



## **PHYSICAL EDUCATION**

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**Title:**

**Science of Sports Training B. P. Ed. 4<sup>th</sup> Year**

**TOPIC NO. 4  
Periodization**

**Lecture - 184**

**Meaning and Importance, Periods of training year, Aim and  
Contents of periods and Types of Periodization**

### **INTRODUCTION:**

Our bodies react and adapt to stress as a method of survival. Training is simply a form of stress on the system with the intention of adapting to the stress of training and recovery to become bigger/faster/stronger. Too little stress or stimulus from training will result in little or no adaptation and therefore no progress. Managing the stress of mid and longterm training is called periodization. Typically periodization dictates not only how much or how intense training is at a given time, but also what specific areas are to be focused and when.

The idea of dividing a training program into stages began in Europe in the 1920s, with the focus on sports performance training. It was during this time that athletes began to train year round. The attempt at this structure focused on different stages of training, such as general, preparatory and specific. In the early 1930s the structuring of clearly defined cycles of training began to emerge. Recommendations during that time included that the training process should present a clear alternation of work and rest to form an undulating rhythm of training.

Sports training is a performance and competition oriented process. It is planned and carried out for the purpose of participating successfully in sports performance. It is, however, a well known fact that a sportsman is not in a position to give his best performance at any time during the process of training. He has to systematically train in order to give his performance in a particular time. Hence, the process of preparing the sportsman to give his best performance in a particular time is periodization. A sportsman who is undergoing regular training always possess some sort of form but for achieving the desired success he must have the highest possible form i.e., top form. So, to understand periodization, it is obligatory to understand Top

Form. The concept of Sport Form or Top Form was propounded by the famous Russian physiologist L.P.Matyeyew in 1965, as an updating of work which he first introduced in 1962.

### **MEANING AND IMPORTANCE:**

Periodization is a planning process which is a methodical, scientific procedure to help athletes achieve high performance. It is the important tool a coach has in conducting a well organized training programme where a coach is only as efficient as his organization. It is the purposeful sequencing of different training units (long duration, short duration training cycles and sessions) so that athletes/sportsman could attain the desired and planned results.

Periodization helps in improving health and fitness, and gives a potentially more effective way to train. It is the method for structuring training programmes using cycles of stimulating loads, maintenance loads, detraining loads and rest to illicit improvements in fitness and performance.

Top form is a state of optimum performance capacity of sportsman which he achieves through training in every training cycle. It is the training cycle plus the harmonious relationship among the various performance factor.

1. Top form is achieved more than once i.e. in every training cycle .
2. Top form can be achieved at any level.
3. In every training cycle Top form is achieved at a higher level of training state.
4. The best performance during competition period indicates top form.
5. Stable performance in a completion period indicates the maintenance of top form.

#### **Various phases of development of top form**

1. Phase of training state( Base creation phase)
2. Phase of achievement and maintenance of top form.
3. Phase of temporary loss of form.

The above three phases corresponds to the three periods of periodization( preparatory, competition and transition).

### **DEFINITION:**

The process of preparing the sportsman to give his/her best performance in a particular competition is called periodization.

Periodization can be defined as a system for program design that plans appropriate cycles and training phases, organizes routines and manipulates all exercise variables.

Periodization is the systematic planning and training of athletic or physical training. The aim is to reach the best performance in the most important competition of the year. It involves progressive cycling of various aspects of a training programme during a specific period.

Periodization is the systematic formulation of sports training for achieving top form in a competition at a definite time.

## **AIMS AND CONTENTS OF PERIODS**

### **1. Preparatory period**

This is the period which immediately follows the transition phase. It is the longest period. This phase consists of the general preparation and specific preparation. Usually it can be sub-divided into three different phases. One should always remember that this is a base, a creation phase with the objective to attain the previous training state.

*In general during the preparatory phase, activities should be structured to:*

- progressively adjust the physical psychological components according to the requirements of competition
- provide a high volume of training with only 30-40% devoted to high intensity training
- improve endurance, strength and speed as the physical groundwork for further performance accomplishments
- improve the later portion to specific exercises directly related to the skills and technical aspects of the sport. The intensity of training should increase but the total volume of training will be reduced by 20-40%
- improve and perfect technique and tactics.

### **2. Competition period :**

The aim of this period is to achieve top form and to maintain it for a sufficiently long period. the training structure in this period depends considerably on the duration of the competition period, number and frequency of competitions and their dates and performance level of the sportsman. It also depends to a significant extent on the individual peculiarities of the sportsman.

*During this period activities should be structured to:*

- Maintain the physical standards acquired in the preparatory period
  - Perfect technique and tactics
  - Gain competitive experiences with the aim of improving game skills and mental capacities
- This period should include an unloading and tapering phase following a competition. The unloading is time for the athlete to generate all functions of the body and usually involves reducing the volume and intensity of training.

