University of Larbi Ben M'hidi - Oum El Bouaghi

institute of Sciences and Techniques of Physical and Sports Activities...

Language of instruction: English

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Planning and programming in sports training

Directed to: first-year master's students.

Specialization : Sports Physical Training.

Course objectives :

- Basic rules and theoretical and applied knowledge related to planning and programming
- Raising the student's physical, skill and tactical level in the major
- Knowledge of theoretical approaches relevant to course and activity.
- Principles and rules of training methodology.
- Physical, functional, psychological and mental preparation for the activity practiced.

Prior knowledge required :

The student must have prior knowledge of:

- Sports training methodology as a primary basis.
- Possess a culture of biological sciences.
- Knowing the basic rules of the specialty through relevant guidelines and concepts.
- Learn about the most important theories in training and the functions of the body's organs.

Course program

The First lecture: The Biological Basis of Sports Training.

The second lecture: Fundamentals of Sports Training:

The Third Lecture : The Foundations of Sports Planning

The fourth lecture: Bioenergetic Aspects In Modern Sports Training

The Fifth Lecture: Training modeling for load planning.

The Sixth Lecture: Intensification of loads in the planning process

The First lecture: The Biological Basis of Sports Training.

I.1. Cellular Metabolism

I.1-1 Aerobic Power

I.1-2 Aerobic Capacity

I.1-3 Aerobic Threshold

I.1-4 Anaerobic Threshold

I.1-5 Anaerobic Power

I.1-6 Anaerobic Capacity

I.2. Muscle Energy Systems

I.2-1 The Anaerobic Alactic System

I.2-2 The Anaerobic Lactic System

I.2-3 The Aerobic System

I.3. Physiological Effects of Sports Activity

I.3-1 Cardiovascular Aspects

I.3-2 Effects of Submaximal Effort

I.3-3 Effects of Maximal Effort

I.3-4 Water Biology During Intense Work

I.4. Training Objectives for Different Energy Processes

PART I: THE BIOLOGICAL BASES OF SPORTS TRAINING:

Generalities and definitions:

"Sports biology and its direct extension, biological preparation, do not constitute a panacea either. It does not replace training, but on the contrary optimizes it to the extent that it contributes to making it profitable in terms of performance, by removing the empiricism of stadiums" (GARNIER AND ROUILLON, 1991).

This definition leads us to describe and explain certain concepts:

I.1. Cellular Metabolism

During intensive work, which requires a large amount of energy per unit of time, the muscle cell uses the anaerobic pathway. Creatine phosphate stores are quickly depleted, and the accumulation of lactate resulting from anaerobic glycolysis blocks intracellular metabolism. The muscle cell tries to use the aerobic pathway (oxidative phosphorylation) as much as possible, provided that the muscle fibers are sufficiently supplied with oxygen. When transitioning from rest to exercise, the supply of oxygen to the muscles is insufficient because, at rest, nearly 90% of the capillaries are closed; blood circulates mainly to other organs (HEGNER, 1990).

Physical exertion leads, among other things, to an activation of the cardiopulmonary system, an increase in oxygen transport and an opening (vasodilation) of the capillaries of the working muscles. If the intensity of the exertion is greater and despite maximum blood flow, the oxygen supply is not sufficient to cover the needs, the muscle cells are then forced to use the aerobic pathway and, thus, to degrade glucose first into pyruvate and then into lactate. These two substances have a toxic effect on muscle fibers, even in small concentrations.

Lactate, however, has the advantage of being able to leave the cell. It can be transported by the blood and used as an energy source by the heart muscle. The bloodstream also transports some of it to the liver, which converts it back into glucose. Thus, lactate can be eliminated and disappears from the body. "The more an athlete trains, the faster they can eliminate lactate and thus delay the moment when its concentration increases in the blood." (HEGNER, 1990).

I.1-1 Aerobic Power:

It is a measure of the performance a person can produce using only the aerobic pathway. It is expressed in Joules/Second = WATT, and determines how fast we can run without acidifying the blood by increasing lactate.

