basis of physical quality training of specialty of table tennis and the special degree of training method. It also studies the control for the sport load.

2 To decide what the content of physical quality of table tennis specialty depends on

2.1 According to the features of table tennis players' energetic supersession

A German expert pointed out in a research of energetic supersession of table tennis players: the sports of table tennis are a kind of enduring load in which the strength is relatively low on average. As the increase of continuing time of load, the proportion of fat – supplying energy on which players depend is higher. That the total strength of loading in the sport of table tennis is relatively low is not because of the short time of loading, but because constant change of high – intensity load. Japanese expert's research on the characteristics of competing time and space and the body's physiological burden of excellent players shows the physiological burden equal to 71 ~ 68 maximum from the perspective of the rhythm of the heart. And we predict that the physiological burden can be higher against each other, we can see the performance of male players is an oxygen – free supersession of energy of intensive movement which happens in a matter of seconds. This also includes the long – time repetitive movements of endurance involving transient breaks like picking up the balls. A research on some skillful movements and the energy consumed in one round shows that table tennis is mainly a with – oxygen supersession sports of middle intensity. According to the features of energy supersession of table tennis games, lower or middle intensity exercises and short – time high – intensity exercises should be chosen as training content. Moreover, these contents should be displayed in the arrangements of the intensity and quantity

of exercises and the combination of different exercises.

2.2 From the perspective of the features of table tennis games

One research carried out by Beijing institute on physics research reveals that a table tennis player should develop his quality of speed and quickness in the first place. The reason is that during the game, judgment – reaction – start – moves – swing the arm all demand high speed. This in turn requires excellent special quality of speed and quickness. Special exercises on strength help improve the intensity of exciting and restraining of the nerve system which can help develop special quality of speed. Next, develop corresponding special quality of endurance. It has both practical and theoretical reasons. In practice, the game formally last 7 ~ 8 days, and as the end of the game approaches, it grows more intensive, demanding high quality of endurance. In theory, the quality of endurance required in the game of table tennis is a specialized endurance that involves frequent conversion of intensity that is closely related to speed and quickness.

2.3 The characteristics of table tennis's main technical movements

Technical movements mainly include: forehanded technical movements—pull, drive, raise, etc; backhanded technical movements—pull, drive, dash, push, and various methods of moving steps, which fit in the technical movements. To well accomplish these technical movements, one must process considerable specialized speed, sensitivity, strength, and stamina. One must make a point of selecting the specialized training which has similar movements structure and form of muscle's using force so that specialized speed and strength can truly meet with each technical movement's requirements. Muscle's using force begins with a near point of human body's centre of gravity and end with a distant one. Only in this way can the specialized quality exercise develop its full effect and at the same time efficiently force the technical improvements.

3 Methods of table tennis's specialized physical quality training

During the process of applying these methods, the first problem should be solved is that how to make so many complex methods into an ordered, clearly pertinent exercise system which both conforms to principles of table tennis's specialized physical quality training and table tennis's practical case. Under the precondition of defining the three aspects of specialized physical training, former practice methods can be classified according to technical movements' anatomy, physiology and technical movements themselves. Meanwhile, spe-

cialized degrees of different contents of the same quality practice method can be distinguished. When distinguishing specialized training degrees, concepts of specialized basic physical quality and specialized physical quality are applied. Specialized basic physical quality training refers to that it can closely connected with special needs of specialized physical quality and offer direct help to improve training level. While specialized physical quality is a professional quality practice composed by table tennis's technical movements strategic requirements. Specialized physical quality training methods can be divided according to the two different concepts.

4 Control of exercise load

4.1 Exercise load specialization

It means that the load must correspond with requirements of the game which is suitable for the player with regard to his level. Research results and experience of table tennis's specialized physical quality training show us that during the training process, the method of alternating with rest – medium load – transient intensified load can be adopted.

4.2 Exercise intensity

Exercise intensity determines the nature of energy supply. By means of changing exercise intensity, ways of supplying energy would be changed. In table tennis's specialized physical training, heart rates can decide which system of supplying energy would be affected.

4.3 Lasting period

In order to improve ability, players can adopt limit intensity practice method. To improve it, time for practicing can last for ever several hours. That is to say, during the training of table tennis's specialized physical quality, some technical practice methods or whole training classes themselves in fact can be arranged as specialized physical quality in the light of exercise load.

4.4 Time for rest

In table tennis's specialized physical training, usually, the time for rest is decided by heart rates. Heart rate rises to the highest when work ability is the lowest. As a rule, recovery of work ability goes hand in hand with the recovery of heart rate. By changing the time for rest, players can develop specialized physical quality of different tasks.

Influence to training effect producing by different time for rest within 45 seconds (Table 1).

Table 1. Time for rest

Time for rest	Heart rate	Training effect
Shortened	80 ~ 96	mainly develop specialized stamina
Insufficient	88 ~ 96	develop specialized stamina as well as speed
Sufficient	88 ~ 96	mainly develop speed
Prolonged	92 ~ 96	mainly develop speed

5 Conclusions

(1) Defining the content of table tennis's specialized physical quality training involves three aspects of specialized quality, including the characteristics of energy supply, the role or position each quality takes and specialized methods of quality exercise. They work as theoretical guidance for distinguishing and controlling degrees of specialization of training methods.

(2) The purpose of distinguishing degrees of exercise methods' specialization lies in clarifying types of exercise methods and classifying by both the concept of specialized basic physical quality training and specialized physical training so that players can efficiently select in practice.

(3) To control load of exercise methods is to master them scientifically and effectively during training process. Only by correctly controlling exercise load can different specialized physical quality training function well.