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PERIODICITY AND CYCLICITY OF MULTI-YEAR SPORTS TRAINING

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Annotation. This article examines the scientific and methodological foundations of the principles of periodicity and cyclicality in planning the long-term training process of athletes. Multi-year sports training is analyzed as a systematic process organized over an extended period, taking into account the athlete’s age, biological development, physical capabilities, technical and tactical skills, psychological preparation, competitive experience, and individual characteristics. The article discusses the stages of long-term preparation, the annual training cycle, the preparatory, competitive, and transitional periods, the interrelationship between macrocycles, mesocycles, and microcycles, and the gradual adjustment of training load volume and intensity.

Аннотация. В данной статье рассматриваются научно-методические основы принципов периодичности и цикличности при планировании многолетнего тренировочного процесса спортсменов. Многолетняя спортивная подготовка анализируется как систематический процесс, организованный в долгосрочной перспективе, с учетом возраста спортсмена, биологического развития, физических возможностей, технико-тактических навыков, психологической подготовки, соревновательного опыта и индивидуальных особенностей. В статье рассматриваются этапы многолетней подготовки, годовой тренировочный цикл, подготовительный, соревновательный и переходный периоды, взаимосвязь между макроциклами, мезоциклами и микроциклами, а также вопросы постепенного изменения объема и интенсивности тренировочных нагрузок.

Keywords: long-term preparation, sports training, periodicity, cyclicality, periodization, macrocycle, mesocycle, microcycle, sports form, training load, recovery, sports mastery, competition preparation, individualization.

Ключевые слова: многолетняя подготовка, спортивная подготовка, периодичность, цикличность, периодизация, макроцикл, мезоцикл, микроцикл, спортивная форма, тренировочная нагрузка, восстановление, спортивные навыки, подготовка к соревнованиям, индивидуализация.

Introduction. Achieving high sports performance is not the result of one or several training sessions but rather of a consistent, purposeful, and scientifically grounded preparation process organized over an extended period. An athlete’s physical, technical, tactical, psychological, and functional capabilities develop gradually. Therefore, sports training should be viewed not merely as a collection of short-term training sessions but as an integrated system consisting of interrelated long-, medium-, and short-term cycles.

The concept of periodicity, or periodization, plays an important role in planning sports training. Periodization involves the purposeful organization of the training process over time, the systematic variation of training loads, the sequencing of preparation tasks, and the development of sports form for

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a specific competitive period. In scientific literature, macrocycles, mesocycles, and microcycles are regarded as fundamental components of traditional periodization.

Long-term preparation integrates these short- and medium-term cycles into a comprehensive strategy for the athlete's long-term development. Contemporary research emphasizes the importance of viewing athlete development not within the limits of a single age period or competitive season but as a continuous process encompassing different stages of sports participation.

From this perspective, studying the periodicity and cyclicality of multi-year sports training has considerable scientific and practical significance for organizing the preparation of athletes in sports schools, higher education institutions, sports clubs, and high-performance sports programs.

1. The concept of multi-year sports training. Multi-year sports training is a system for planning and managing an athlete's development over the long term, from initial preparation to advanced sports mastery.

It ensures the integration of the following principal areas:

- General physical preparation;
- Specific physical preparation;
- Technical preparation;
- Tactical preparation;
- Psychological preparation;
- Theoretical preparation;
- Functional preparation;
- Recovery processes;
- Competitive performance;
- Monitoring and pedagogical assessment.

The main characteristic of multi-year preparation is that each stage establishes the foundation required for the subsequent stage. For example, the initial stage focuses on developing a broad range of motor skills, whereas subsequent stages emphasize specific physical qualities and sports technique. At advanced levels, the importance of specialized preparation, competition-specific performance models, tactical decision-making, and the development of optimal sports form for particular competitions increases.

There is no single universal model for dividing athlete development into stages. The content of these stages may differ depending on the sport, age group, and level of athletic development. Contemporary research also indicates that long-term athlete development models vary and must be adapted to the requirements of the sport and the individual characteristics of each athlete.