I.1-2 Aerobic Capacity

Depends on the quantity (volume) of cellular energy reserves and allows the athlete to withstand long-term effort. It is expressed in joules and is improved by very long-term efforts, which lead to depletion of cellular energy reserves.

I.1-3 Aerobic Threshold

It constitutes the intensity limit up to which the metabolism remains purely aerobic, the lactate values at the aerobic threshold are around 2 mmol.l-1. If the intensity of the effort is further increased, the necessary energy must be partially provided by anaerobic glycolysis.

I.1-4 Anaerobic Threshold

The anaerobic threshold is the intensity level where the amount of lactate released from the cell and its elimination rate are still just in balance (HOLLMANN/HETINGER, 1976). The lactate level at an anaerobic threshold is 4 mmol.l-1. In practice, for training and for research in sports biology, this strict definition of the anaerobic threshold is not sufficient; it must be determined individually, either:

- By measuring blood lactate levels (invasive test) during an exercise of increasing intensity, in stages;

- Or by recording heart rate during the same type of exercise, in shorter and more frequent stages (CONCONI test (1982), interval test, or on a cycloergometer).

I.1-5 Anaerobic Power

It measures the intensity of the effort that an athlete can produce using the anaerobic metabolic pathway. It is expressed in joules/second = WATT.

I.1-6 Anaerobic Capacity

This is the measure of the volume of work that can be provided by the anaerobic metabolic pathway. It depends on the amount of glycogen stores and is

limited by the athlete's tolerance to lactate. Depending on the training status, lactate values of more than 20 mmol.l-1 can be achieved and tolerated. However, at 6 to 8 mmol.l-1, coordination qualities, as well as technical and tactical abilities, begin to be disrupted (LIESEN, 1986). Training that includes efforts leading to lactate levels of more than 10 to 14 mmol.l-1 negatively influences aerobic performance. After "speed endurance" training, which can lead to lactate concentrations of more than 15 mmol.l-1 (up to 24l), the ability to learn complex movements can be impaired for 48 hours (LIESEN, 1986, cited by HEGNER, 1990). In view of these negative concomitant phenomena caused by high lactate concentrations, anaerobic capacity training must be planned very carefully.

The second lecture: Fundamentals of Sports Training:

II.1- Definitions of the Concept of Training

MARTIN (1971) defines training as a process that produces a change in physical, motor, cognitive and affective state. From the point of view of the physiology of effort, training is in general terms a permanent process of adaptation to the workload, (YAKOVLEV, 1972, cited by WEINECK, 1990, p. 39)

MOREHOUSE AND MILLER (1974, p. 156) define training as the frequent repetition of an exercise with the aim of improving power or endurance. It aims at improving physical capabilities in general, rather than the performance of a particular act.

According to ASTRAND AND RODAHL (1980, p. 297) physical training involves exposing the body to a workload of sufficient intensity, duration and frequency to determine a measurable effect, i.e. an improvement in the functions subjected to training. It is associated with a number of catabolic processes, such as the degradation of energy substrate stocks followed by an intensification of anabolic processes leading to an increase in the production of molecules used during work. If we refer to the definition of MATVEEV (1980, p. 71) sports training is the preferred means of concretization in the broadest framework of sports training: it constitutes physical training, which is done by means of specific exercises.

The concept of "training" encompasses the various aspects of an athlete's training, namely physical, technical, tactical, moral, and volitional training. It is spread over several years, characterized by very specific work periods, hence the term "periodization of training."

According to WEINECK (1983, p. 17), training is a process that aims to achieve a more or less high level in the area of the objective considered. He adds that "the degree of training" expresses the degree of adaptation to training loads. This adaptation depends on several endogenous (age, sex, physical constitution) and exogenous (metalogical factors) factors.

As for PLATONOV (1984, p12) "sports training includes all the tasks that ensure good health, education, harmonious physical development, technical and tactical mastery and high development of specific qualities."

EDGAR THILL et al (1990, p156) define it as the sum of adapted exercises, with progressively increasing and controlled intensity, which result through biological, psychological and technical modifications in the achievement of the highest possible performance.

