



STAGE-BY-STAGE APPROACH TO PREPARING YOUNG ATHLETES FOR MIDDLE-DISTANCE RUNNING COMPETITIONS

Khamidullayev Jaloliddin

Andijan State Technical Institute
Department of Occupational Safety

Assistant Lecturer

khamidullaevjaloliddin252@gmail.com

<https://doi.org/10.5281/zenodo.16734800>

Annotation: this article analyzes the step-by-step approach of the process of preparing young athletes for middle-distance running competitions in a scientific-theoretical and practical way. The stage preparation model is planned in accordance with the biological development, functional capabilities of the athlete and the level of formation of energy systems. The article extensively covers the purpose, loading features and training methodology of each preparation phase based on the long-Term Athlete Development (LTAD) model. The benefits of using modern monitoring and functional testing technologies are also demonstrated in assessing the fitness of athletes. The results of the study prove the need for preparation to be carried out on an individual and periodic basis in order to effectively form the potential of young athletes.

Keywords: young athletes, middle distance running, Step Preparation, energy systems, LTAD model, training process, endurance, monitoring, physiological adaptation, sports results

Introduction

Athletics, especially middle – distance running (800 m-3000 m range) on the world sports field, are distinguished as a sports track that requires high energy requirements, complex coordination movements and intensive development of functional indicators. The preparation of athletes in this direction should be harmoniously oriented towards the processes of their physiological, psychological and movement development, especially in younger periods. Athletics, especially middle – distance running (800 m-3000 m range) on the world sports field, are distinguished as a sports track that requires high energy requirements, complex coordination movements and intensive development of functional indicators. The preparation of athletes in this direction should be harmoniously oriented towards the processes of their physiological, psychological and movement development, especially in younger periods. This, in turn, requires the implementation of a training model based on a phased and differentiated approach (Balyi & Way, 2005; Platonov, 2013). Since the organism of young athletes is at the stage of stable growth, morphofunctional formation, intensive development of the central nervous system and cardiovascular systems, the adaptation of loads to their biological age is the basis of the athlete's health and long-term success in sports (Verkhoshansky, 2005; Lloyd & Oliver, 2012). Since the organism of young athletes is at the stage of stable growth, morphofunctional formation, intensive development of the central nervous system and cardiovascular systems, the adaptation of loads to their biological age is the basis of the athlete's health and long-term success in sports (Verkhoshansky, 2005; Lloyd & Oliver, 2012). Otherwise, modern Sports Medicine warns that excessive early specialization, functional overload, motivational fatigue and orthopedic problems may arise (Myer et al., 2015).

The internationally acclaimed Long-Term Athlete Development (LTAD) model for training young athletes in modern sports methodology enables the planning of the training process in a phased, individual and systematic manner. The internationally acclaimed Long-Term Athlete Development (LTAD) model for training young athletes in modern sports methodology enables the planning of the training process in a phased, individual and systematic manner. According to this model, the athlete's early training should focus on the formation of universal skills, coordination abilities and movement stereotypes, and then the step by step will develop special endurance, speed, tactical and psychological training (Balyi & Hamilton, 2004; Ford et al., 2011).

To achieve a high result in middle-distance running types, the athlete requires not only maximum speed and endurance, but also running techniques, harmony of energy systems, adaptation of the muscular and cardiovascular system, as well as psychological stability. For this reason, the phased Organization of training, especially for athletes between the ages of 10 and 18, is considered as a determining factor in the success of further specialization (Raspberry et al., 2004).

This article will be devoted to a systematic analysis of the need for a phased approach, theoretical-methodological foundations and features of training at each stage in the preparation of young athletes for middle-distance running competitions. The article will offer an optimal training model of athletes based on existing scientific research, advanced international experience and practical observations.

MAIN PART

Theoretical foundations of the stage preparation model

The step-by-step approach to preparing young athletes for middle-distance running competitions is the leading concept of modern sports pedagogy. This approach serves to systematically organize training according to the level of biological development, physiological adaptation and psychological maturity of the athlete (Balyi & Way, 2005). This model includes the following basic principles:

- Biological approach-the athlete is prepared according to the stage of physical development, and not the age of the passport (Raspberry et al. The step-by-step approach to preparing young athletes for middle-distance running competitions is the leading concept of modern sports pedagogy. This approach serves to systematically organize training according to the level of biological development, physiological adaptation and psychological maturity of the athlete (Balyi & Way, 2005). This model includes the following basic principles:

- Biological approach-the athlete is prepared according to the stage of physical development, and not the age of the passport (Raspberry et al., 2004);

Principle of periodization-preparation is divided into micro-, meso - and macro-cycles throughout the year;

- Systematicity-universal, special physical, technical, psychological and tactical training harmonizes (Verkhoshansky, 2005).