2. Main stages of long-term sports preparation. Long-term sports preparation can be conditionally divided into the following stages.

Stage 1. Initial preparation

During this stage, the main focus is on:

- Developing general motor activity;
- Developing coordination abilities;
- Establishing a basic level of speed, agility, flexibility, and endurance;
- Developing interest in the chosen sport;
- Teaching fundamental technical movements.

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At this stage, expanding motor experience and developing the athlete's general functional capabilities are more important than excessive early specialization.

Stage 2. Specialized preparation

At this stage, the athlete begins to acquire a deeper understanding of the technical and tactical requirements of the chosen sport.

The main tasks include:

- Developing specific physical qualities;
- Improving technical skills;
- Developing tactical actions;
- Gradually increasing training volume;
- Building competitive experience.

Stage 3. Development of sports mastery

At this stage, training is increasingly adapted to the athlete's individual characteristics.

The priority areas include:

- Specific strength;
- Explosive strength and speed-strength abilities;
- Speed;
- Specific endurance;
- Technical consistency;
- Tactical thinking;
- Psychological stability;
- Competitive performance efficiency.

Stage 4. Advanced sports mastery

For highly qualified athletes, the primary objective is not to maximize all physical and performance qualities simultaneously but to bring the athlete into optimal sports form for specific competitions. Training loads, recovery, competition schedules, individual responses to training, and the dynamics of sports form are monitored regularly.

3. The concept of periodicity in sports training

Periodicity is the purposeful division of sports training over time into different periods and cycles, with specific preparation objectives prioritized during each period. The fundamental principle of periodicity can be expressed as follows:

Training load → Fatigue → Recovery → Adaptation → Improvement in functional capacity → New training load.

Therefore, sports training should not consist solely of continuously increasing training loads without adequate consideration of recovery. Maintaining a balance between training load and recovery is an essential condition for successful sports preparation. Research indicates that an imbalance between training load, competitive stress, and recovery may lead to prolonged fatigue and a decline in athletic performance.

Consequently, periodization serves the following purposes:

1. Managing training loads;
2. Planning recovery;
3. Promoting physiological adaptation;
4. Developing sports form;

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5. Improving competitive readiness;
6. Reducing the risk of injury.

4. Cyclicality in sports training

Cyclicality refers to the repeated organization of specific training tasks, workloads, and recovery processes over defined periods, with each cycle being reorganized to achieve a new level of performance. The cyclic structure of sports training is generally considered at three principal levels:

Macrocycle → Mesocycle → Microcycle.

The relationship between these levels can be represented as follows:

Multi-year cycle → Annual cycle → Macrocycle → Mesocycle → Microcycle → Training session → Exercise.

Each lower-level cycle serves the objectives and tasks established at the higher level.

5. The macrocycle - a macrocycle is a major training cycle covering an extended period, often lasting several months or one year. Its primary purpose is to prepare the athlete for a specific competition or a series of competitions.

An annual macrocycle generally includes three main periods.

1. Preparatory period. During this period, the athlete's general and specific preparation is developed. In the initial part of the preparatory period, general training methods may account for a larger proportion of the workload. As the period progresses, the proportion of specialized exercises, technical and tactical training, and competition-specific activities increases.

2. Competitive period. The main objective is to maintain sports form and demonstrate it at important competitions.

During this period, particular importance is attached to:

- Competition-specific training;
- Technical and tactical improvement;
- Specific speed-strength preparation;
- Psychological preparation;
- Recovery;
- Analysis of competitive performance.

3. Transitional period. The transitional period supports active rest, functional recovery, and preparation for the next macrocycle. Training should not be stopped abruptly during this period. Instead, the workload should be reduced according to the athlete's condition. Physical activity is maintained while training volume and intensity may be decreased.

6. Content and objectives of the mesocycle

A mesocycle is a medium-term training unit that combines several microcycles. Its duration varies according to the sport, the stage of preparation, and the objectives being pursued.