CAZORLA (1990, p156) considers it as the only way for an athlete to be able, based on his genetic potential, to achieve the quality of the desired performance.

Through this set of definitions we can say that training is a process that aims to achieve a sporting performance through means specific to a sporting discipline, these are the exercises of the different forms of physical technical tactical preparation, while taking into consideration the biological effects induced by these means of preparation so that the training load can respond to that of performance.

Preparation for athletic performance is a complex process involving training and all the conditions in which the player or athlete performs.

The state of training, which reflects the body's general biological adaptation, must be distinguished from the state of readiness, which expresses the body's ability to perform at its peak during a competition. This state of readiness determines athletic fitness. Within the state of training, we distinguish:

- General training aimed at improving overall functional capabilities.

- Specific training aimed at developing skills in a specialized area of activity (PLATONOV, 1984, pp. 12-13).

Maintaining athletic fitness and perfecting motor skills for the game must take into account:

- a gradual increase in load,

- an appropriate ratio between the different training factors,

- a judicious choice of exercises. This choice must be in complete harmony with the competition exercises. These are the so-called specific exercises. Training direction is all the more motivating if the exercises meet the players' level of ambition on the one hand, and the harmonious arrangement of the different components of the exercise on the other, namely:

- its intensity,

- the duration of the effort,

- the nature and duration of recovery,

- the appropriate method.

The Third Lecture : The Foundations of Sports Planning

III.1- Definition and principles:

III.2- Perspective planning:

III.3 Current or annual planning:

III.4 Operational planning:

III.5- Athletic Fitness:

III.5.1 - Athletic Fitness Criteria:

III.5-2- Phases of Athletic Fitness Development:

III.6- Training Periodization:

III.6-1 The Preparatory Period:

III.6.1.1 The General Preparation Stage:

III.6.1.2 The Special Preparation Stage:

III.6.1.3 The Pre-Competitive Preparation Stage:

III.6.2 The Competitive Period:

III.6-3 The Transitional Period:

III.1- Definition and principles:

Planning involves setting goals or performance targets, determining:

- Tasks based on the objectives and individual characteristics of the players;

- The means and methods for solving the main tasks and the timing of their implementation;

- The most useful forms of training;

- The progression of training loads, particularly intensity;

- The means of monitoring and analyzing the different stages of planning.

When applied to athlete preparation, training planning represents a unified process of perfecting motor skills, developing the body's functional capabilities, and shaping moral qualities (POPOV 1967 cited by BELANGER, 1971).

Every training program is based on principles that govern the subsequent implementation of the specific plan. These principles are general in nature and can therefore be applied to all athletes;

- Principle of adaptation to effort;

- Principle of progression

- Principle of motivation

Thus, preparing an athlete or a team to perform at the regional, national, and international levels obviously takes more time and effort than getting a player to participate in local competitions. This is why a coach must be able to identify the different principles to achieve realistic goals.

- Principles of planning:

a) - Planning must be based on a scientific foundation. It must reflect a thorough understanding of the laws and regulations governing training theory and methodology in general and specific sports.

b) - It must be the subject of constant and ongoing work.

c) - The systematization of work is characterized by the development of a training system.

d) - Through careful development, planning must be made concrete and detailed.

e) - Given its practical nature, planning requires consideration of the players' socio-economic conditions, the team's technical resources, etc.

f) - The most significant aspect of planning lies in its flexibility of application.

g) Planning must obey the law of systematization, characterized by macrostructures, mesostructures, and microstructures. Planning training also involves organizing the combination of:

- Macrocycles within a career plan;

- Mesocycles within macrocycles;

- Microcycles within mesocycles;

- Preparation sessions within microcycles;

- Exercises within sessions.

Planning the training process is generally carried out in the following ways:

- A two- to four-year perspective plan;

- A current or annual plan;

- An operational, phased plan.

