

FUNCTIONAL ABILITIES OF ATHLETES BELONGING TO YOUNGER AGE CATEGORIES IN THE PREPARATORY PERIOD

Professional paper

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Abstract

Conditional training, especially its part oriented to building up the functions of transport (cardio respiratory) system, can provide a high level of functional abilities. In the preparatory period it is important to implement basic and special physical preparation. Basic preparation is directed towards improvement of functional topological body regions. Special preparation aims to provide adapting different body functions to specific sport structures.

Keywords: *training lessons, training cycle, training intensity, physiological burden, anaerobic training, aerobic training,*

INTRODUCTION

The conditional training, especially its part oriented toward building up the functions of transport (cardio respiratory) system, can provide a high level of functional abilities. The structure of functional training is consisted of aerobic and anaerobic type of burdens which cover the efficiency of energy mechanisms.

Aerobic and anaerobic energy processes entirely define a functional potential of a sportsman. It is possible to describe each sport branch by the dominance of certain energy mechanisms, which indicates that aerobic and anaerobic or mixed energy mechanism can prevail in certain intervals of sport activity in accordance with biomechanical parameters, tempo and total volume of different forms of movement.

Anaerobic alactic processes are dominant in basketball, i.e. energy mechanisms of phosphogenic character, while anaerobic lactic and aerobic energy processes are of less significance. Aerobic energy processes are dominant in ski running and long distance running, while demands for anaerobic efficiency are considerably lower. Some swimming disciplines (400 m) and of athletics (1500 m) have such character that demand equal functioning level of all energy processes.

Burden in an annual training cycle

Four types of closely connected burdens during an annual training cycle can be classified:

1. Physiological burden,
2. Intellectual burden,
3. Emotional burden,
4. Voluntary burden.

It is obvious from the chart's curve that the Burden is

gradually growing in the preparatory period reaching the highest pick two weeks before the competition. When entering the competition phase it is decreasing which represents the stabilization of strength and capability for the competition phase. Throughout competition phase, the training intensity is maintained on the same level with fewer fluctuations, while in the transitional period it declines.

Two types of training cycles are the most often types during a calendar year. The first preparatory period is characterized by a bit steeper burden curve than it is shown in the abovementioned chart. The transitional and preparatory period of the second training cycle are brought together, but the training intensity can fall down to the burden level same as the level during the first preparatory period, which is the half – 50% of the biggest burden. Thus, entering of pre/competition phase can start with brisk training which will be adequate to that one from the previous training cycle.

The transitional period of the second training cycle is longer than the first one and the body relief from the strain, i.e. the burden is the minimal.

During a year, trainings can differ by their duration. Thus the longest trainings are combined in the elementary period. Likewise, the relation of particular training lessons in different periods can be different. The introductory-preparatory part of the training lesson is the longest in the preparatory period, whereas the elementary part of the lesson is the longest in the elementary period (Table 1).

Some disciplines deviate from this Table that is why this Table serves as an overview. This table represents one cycle in a year, i.e. when the period between the

Table 1. Periods of training

Periods and phases of an annual training cycle	Preparatory period		Basic period		Transitional period	
	I preparatory phase	II preparatory phase	Pre-competition phase	Competition phase	Transitional phase	Phase of active resting
Middle training intensity in phases	30-50%	50-70%	90-120% 75-100%	75-100%	70%	50-30%

two competitions is around 5 months. However, if there are two elementary periods in a year, than the period between two competitions is much shorter (3 months). In this case, the training intensity between two competition periods must not be less than 50-70%. In the opposite case it will be difficult to bring back the shape within a short period of time.

Anaerobic training regime

The motor activities have been intensified more and more in sport which increases the requests for body capability to train in hypoxic conditions. Fatigue under these circumstances depends on the speed which exhausts anaerobic energy resources as well as on the decreased efficiency of the nervous system structure.

Methodological plan for the improvement of alactic component of the anaerobic endurance is determined by the duration of creatine phosphate reaction and by the time needed for alactic oxygen debt. Proper training activities are: short sprints, a series of pop-ups and specific exercises of high intensity and no longer than 30 seconds.

An adequate training method is a method of maximal interval training which causes turbulent physiological reactions resulting in heart frequencies up to 190 beats per minute. It is useful to have 4-5 repeats. A break between training repeats lasts 3 minutes, between series of 7-10 minutes.

Development of lactic component of anaerobic endurance is based on causing strong glycolytic reaction and the use of energy from the anaerobic glycolytic connections. The most suitable type of training method in this case is also interval training method. Useful training activities are running the distances of 200-600 m, running hurdles and specific exercises of 2 minutes. The burden intensity is in the interval of 80 to 90%, and it causes the highest values of physiological reactions of heart rates up and more than 200 beats per minute.

Training activities are carried out in 3 to 4 series, with 3-4 repeats of training interval in a series.

Prolonged passive breaks, i.e. pauses are used because of the need of retaining and ability of tolerating larger amount of lactates in blood.

Aerobic training regime

Development of aerobic abilities of a sportsman is carried out in conditions of sufficient oxygen amount and with predominance of oxygen energy processes that enable continuous compensation of the energy used by

oxygen transport to the periphery of the locomotor apparatus.

Continuous method of aerobic training is useful for development of long-term endurance. Training activity is continuous, undisrupted, and it can last more than 60 minutes with the intensity of 60% and with the heart frequencies of around 150-160 heart beats per minute, which is defined by anaerobic threshold, respectively by functional value through which anaerobic energy process dominate. The interval method of aerobic training consists of repeats of strong training short-term or long-term burdens being a strong stimulant for activating transport system

Proper training activities for this type of aerobic training are running different distances, running with tempo changing and situational exercises of appropriate intensity. The intensity of 60-80% is recommended with the heart frequency of 150-180 heart beats per minute. The resting interval between training burdens is relatively short, up to 2 minutes, and the number of repeats is determined by individual ability of a sportsman that can enable stable and high oxygen consumption.

CONCLUSION

In the preparatory period it is important to implement basic and special physical preparation.

Basic preparation is directed towards improvement of functioning all topological body regions, increasing efficiency of all organs and systems, increasing their functional abilities, increasing coordination abilities, as well as strength, speed, endurance and mobility. This type of physical preparation should enable strength of all body parts as to protect muscles and ligaments from the injuries. Selecting group of exercises should be in accordance with the individual abilities of a sportsman as to control the external burden.

Special preparation aims to provide adapting different body functions to specific sport structures by the means of group of exercises similar to those structures of moving, i.e. to sport technique. Its use improves the abilities and characteristics which are the most responsible for sport success and which manifest in performing techniques and tactics appearing in competition conditions.

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