The following types of mesocycles may be used in practice:

- Introductory mesocycle;
- General preparation mesocycle;
- Specific preparation mesocycle;
- Technical and tactical mesocycle;
- Pre-competition mesocycle;
- Competition mesocycle;
- Recovery mesocycle.

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For example, during a specialized preparation mesocycle for a volleyball team, jumping ability, speed-strength development, blocking, attacking, reception, setting, and court movement are planned as interrelated components. An important characteristic of the mesocycle is the internal dynamics of training loads. Loads may increase over several days and subsequently decrease. This approach helps prevent excessive fatigue accumulation.

7. The microcycle and its importance

A microcycle is a short-term training cycle that generally lasts several days, commonly around one week. Microcycles are among the principal means of organizing daily training sessions.

The main types include:

- Developmental microcycle;
- Shock or high-load microcycle;
- Recovery microcycle;
- Pre-competition microcycle;
- Competition microcycle;
- Transitional microcycle.

For example, during a developmental microcycle, training volume or intensity may be increased to a planned level. During a recovery microcycle, the primary emphasis is placed on restoring the athlete's functional capacity.

When planning a microcycle, the following factors should be considered:

- The athlete's current functional condition;
- The workload of previous training sessions;
- The date of the next competition;
- Sleep quality and recovery status;
- Training intensity;
- Exercise complexity;
- Technical performance quality;
- Individual responses to training.

8. Development of Sports Form and Periodization

Sports form is the integrated state of physical, technical, tactical, psychological, and functional preparedness that enables an athlete to achieve high performance during a specific period. The development of sports form is generally associated with three processes:

Development → Maintenance → Temporary decline and restoration.

During the preparatory period, the focus is on developing sports form. During the competitive period, the objective is to maintain it at an optimal level. During the transitional period, the emphasis shifts toward recovery. Consequently, maintaining the same training load throughout the entire year is generally inappropriate.

9. Periodization of Training Loads

In sports training, workloads are managed through several principal indicators:

- Volume;
- Intensity;
- Density;
- Duration;
- Complexity;

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- Number of repetitions;
- Rest intervals.

The variation in training loads across different periods depends on the objectives of the athlete's preparation

For example:

Period	**Training volume**	**Training intensity**	**Main objective**
General preparation	High	Moderate	Development of a functional base
Specific preparation	Moderate to high	Moderate to high	Development of specific qualities
Pre-competition	Moderate	High	Preparation under competition-specific conditions
Competition	Moderate to low	High	Demonstration of sports form
Recovery	Low	Low to moderate	Restoration and recovery

However, these ratios are not rigid standards applicable equally to all athletes. They may vary according to the sport, age, sex, qualification level, number of competitions, and individual recovery characteristics.

10. Traditional and contemporary periodization. In traditional periodization, considerable importance is attached to the sequential organization of training periods, the transition from general to specific preparation, and the progressive increase in the specificity of training methods as competitions approach.

However, in contemporary high-performance sport, athletes often participate in several major competitions during a single season. Therefore, planning only one peak of sports form within an annual cycle may not always be sufficient. The block periodization concept developed by Vladimir Issurin proposes concentrating relatively high training loads on selected preparation components and organizing them sequentially through successive mesocycles. This approach was developed as an alternative to certain limitations of traditional periodization. Nevertheless, block periodization should not be applied automatically to every sport and every athlete. Scientific literature identifies differences in the definitions of periodization and in research methodologies, making it difficult to conclude that one model is universally superior to others. Thus, the principal characteristic of contemporary periodization is its emphasis on flexible planning adapted to the athlete, the sport, and the competition calendar rather than strict adherence to a single universal scheme.

11. Multi-peak sports preparation. In contemporary sport, an athlete may participate in several major competitions during one year. Under such circumstances, sports form must be developed not for a single peak but for several important competitions.

For example:

Preparation → First peak → Recovery → Renewed preparation → Second peak → Recovery → Third peak.

In this process, recovery following each competition becomes the starting point for the next preparation phase.

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Therefore, multi-peak periodization requires particular attention to:
- The intervals between competitions;
- Recovery opportunities;
- Residual effects of training loads;
- The athlete's functional condition;
- Injury risk;
- Psychological fatigue.