III.2- Perspective planning:

It represents a set of general data serving as a basis for annual planning. They are compiled in a coordinated manner, with the dominant role being played by the general data, taking into account the timing of the team's major sporting events. This planning must include the improvement of tasks, the volume and intensity of the load, as well as training methods and resources, and monitoring standards.

The essential tasks of this planning are:

a- General characteristics of the team and each player;

b- Essential objectives of each training program;

c- General management of the training process;

d- Determination of annual sporting indicators;

e- Main competitions of each stage;

f- Monitoring standards characterizing each training program;

g- Infrastructure, equipment, and technical materials.

III.3 Current or annual planning:

It is an integral part of perspective planning, it is characterized by its detailed form of all the parameters of preparation. Depending on the regularities of the gradual development of sports form (acquisition, stabilization, temporary loss), this form of planning is based on the principle of periodization of the training process.

The tasks covered by annual planning are:

a) - Define preparation objectives for the year's ranking.

b) - Develop current characteristics and trends based on the capabilities of potential opponents.

c) - Analyze the team's preparation over the past year and its participation in competitions to determine the starting level of the players and the team.

d) - Identify competitive indicators: championship duration, type of competition, number of matches, etc.

e) - Plan the methods, resources, and dates for educational assessments, medical examinations, and other checks.

f) - Establish the training process loads.

g) - Determine the structure and duration of cycles and the dynamics of training loads.

h) - Take into consideration the physical conditions and social factors of the team and each player.

III.4 Operational planning:

It is carried out on the phases of the annual cycle: stages or months (mesocycles, microcycles and each session). In general, it is based on the orientation of training means and loads and on weekly training cycles (microcycles). Thus, depending on the repair of tasks and according to the different periods of the annual cycle, the methods, means and the component of the volume and intensity of training loads in the microcycles change. When developing this form of planning, it is necessary to take into account not only the training load in general but also the various loads due to the various aspects of training, namely the indices of technical-tactical preparation and competition.

The fourth lecture: BIOENERGETIC ASPECTS IN MODERN SPORTS TRAINING

II.1 Training load:

II.1.1 The nature of the load :

II.1 Training load:

II.1.1 The nature of the load :

II.1.2 The magnitude of the load:

2.1.3 Load Direction:

II.1.4 The Proper Sequence of Loads in the Training Session:

II.2- Training Load According to Different Energy Sources:

II.2.1 The Body's Reaction to Different Intensity Thresholds:

II.2.2 Intermittent Training:

II.2.2.1 Nature of Metabolisms in Intermittent Exercises

II.2.2.2 Training Process: Advantages and Disadvantages:

II.2.3 Training According to Different Metabolic Processes

II.2.4 Improving Metabolisms According to Different Training Methods

II.3 The Contribution of Different Metabolisms to Sports Activity

II.3.1 According to Exercise Duration

II.3.2: According to Metabolic Exhaustion Time

II.3.3: According to Heart Rate and Lactate

In the field of training management, the current trend is oriented towards essentially bioenergetic references. The exercises, means of training, are listed in aerobic lactic or alactic: in terms of terrain in endurance or resistance (HEGNER, 1990). In addition, the progress made in the knowledge of muscular energetics makes it easier to develop a training session and the choice of exercises best suited to the objectives pursued. This great clarity contrasts with the confusion of the multiple "recipes" which are still the prerogative of certain coaches. Duration, intensity, number of repetitions, duration and nature of recovery are the different factors of the exercise which make it possible to direct the desired physiological impact.

Platonov (1988) characterizes modern training by a set of fundamental aspects that can be unanimously agreed upon regardless of the sport in question. These include:

- an increase in the overall quality of work performed in training;

- an optimal relationship between different training methods, particularly between continuous and interval training methods, with an intensity close to 90% of the best performance on the one hand, and competitive testing and effort on the other;

- training aimed at supporting increasingly significant efforts by focusing on the effort phases and less on the recovery phases (as in the interval method), resulting in an optimal relationship between effort and recovery;

- training that is very close to the competitive situation, therefore specific and planned around the most important event of the year;

- a monitoring system (tests) to verify the functional state of the players and the team; - finally, a very high level of motivation, essential for achieving high-level performance.