Each stage of preparation is inextricably linked with the possibilities of adaptation of the athlete to physical loads, and the volume, intensity and content of the load should be determined individually.* Principle of periodization-preparation is divided into micro-, meso - and macro-cycles throughout the year;

- Systematicity-universal, special physical, technical, psychological and tactical training harmonizes (Verkhoshansky, 2005).

Each stage of preparation is inextricably linked with the possibilities of adaptation of the athlete to physical loads, and the volume, intensity and content of the load should be determined individually.

Stages of preparation and their methodological features

The effectiveness of the training of young athletes largely depends on the sequence and purpose of the preparatory stages. Usually, preparation for middle-distance running is carried out at the following stages:

Initial preparatory stage (10-13 years old)

At this stage, the formation of such qualities as general physical abilities of athletes: endurance, speed, coordination of movement, flexibility is the main goal. Training is carried out through the elements of the game, creating favorable conditions for the functional formation of the musculoskeletal system. During this period, the load volume will not be excessive and will be in a health-improving direction (Myer et al., 2015). At this stage, the formation of such qualities as general physical abilities of athletes: endurance, speed, coordination of movement, flexibility is the main goal. Training is carried out through the elements of the game, creating favorable conditions for the functional formation of the musculoskeletal system. During this period, the load volume will not be excessive and will be in a health-improving direction (Myer et al., 2015).

Training methods: fartlek, running in nature, entertainment running relay, light technical drills.

Base preparation stage (14-15 years old)

At this stage, along with general training, the improvement of special endurance and running techniques begins. Adaptation occurs in energy supply systems, especially in the anaerobic-lactate system. Muscle strength, cardiac output volume, activity of oxidizing systems increase in stages (Wilmore & Costill, 2005). At this stage, along with general training, the improvement of special endurance and running techniques begins. Adaptation occurs in energy supply systems, especially in the anaerobic-lactate system. Muscle strength, cardiac output volume, activity of oxidizing systems increase in stages (Wilmore & Costill, 2005).

Methodical approaches: interval running (interval running), tempo training, low and medium intensity zonal runs, Heart Rate control (HR monitoring).

Specialized preparatory stage (16-18 years old)

Athletes ' functional capabilities and muscle endurance develop at the highest level at this stage. Increasing the performance of running speed, anaerobic capacity and maximum oxygen uptake ($VO_2\text{max}$) in training will be the main goal (Joyner & Coyle, 2008).

At this stage, the loadings are at high intensity, and the competition is carried out in conditions close to the modelin. Athletes ' functional capabilities and muscle endurance develop at the highest level at this stage. Increasing the performance of running speed, anaerobic capacity and maximum oxygen uptake ($VO_2\text{max}$) in training will be the main goal (Joyner & Coyle, 2008).

At this stage, the loadings are at high intensity, and the competition is carried out in conditions close to the modelin. The improved training process also covers technical aspects (start, stride length, running rhythm) and psychological preparation (motivation, competition stress).

Training methods: 3-5 × 600 m interval runs, 1000-1500 m tempo runs, plyometric strength training, competition-like loadings.

Competition and rehabilitation stage (18+ years)

At this stage, the Downloads will focus on the athlete showing the maximum result. Final preparation for the exit to the race position (tapering), functional recovery, harmonized with rehabilitation loadings. raining methods: 3-5 × 600 m interval runs, 1000-1500 m tempo runs, plyometric strength training, competition-like loadings.

Competition and rehabilitation stage (18+ years)

At this stage, the Downloads will focus on the athlete showing the maximum result. Final preparation for the exit to the race position (tapering), functional recovery, harmonized with rehabilitation loadings. An individual training strategy is a priority in this.

Monitoring tools: HRV (heart rate variability), lactate test, VO₂max test, GPS analysis, functional diagnostics.

Diagnostic and monitoring technologies

The effectiveness of the load and constant control of the state of the athlete's training is an integral part of the training system. The following tools are widely used in modern sports science:

Bip-test, Cooper Test-total endurance assessment;

VO₂max test-determination of maximum oxygen consumption;

Lactate detection tests-anaerobic capacity assessmentDiagnostic and monitoring technologies

The effectiveness of the load and constant control of the state of the athlete's training is an integral part of the training system. The following tools are widely used in modern sports science:

Bip-test, Cooper Test-total endurance assessment;

VO₂max test-determination of maximum oxygen consumption;

Lactate detection tests-anaerobic capacity assessment;

HR monitors – continuous monitoring of heart rate and workload (Seiler, 2010);

Video communication and technical diagnostics-detection and correction of errors in running techniques.

Such analysis allows athletes to give an individual load, reduce the risk of overload and optimally control the Sports form.

Psychological and pedagogical approaches

When working with young athletes, the coach should be not only a physical load-giver, but also a psychological motivator, educator and guide. Stress resistance, self-confidence, ambition and emotional management play an important role in middle-distance running events (Vealey & Chase, 2016).