12. Specific characteristics of cyclicality in different sports

Periodization is not organized identically across all sports.

In volleyball, the following components must be coordinated:
- Jumping ability;
- Speed-strength;
- Reaction speed;
- Coordination;
- Technical consistency;
- Blocking and attacking;
- Ball reception;
- Setting;
- Team tactics.

Therefore, volleyball training should not completely separate physical preparation from technical and tactical preparation. Instead, these components should be integrated under conditions that closely resemble competitive performance. In athletics, the proportions of speed, endurance, strength, and technique vary according to the event and distance. For example, the periodization of sprinters and long-distance runners cannot be identical. In swimming, training volume, intensity distribution, and periodization models vary according to the athlete's principal event distance. Systematic reviews have identified differences in training intensity distribution among swimmers competing in different distances.

Thus, the structure of the sport and the specific demands of competitive performance are fundamental criteria when planning periodization.

13. Cyclicality of technical and tactical preparation

Cyclicality in sports training applies not only to physical workloads but also to technical and tactical preparation.

For example, the following sequence can be established for a volleyball player:

Learning a technical skill → Stabilizing the skill → Performing it in movement → Performing under opposition → Applying it in game situations → Refining it in competition.

Although the periodization of technical skill development has received less research attention than physiological preparation, contemporary sports pedagogy increasingly emphasizes the purposeful periodization of skills and technical development.

Therefore, for highly qualified athletes, physical preparation and technical preparation should not be treated as entirely separate processes but as components of an integrated system.

14. Individualization as an Essential Condition of Long-Term Preparation

The same training program does not produce identical results in all athletes. Athletes differ in:
- Biological development rates;

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- Levels of preparedness;
- Functional capabilities;
- Recovery rates;
- Technical proficiency;
- Psychological characteristics;
- Injury history;
- Competitive experience.

Consequently, an individualized approach is essential in long-term sports preparation.

Individualization can be implemented through the following methods:

1. Initial assessment and diagnosis;
2. Regular pedagogical monitoring;
3. Functional testing;
4. Subjective assessment of training load using the rating of perceived exertion (RPE);
5. Analysis of technical performance efficiency;
6. Competition statistics;
7. Monitoring recovery indicators;
8. Individual adjustment of training loads.

Thus, planning should be based not on the principle of "the same program for everyone" but on the principle of a common framework combined with individual adjustments.

15. The Relationship Between Periodization and Recovery

In sports preparation, performance is determined not only by the training load itself but also by the recovery process that follows it.

Recovery includes:

- Sleep;
- Active rest;
- Nutrition;
- Maintaining fluid balance;
- Psychological relaxation;
- Muscle recovery;
- Rest intervals between training sessions.

Coordinating training loads with recovery is one of the fundamental principles of sports preparation. Scientific literature indicates that periodization helps manage the risk of excessive fatigue by organizing training loads and recovery in a planned sequence. Therefore, the assumption that "more training always leads to better results" is not fully supported scientifically. What matters is the appropriateness, quality, duration, and recovery balance of the training load.

16. Fundamental Principles of Long-Term Training Planning

The following principles should be observed when organizing long-term sports preparation.

1. Continuity. Each stage of preparation should build on the capabilities developed during the preceding stage.

2. Gradual progression. Training loads, exercise complexity, and the degree of specialization should increase progressively.

3. Individualization. The athlete's individual capabilities and characteristics must be taken into account.

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4. Specialization. As the athlete's qualification level increases, training becomes increasingly specific to the demands of the sport.

5. Variability. Training methods and workload structures should be modified when necessary.

6. Recovery. The relationship between training load and rest must be monitored.

7. Monitoring. The training process should be evaluated regularly through testing and pedagogical observation.

8. Competition orientation. Training content should increasingly reflect the actual demands of major competitions.

17. An Algorithm for Managing Long-Term Training

In practical terms, long-term training can be managed through the following sequence:

1. Defining the objective;
2. Assessing the athlete's initial condition;
3. Establishing long-term development goals;
4. Planning the stages of multi-year preparation;
5. Designing the annual macrocycle;
6. Planning mesocycles;
7. Developing microcycles;
8. Determining daily training loads;
9. Monitoring and evaluating progress;
10. Adjusting the plan according to the results. This process is not strictly linear but is based on the principle of feedback. In other words, the content of subsequent training sessions and cycles may be modified in response to monitoring results.