II.1 Training load:

By training load, we mean an increased functional activity of the body (compared to the initial level) induced by the training exercises and depending on their degree of difficulty (MATVEEV, 1983). Therefore, the training load allows to judge or test the potential of the individual. During physical work, the athlete works

until fatigue appears. The waste accumulated in the body during work stimulates the recovery processes; the athlete not only recovers the energy molecules expended, but also a phenomenon of "overcompensation" is observed.

The relationship between the level of athletic performance and the level of load used is not directly proportional, but the general trend shows that each improvement in results undeniably corresponds to a prior increase in training loads. The increase in load occurs as the athlete's level progresses and must be planned. The workload is therefore a function of two parameters: volume and intensity.

- The volume of a training load refers to the persistence of its effect and the total amount of work performed during an exercise or series of exercises (MATVEEV, 1983)

- The intensity of the load is related to the volume of work provided at the functional intensity involved, taking into account the impact of the load at each moment of the exercise or during a unit of time (MATVEEV, 1983, p. 42)

The adaptation processes of the athlete's body are determined by the nature, magnitude and direction of the loads.

II.1.1 The nature of the load :

The nature of the loads is defined by whether they are training or competition loads, specific or non-specific loads. This nature is also defined by the framework in which it is inserted: load linked to the exercise, to the training day, to the cycle (micro, meso, macrocycle) or to the training year. The specificity of a load is defined by the analogy of the exercises that constitute it with the activity of the competition. This analogy is established from the external indices of the competitive activity (PLATONOV, 1984)

II.1.2 The magnitude of the load:

The magnitude of the charge depends primarily on its volume and intensity. The volume of the charge characterizes a quantitative part of the charge, and the intensity determines its qualitative side.

When planning loads, volume and intensity are assessed by absolute and relative quantities. The load is subdivided according to the magnitude of its influence on the athlete's body, into maximum, large and small loads. ALTBERG (1971), KOURAMSHINE (1981) and particularly KORIAGINE (1973), KONDRACHINE (1978) and PREOBRAGENSKY (1979) determined levels of the volume of loads in basketball and that of its intensity according to five quantities distributed as follows:

The Fifth Lecture: Training modeling for load planning.

III.1 Characteristics and objectives of training during the competitive period:

III.2 Essential aspects of basketball players' preparation during the competitive period:

III.3 The dynamic and physiological characteristics of competitive basketball activity:

III.1 Characteristics and objectives of training during the competitive period:

High athletic performance is achieved through planned, systematic, methodical training, spread over several years and culminating in a network of appropriate competitions. Sports training aims to equip the athlete with knowledge, skills, and attitudes that allow them to perform adequately in competition. The trend in training structures is increasingly moving toward the method of coordinated and goal-oriented combinations. It starts from the desired goal and aims to correctly develop special qualities and technical skills while maintaining a relatively high intensity.

According to Martin (1980), the following three characteristics must be applied to elite athletes:

- Load dynamics that result in frequent and high-level load changes.

- Shorter training units and sections become necessary and must be equipped with precise and frequent recovery methods due to high load intensity.

- A special nature of the load specific to competition.

Therefore, the specific focus of training is focused on special preparation. Of course, the body's functional abilities must also be improved, but training must primarily meet the discipline's demands on the body, technique, and team play, which are characterized by speed of execution. Accuracy and consistency at this stage of development, psychological preparation for peak performance, are of paramount importance. This state of training is characterized by the harmonious unity and complex combination of factors determining performance.

The main objectives of training during the competitive period are:

- Creating operational conditions to enhance athletic fitness.

- Achieving the best possible results during competitions.

- Maintaining high-level athletic fitness throughout the long competitive period.

- Stabilizing this athletic fitness, which will allow for the physical development of motor reflexes and technical and tactical knowledge, ensuring the athlete's optimal preparation for competition.

The essential principle of competitive training is its clearly defined focus on skill preparation in the form of special training that creates a state called "competitive readiness."