Psychological training sessions includePsychological and pedagogical approaches

When working with young athletes, the coach should be not only a physical load-giver, but also a psychological motivator, educator and guide. Stress resistance, self-confidence, ambition and emotional management play an important role in middle-distance running events (Vealey & Chase, 2016).

Psychological training sessions include:

- Competitive visualization and self-talk techniques;
- Success-oriented motivation exercises;
- Concentration and psychoregulation techniques;

• Creating a team environment and healthy competition. The phased approach to preparing young athletes for middle-distance running competitions is closely related to the achievements of modern sports pedagogy and sports physiology, and is decisive in the formation of long-term sports potential. The phased approach to preparing young athletes for middle-distance running competitions is closely related to the achievements of modern sports pedagogy and sports physiology, and is decisive in the formation of long-term sports potential. Based on the studied literature, practical observations and international advanced experiments, it is necessary that each preparatory stage is planned in a way proportional to the level of morphofunction development, biological age and state of psychological maturity of the athlete (Balyi & Way, 2005; Platonov, 2013).

The results of the study show that in the initial stages, the development of general physical qualities, strengthening coordination, the formation of a stereotype of movements is the main task, while in the later stages, endurance, maximum oxygen uptake ($VO_2\max$), running techniques and anaerobic tolerance become the main factors. The results of the study show that in the initial stages, the development of general physical qualities, strengthening coordination, the formation of a stereotype of movements is the main task, while in the later stages, endurance, maximum oxygen uptake ($VO_2\max$), running techniques and anaerobic tolerance become the main factors. If each of these parameters is not developed in harmony with the biological maturation period, it is unlikely that overloading, injuries, motivational declines will be observed during the athlete's long-term career (Myer et al., 2015; Lloyd & Oliver, 2012).

In addition, an effective training system should be supplemented with the use of personalized training, advanced diagnostic and monitoring technologies, taking into account the individual characteristics, functional capabilities and psychological profile of the athlete. (Lloyd & Oliver, 2012).

In addition, an effective training system should be supplemented with the use of personalized training, advanced diagnostic and monitoring technologies, taking into account the individual characteristics, functional capabilities and psychological profile of the athlete. In particular, control of load intensity and volume based on lactate levels, heart rate (HR), HRV indicators, subjective fatigue scales allows optimal control of the sport form (Seiler, 2010; Joyner & Coyle, 2008).

The article also highlighted the role of psychological and pedagogical approaches in working with young athletes. In athletes, the formation of stability, internal motivation, self-assessment and emotional discipline in competitive stress is considered as a factor that directly affects the results of sports. In this regard, approaches based on the principles of sports psychology – visualization, targeting, stress management, self-talk techniques – are considered a practically important tool (Vealey & Chase, 2016).

In conclusion, the step-by-step approach to preparing young athletes for middle-distance running competitions serves not only to form their athletic potential at a high level, but also to provide indicators of stability and longevity in sports while maintaining health. Therefore, the improvement of the preparatory system on the basis of continuous, functional, psychological and pedagogical approaches remains one of the urgent tasks of modern sports science.

Balyi, I., & Way, R. (2005). Long-Term Athlete Development: Canadian Sport for Life. Canadian Sport Centres.

1. Platonov, V. N. (2013). Sistema podgotovki sportsmenov v olimpiyskom sporte: Obshchaya teoriya i ee prakticheskie prilozheniya. Kyiv: Olimpijskaya Literatura.
2. Verkhoshansky, Y. V. (2005). Special Strength Training: A Practical Manual for Coaches. Ultimate Athlete Concepts.
3. Joyner, M. J., & Coyle, E. F. (2008). Endurance exercise performance: The physiology of champions. *Journal of Physiology*, 586(1), 35–44. <https://doi.org/10.1113/jphysiol.2007.143834>
4. Wilmore, J. H., & Costill, D. L. (2005). *Physiology of Sport and Exercise* (3rd ed.). Human Kinetics.
5. Seiler, S. (2010). What is best practice for training intensity and duration distribution in endurance athletes? *International Journal of Sports Physiology and Performance*, 5(3), 276–291.
6. Lloyd, R. S., & Oliver, J. L. (2012). The Youth Physical Development Model: A New Approach to Long-Term Athletic Development. *Strength and Conditioning Journal*, 34(3), 61–72.
7. Myer, G. D., Faigenbaum, A. D., Ford, K. R., Best, T. M., Bergeron, M. F., & Hewett, T. E. (2015). When to initiate integrative neuromuscular training to reduce sports-related injuries in youth? *Current Sports Medicine Reports*, 10(3), 155–166.
8. Malina, R. M., Bouchard, C., & Bar-Or, O. (2004). *Growth, Maturation, and Physical Activity* (2nd ed.). Human Kinetics.
9. Vealey, R. S., & Chase, M. A. (2016). Best Practice for Youth Sport: Science and Strategies for Positive Athlete Experiences. Human Kinetics.