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The Comprehensive Review of Physical Training of Chinese Ice Hockey Players

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Objective Research purpose: This research aims at giving an comprehensive summary of the current situation of physical training of Chinese ice hockey team and helps to grasping the key points of their physical training, innovating the specific training methods, and improving the competitive performance of sports teams.

Methods Research methods: "Literature research" is the main method of this research. The authors have consulted CNKI, WWW, Wiper net, Knowledge Base of Sports Resources, EBSCO host and some other databases and analyzed 45 valuable articles in total.

Results Research result: The research results can be analyzed from three aspects--physical stamina requirement of players, training theories or methods, and physical fitness evaluation of players.

1 Physical stamina requirement of players

Ice hockey is an aperiodic sport with a repeated alternately of high, medium and low intensity, which is characterized by intermittent high intensity exercise and high antagonism. The sports' mode is 70:2:30, which means players have 70 seconds to play and two minutes to rest each time, and the whole match will take 30 minutes. The blood urea, creatine kinase and serum testosterone of players will significantly change after the competition. Most of their heart rate will be above 70 percent of the maximum rate and some athletes' blood lactic acid value will reach to 17.1 mmol / L. Therefore physical stamina training is necessary for them.

2 Training theories or methods

2.1 Characteristics of physical training load and periodicity

Athletes' physical training presents periodic changes. Specifically, their competitive state presents a pattern of formation, maintenance and temporarily fading with the change of training load.

According to the theory of cycle and the principle of competitive sports training, some domestic researchers have established an annual cyclical training structure for the national women hockey team, and have achieved ideal results in practice. The annual cyclical training structure consists of 5 levels, 3 periods, 7 phases, 9 middle cycles and several different types of small cycles. In preparation for the 21st Vancouver Winter Olympics, the national women hockey team have accepted 482.5 hours physical training, accounting for 47 percent of the total training volume.

2.2 Strength quality

The special strength of ice hockey consists of maximum strength, speed strength and endurance strength. Both land and ice strength training are included, which have their own advantages and disadvantages. During the preparation period, Canadian fast strength training method, which is a kind of land strength training, can be used in general strength training stage, and the combination of land and ice training methods can be adopted in special strength training stage. And the method of simulating competition scene with the combination of special tactics is usually needed for the purpose of developing special strength. Step compression, impact exercise, waist load and skate weighting can effectively enhance the special strength while hooting strength requires special training methods.

2.3 Speed quality

The speed of ice hockey include "simple and complex reaction speed", "thinking process speed", "starting speed", "paragraph speed", "fast braking of action", "fast completion of technical action and

convergence speed of action". Therefore speed training should strictly control the training mode, frequency, interval time, and the stability of speed and the mechanism of energy metabolism system should be considered firstly. The usually methods are: repeated training, speed changing training, race and game training.

2.4 Endurance quality

The endurance quality of hockey athletes consists of general endurance and special endurance quality. The general endurance training mainly needs aerobic methods, while the specific endurance training includes aerobic and anaerobic mixed training, anaerobic phosphate training and anaerobic glycolysis training. Endurance training is carried out at all stages of the season and both ice training and land training are needed. Methods of developing general endurance include uniform running, intermittent running, fartleke running, swimming and ball games.

3 Assessment and diagnostic methods of ice hockey player

The physical fitness of athletes is mainly monitored by testing method, which mainly tests general physical fitness and special physical fitness, and such tests are carried out at different stages. There are also researchers on the physical characteristics of athletes in aspects of the body shape, function and quality .

Conclusions Research conclusion: The purpose of ice hockey physical training is to improve sports performance, enhance energy supply ability of metabolic system, and reduce injury. Such training should accord with its special characteristics and adopt the periodic training structure arrangement. And also should focus on the strength, speed, endurance, reasonable proportion of training arrangement on ice and land. The current physical fitness evaluation which includes general and special physical fitness still needs further study.