To achieve this state, it is necessary to achieve and maintain a maximum level of specific preparation during each microcycle, as well as an optimal level of general preparation.

With regard to technical and tactical preparation, the aim is, on the one hand, to deepen previously acquired reflexes and knowledge, and on the other, to increase flexibility: "the aim is to use them to the maximum in the different conditions of competition; this becomes possible by perfecting movement coordination in complex technical-tactical exercises." An important role here is played by specific, psychological preparation (mobilizing the greatest possible effort) as well as by regulating emotional states, developing willpower, and a practical readiness for possible defeats.

III.2 Essential aspects of basketball players' preparation during the competitive period:

- Physical preparation during this period is oriented towards maintaining the state of training in general, and ensuring the maximum state of special training, during the whole period towards the further improvement of specific motor qualities (special endurance, speed endurance and speed-strength) and towards the improvement of functional preparation for limited competitive loads with the dominant development of anaerobic possibilities.

- Special physical preparation is oriented towards ensuring the availability of the game, towards mobilizing players for the highest manifestation of physical and moral forces and towards regulating emotional states and maintaining positive emotional tone.

- Technical-tactical preparation is geared towards perfecting know-how and technical habits in different playing conditions similar to those of competition.

- Tactical training should ensure the level of tactical thinking, rational use of individual qualities and creativity, increase of activity and tuning of actions of all

players on the basis of their cohesion, assimilation of different combinations of power of attack in defense and vice versa.

- The gradual increase in the maximum level of load intensity with their subsequent stabilization and variation of special loads in training microcycles correspond to a regularity characteristic of the competitive period, regulation of recovery processes and carrying out of in-depth medical examinations of stages as well as operational examinations allowing to know the positive or negative changes in preparation under the influence of training.

Under the influence of fatigue, work capacity is reduced, causing a decrease in play and an increase in the duration of breaks. The decrease in the team's playing activity during a match is shown by the dynamics of the number of attacks in different halves. It is very important to know this dynamic during the competitive period to influence the most essential training factors at the right time.

The complexity of solving the problem of training management in relation to the peculiarities of competitive activity, the specificity of the training cycle consists in the short duration of the preparatory period (1.5 months) and the long duration of the competitive period (up to 9 months) during which it is necessary to ensure the increase of several peaks of sports fitness. The main tasks are:

- Achieving and maintaining a high level of athletic fitness.

- Maintaining a high level of functional capabilities and achieving new performance levels based on this.

- Improving moral and volitional preparation.

The Sixth Lecture: Intensification of loads in the planning process

IV Load Planning and Intensification in the Planning Process:

IV.1 Importance of the Microcycle in Load Planning:

IV.1-1 Different Types of Microcycles:

IV.1-1-1 Training Microcycles:

IV.1-1-2 Ordinary or General Preparation Microcycle:

IV.1-1-3 Shock or Special Preparation Microcycle:

IV.1-1-4 Introductory Microcycles:

IV.1-1-5 Competition Microcycles:

IV.1-1-6 Recovery Microcycles

IV.1-2 Load Dynamics in Microcycles:

IV.1-3 Organization of Microcycles in the Training Process:

IV.2 The Relationship Between Load Volume and Intensity:

IV.3 Planning as a Means of Implementing the Training Model:

IV.4 Why Intense Training and What Problems Does It Pose? IV.5 How to Determine the "Ideal" Intensity of a Workout

IV.5 How to determine the “ideal” intensity of a workout

IV.5-1 The Anaerobic Threshold:

IV.5-2 The Glycolytic Intensity Coefficient

IV.5-3 The Degree of Exercise Load:

IV.5-4 The Near-Wrestling Intensity Coefficient (NWIC)

IV.1 Importance of the Microcycle in Load Planning:

Microcycles represent one of the most important units in the structure of the training process. Their duration can vary between 3 and 10 days. However, one-week cycles, which represent more convenience, are the most widespread, while respecting principles such as "overload, progressiveness, specificity, alternation, volume of work." The arrangement of microcycles among themselves must remain relatively stable over several consecutive weeks or mesocycles.

