

DEVELOPMENT OF SPECIFIC MOTOR SKILLS AND ABILITIES IN ATHLETICS

Professional paper

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Abstract

This study includes particular athletic disciplines. The study represents one of the models of importance of progressive development of athletic motor skills. Bearing in mind that athletics itself, as well as motor skills, is necessary for any criteria, both in everyday life as well as in sports. The aim of the study is to establish to what extent athletic motions contribute to development of athletes. One of the problems of the study is finding the adequate literature for successful analysis of results of skills and knowledge in athletics. Some of the models of mobility development, which contribute to development of mobility to large extent, are listed in the study. In the basis of endurance is maintenance of the same level of appropriate tempo of tiredness. A lot of athletes practice hard but they often neglect the necessary activities during the period of recovery. In the athletics, special attention is dedicated to the overall development of a young person. Motor skills and motor abilities develop concurrently and systematically because athletic skills and abilities, whose development athletic operators act on, are the foundation for upgrading of a large number of motor skills and abilities significant for success in other activities. That is why it is difficult to qualify thoroughly athletic skills and abilities, for example running, as specific since that activity is basic in other sports. Numerous scientific research surveys on different athletic populations show that success in athletic disciplines generally depends on speed, strength, endurance, flexibility and fitness. In the last two decades training theoreticians left the idea of a training on large distances. It is generally thought that huge training load should not be applied with young runners.

Keywords: *athletics, motor programmes, motor speed, motor strength, motor endurance, motor flexibility, motor coordination, aerobic endurance, anaerobic endurance*

INTRODUCTION

The aim of the study was to establish the relation of athletic movements on mobility of sports people, that is, in which way athletic movements can contribute to mobility. The task of the study was finding the literature necessary for completing this study.

In the athletics, a special attention is dedicated to the overall development of a young person. Motor skills and motor abilities develop concurrently and systematically because athletic skills and abilities, whose development athletic operators act on, are the foundation for upgrading of a large number of motor skills and abilities significant for success in other activities. That is why it is difficult to qualify thoroughly athletic skills and abilities, for example running, as specific since that activity is basic in other sports. However, when it comes to specialization in athletic sport, training some of the running disciplines becomes specialized athletic training, and at that moment the development of specific abilities begins.

DISCUSSION

It is generally accepted that the natural forms of movement involve the following motor programmes (biotic motor skills)

- motor programmes for mastering space
- motor programmes for mastering obstacles
- motor programmes for mastering resistance
- motor programmes for manipulating objects, and a large number of these structures of movement are found in athletics.

Numerous scientific research surveys on different athletic populations show that the success in athletic disciplines generally depends on speed, strength, endurance, flexibility and motor coordination.

A huge number of kinesiological operators are applied for development of speed, so that different authors suggest very similar operators. Basically, they are different forms of sprint.

In its essence that the endurance is keeping the appropriate tempo of activity and the delay of extreme tiredness.

The aim of a training of, for example middle and long distance runners is increase of anaerobic threshold so that they can run longer

and faster in aerobic conditions.

Aerobic endurance can be improved in two ways:

- by increasing the oxygen intake so that the ability of assimilation, transport and consumption of oxygen is increased;
- by increasing the anaerobic threshold in order to run faster without entering anaerobic zone.

Anaerobic endurance can also be improved in two ways:

- by improving the ability of high level of lactic acid tolerance;
- by improving anaerobic capacity of cells by increasing quantity of energy in ATP muscle cells.

In the last two decades training theoreticians left the idea of a training on large distances. It is generally thought that huge training load should not be applied with young runners. The best training for juniors is aerobic training on short distances and with a number of speed trainings, whereas the anaerobic training should be limited. Older juniors should reach middle aerobic basis and a basic level of general abilities with moderate number of competitions. Young seniors can get specialized by more intensive trainings and larger number of competitions.

Nervous system has a decisive role in quality and quantity of body movements, especially in development of flexibility. It acts through series of complex interactions, such as extension reflex (also called myostatic stretch reflex) and inverse myostatic stretch reflex (autogenic inhibition). Sensory organs, which are called proprioceptors, are also involved in making movements when precise movements are required (this is also true for very simple movements such as walking or raising a glass). Proprioceptors are located in muscles, tendons and joints, and they are especially stimulated when a muscle is exposed to extension. Proprioceptors for extension are in interaction with nervous system by sending electrical signals and signals about changes of muscle length, speed and extension power. Proprioceptors for extension are neuromuscular spindle and the Golgi tendon organ.