Conclusion

The periodicity and cyclicality of multi-year sports training are essential conditions for the scientifically grounded management of athletic preparation. High performance is achieved not simply by increasing training loads but by coordinating training load, recovery, adaptation, technical and tactical development, and competitive performance. Long-term preparation establishes the overall development strategy. The macrocycle organizes annual or major preparation objectives, the mesocycle specifies medium-term goals, and the microcycle translates these objectives into concrete weekly and daily training loads. Therefore, these cycles should not be considered independent units but interconnected components of a unified system. In contemporary sports practice, traditional periodization is used alongside block periodization, multi-peak preparation, and individualized models. However, applying any single model uniformly to all athletes and sports is not scientifically justified. The choice of periodization model should depend on the sport, the athlete's age and qualification level, the competition calendar, the level of preparedness, individual adaptation characteristics, and recovery opportunities.

Thus, the effectiveness of multi-year sports training depends on the integration of three principal factors: a long-term perspective, progressive development through training cycles, and continuous monitoring with individualized adjustments.

This approach provides the necessary methodological foundation for the consistent development of an athlete's physical and functional capabilities, the stabilization of technical and tactical proficiency, the reduction of excessive fatigue risk, and the achievement of optimal sports form at important competitions.

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http://houghtonstreetreview.com/index.php/hsr

References

1. Bompa, T. O., & Buzzichelli, C. Periodization: Theory and Methodology of Training. 6th ed. Human Kinetics, 2019.
2. Issurin, V. B. Block Periodization: Breakthrough in Sport Training. Ultimate Athlete Concepts, 2008.
3. Issurin, V. B. "Block Periodization versus Traditional Training Theory: A Review." Journal of Sports Medicine and Physical Fitness, 2008, 48(1), 65–75.
4. Issurin, V. B. "Benefits and Limitations of Block Periodized Training Approaches to Athletes' Preparation: A Review." Sports Medicine, 2016, 46(3), 329–338.
5. Mujika, I., et al. "A Framework for Understanding the Training Process Leading to Elite Performance." Sports Medicine, 2004.
6. Haff, G. G., & Triplett, N. T. Essentials of Strength Training and Conditioning. 4th ed. Human Kinetics, 2016.
7. Plisk, S. S., & Stone, M. H. "Periodization Strategies." Strength and Conditioning Journal.
8. Otte, F. W., Millar, S.-K., & Klatt, S. "Skill Training Periodization in 'Specialist' Sports Coaching—An Introduction of the 'PoST' Framework for Skill Development." Frontiers in Sports and Active Living, 2019, 1, 61.
9. Baker, J., Gayman, A., & Johnston, K. "Lifespan Models of Athlete Development: What Have We Learned from Previous Attempts?" Frontiers in Sports and Active Living, 2023, 5.
10. Döringer, F., & Pfeiffer, M. "Clarifying TID and TD in Sport: An Integrative Phase-Based Framework of Talent Assessment and Promotion." Frontiers in Psychology, 2026, 17.
11. Hellard, P., et al. "Training Intensity Distribution, Training Volume, and Periodization Models in Elite Swimmers: A Systematic Review." Sports Medicine, 2021.
12. "Long-Term Development of Training Characteristics and Performance-Determining Factors in Elite/International and World-Class Endurance Athletes: A Scoping Review." Sports Medicine, 2023.
13. "Periodization: Variation in the Definition and Discrepancies in Study Design." Sports Medicine, 2021, 51(4), 625–651.
14. Issurin, V. B. "Biological Background of Block Periodized Endurance Training: A Review." Sports Medicine, 2019, 49(3).