Among the many conditions that influence the structure of microcycles, we will mention three (03) essential ones:

* The same factors that cause small variations in load dynamics.

* The need to use different exercises (exercise variations).

* A key role in microcycles is played by the athletes' general activity (work - study).

However, there is no universal and exemplary microcycle structure that can adapt to everyone. The structure changes depending on the content of the training, the development of preparation, and the influence of external conditions. Through controlled modification of exercises, the number and nature of additional training, the distribution of loads and rest periods, the dynamics of the volume and intensity of loads, the trainer can increase the effectiveness of the training process.

IV.1-1 Different Types of Microcycles:

The microcycles themselves are divided into general preparation and special preparation microcycles. The former play a key role at the beginning of the preparatory period, when the essential elements of skill preparation in all its aspects are formed. The latter are typical of competition preparation, even if they are present in the other stages. Generally, the following types of microcycles are distinguished:

IV.1-1-1 Training Microcycles:

Characterized by essentially training work, they are composed of different forms of microcycles:

IV.1-1-2 Ordinary or General Preparation Microcycle:

It is oriented towards the adaptation of the body to the preparation for intense training used mainly during the first stage of the preparatory period, its load dynamics are based on a gradual increase in the load and to a lesser extent in the intensity.

IV.1-1-3 Shock or Special Preparation Microcycle:

Its main task is to stimulate the adaptation processes of the athletes' body to heavy training loads. An essential component of the preparatory and competitive period, its workload dynamics are maximal in terms of both volume and intensity.

IV.1-1-4 Introductory Microcycles:

They are geared toward direct preparation for competition. Their content may vary and depend on the athlete's competitive preparation system. Depending on this, future competitions will address issues of recovery and psychological motivation.

IV.1-1-5 Competition Microcycles:

They are developed according to the competition calendar. Their structures and durations are determined by the specific nature of the competitions.

The focus of training sessions in these microcycles must address various challenges related to maintaining athletic fitness. This focus is determined by the team's current state and the content of technical and tactical preparation, which is characterized by:

- The team's playing style and tactics;

- The upcoming opponent's playing characteristics. Generally, to bring microcycle training sessions as close as possible to competitive loads, the characteristics of the game are used, depending on the volume and intensity.

The most commonly used competitive microcycles are:

- The competitive microcycle in the development regime:

This tends to improve motor skills and perfect technical and tactical mastery in game conditions. It aims for optimal preparation for the next match.

- The competitive microcycle in the maintenance regime:

This focuses on a training regimen based on maintaining the player's condition and preparing them for competition. It develops optimal fitness to maintain specific work capacity.

- The competitive microcycle in the recovery regime:

This follows the maintenance microcycles. It is characterized by increased loads and decreased demands during training (the exercises are geared toward optimizing recovery processes).

IV.1-1-6 Recovery Microcycles

They are generally used to complete a series of shock microcycles. They are also planned after intense competitive activity. Their tasks ensure optimal conditions for the athlete's body's recovery and adaptation processes. They are characterized by:

* A decrease in training load

* An increase in the number of rest days.

IV.1-2 Load Dynamics in Microcycles:

The alternation of load and rest in microcycles can generate three (03) types of reactions:

A- Maximum increase in training status (including physical, technical, and tactical aspects). This reaction is characterized by the case where an optimal number of sessions with heavy loads are used in microcycles, rationally alternating them with sessions with lighter loads.

B- Selective increase in certain aspects of preparation: This is characterized by the basic mesocycle, where the development of a single quality is increased, which will then be linked to the development of other qualities. This reaction is linked to the improvement of the weakest quality compared to the average level of preparation.

C- Overwork of the athlete is caused by the overuse of heavy loads.

IV.1-3 Organization of Microcycles in the Training Process:

As with a training session, a microcycle cannot be an isolated element of the entire planning and training process. The principle of alternating loads, the objectives of each stage and preparation period, the organization and the course of training mean that the microcycle changes its structure according to the different objectives assigned to it. Thus, the following microcycle structures are observed:

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