Basic function of stretching is reflected in increase of the amplitude of movement, and the secondary functions are: decrease of

muscular tension, that is relaxation, prevention of injuries (strain of muscles, tendons and ligaments occurs when abrupt stretching of unprepared muscles happens) and improvement of circulation. The aim of stretching exercises is for a muscle to reassume the length it had in the state of rest and separation of actin and myosin. The sooner a muscle reaches its anatomic length, the sooner its recovery and regeneration process will begin by eliminating products of metabolism amassed during the activities. After each series of exercises, stretching exercises of activated muscle groups should be applied. During the period of recovery it is also important to stretch. Some activities lead to much faster recovery of tired muscles, thus a skilful choice of appropriate and the most efficient activity should be made. Local tiredness of muscles as a signal is transmitted to CNS via sensory nerves. As a result, brain sends an inhibitory signal to tired muscles to decrease their performance during the rest of activity. It guarantees rest and muscle recovery, as well as filling energy sources, when it is the right time for stretching.

There are four methods of muscle stretching: static, dynamic, ballistic and proprioceptive neuromuscular facilitation (Alter, 1996).

Static muscle stretching consists of keeping the appropriate amplitude of movement at the level of pain from 5-10 to 25-30 seconds. This method consists of two variants: static-active stretching and static-passive stretching.

Dynamic muscle stretching is realized by increase of stretchability of particular muscular groups when particular body parts move to their ultimate amplitudes – for example, doing stiff movements in shoulder joint.

During dynamic stretching, body parts move by gradual amplitude increase, increase of speed of movement or both at the same time. Dynamic stretching should not be confused with ballistic stretching. Dynamic stretching consists of controlled slow movements of limbs up to the limits of their natural range of motion, whereas the aim of ballistic stretching pushes a particular body part beyond its natural range of motion.

Stretching should be performed in series of 8-12 repetitions. One should be cautious during this kind of stretching and stop when tiredness of a muscle occurs, because tired muscles at that moment have lower elasticity causing lower amplitude of motion in a particular joint. At the moment when maximum amplitude of motion in a joint in all directions is reached, stretching should be stopped. Tired and stressed muscles will not reach their full amplitude of motion, what will be remembered by kinesthetic memory of muscles and any further progress will be disabled.

Then, relaxation of muscles follows for 20 seconds before the beginning of the following phase. Recovery is a general term used to describe adaptation to stress an athlete was exposed to during training or a competition. During the recovery phase, there is a positive reaction of a body to training stimuli leading to adaptation of a body to them. Such adaptation can be physical or psychical. Insufficient recovery from trainings and competitions and inability to adapt to the stressors, inevitably leads to tiredness and overtraining. Need for the appropriate recovery, during and after the training, is significant for successful increase of the level of fitness. In sports trainings, a wide range of recovery methods is used to achieve this balance. Until recently, the talent was the only recipe for success in sports, but today, in order to be the best, athletes have to train harder, to take extreme physical and mental efforts and to be able to adapt to such a rigorous way of training.

As a consequence of training and competitions, there is decrease of ability of athletes which can be temporary and last for a minute

or an hour after the training and a competition, or it can last for a longer period of time, even for a few days. Inadequate recovery can result in inability of an athlete to train with right intensity, and it can also increase predispositions for injuries, very often microtraumas of musculoskeletal system.

CONCLUSION

The best time for stretching is right after the training, after “cooling” but while muscles are still warm. The aim of stretching during the recovery is not development of flexibility but to relax the activated muscles by stretching and allow them to reach the length they had before the exercises. Stretching also facilitates the circulation of blood through muscles in order to eliminate harmful products of metabolism and reduce muscular tension caused by a particular activity.

A lot of athletes train hard but they often neglect activities during the period of recovery. The principle of recovery represents one of the basic training principles, but it is also the most often forgotten principle by athletes and trainers.

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