### **3. Transitional period :**

This is a period which immediately follows a period of hard work or stressful competitions. The aim is to maintain the physical gains acquired during the competition period and facilitate recovery. The Transitional period is a time to analyze the completed program and compare it with the past programs, construct the next yearly plan and have thorough examinations carried out on athletes.

*During this period activities should be structured to:*

- Maintain a level of general physical preparation which is 40-50% of that of the competition period
- Avoid complete rest which could lead to the dissipation of training gains, insomnia and loss of appetite
- Continue practicing for three to four times each week( one practice session a week is sufficient for young athletes)
- Alter the activity, environment and venue as much as possible.

## **THE DURATION OF TRAINING CYCLE AND ITS PERIODS**

One cycle of base creation, form achievement and temporary loss of form is one training cycle or one macro-cycle. In a single periodization the three phases total upto about 12 months, i.e., the training cycle is of about 12 months duration. In multiple periodization, there are usually 2-3 training cycles in a training year. Thus, the duration of a training cycle can be less or more depending upon various factors. The minimum duration of a training cycle can be 3 months. A training cycle shorter than this is not possible because then the duration of preparatory and competition periods will be very short which will not be enough either for improving the base or for achieving the top form. The maximum duration of a training cycle, theoretically, can be more than a year but practically it is 12 months or less. To have a training cycle longer than a year means to have very long preparatory and competition periods. One cannot have a very long preparatory period because psychologically and physiologically, it is very difficult to go on training without participating in important competitions. A very long competition period is not possible because it is very difficult to maintain top form for a long time. Due to these reasons, the duration of a training cycle is usually one year or less. The duration of a training cycle is further determined by the following factors:-

- a. Training stage and age of the sportsman
- b. Means and methods of training
- c. Nature of sport
- d. The duration of preparatory period
- e. The duration of competition period
- f. The duration of transitional period

### ***The Macrocycle***

A Macrocycle is an annual plan that works towards peaking for the goal competition of the year. There are three phases in the macrocycle : preparation, competition and transition.

The entire preparation phase should be  $\frac{2}{3}$  or  $\frac{3}{4}$  of the macrocycle. This phase is further broken into general and specific of which general takes over half.

The competition phase can be several competitions, but they lead up to the main competition with specific tests.

The transition phase is important for psychological reasons, a year of training means a vacation is in order. A typical weekend warrior might take three months while a professional athlete might take as little as two weeks.

### ***The Mesocycle***

A mesocycle represents phase of training with a duration of 2-6 weeks or microcycles, but this can depend on the sporting discipline. A mesocycle can be defined as a number of continuous weeks where the training emphasize the same type of physical adaptations, for example muscle mass and anaerobic capacity. During the preparatory phase , a mesocycle commonly consists of 4-6 microcycles, while during the competitive phase it will usually consists of 2-4 microcycles depending on the competitions calendar.

### ***The microcycle***

A microcycle is typically a week session. The duration is too short to achieve the desired adaptation. But by systematically loading the sportsman in a number of microcycles this effect is achieved in the mesocycle. Thus, microcycle forms the basis of mesocycle.

## **TYPES OF PERIODIZATION :**

Periodisation is normally done for one year. The three phases of sport form make one macro-cycle. According to the number of macro-cycles in a training year periodization is classified into:-

***I. Single periodization*** : when there is only one macro-cycle in one year it is called single periodization.

***II. Multiple periodization*** : when there is more than one macro-cycle in a training year, it is called multiple periodisation.

Most common types of multiple periodization are double periodization(2 macro-cycles in a year) and triple periodization (3 macro-cycles in a year). The normal duration of the periods, which is, however, subject to a much wider range, in double and triple periodisation. In multiple periodisation the transitional period at the end of the first and/or second macro-cycle is not there. It is kept only at the end of the last year. It is often a point of discussion regarding which type is better. It is however, generally accepted that both types have their advantages and disadvantages. According to Matveyew(1981) single periodization is suitable for developing the base for sports performance and multiple periodization is better for faster development of performance. However, multiple periodization should be avoided for children as they cannot tolerate highly intensive and specific training.

## **CONCLUSION:**

Periodization is a means of organizing and managing training to provide a greater likelihood of successful performance through year on year improvement and planned management of peak performance. Periodization and training are the main components and the basic form of preparing the sportsman. In other words, it is systematically planned preparation with the help of the exercise methods which realizes the main factors of influencing athletes progress. The content of training includes all the basic types of preparation of the sportsman-physical, technical, tactical and psychological. Systematic training improves the athletes fitness level. It is the basis of his preparedness for sporting achievements. At the same time training has an impressive effect on the athletes physical and spiritual development and his acquisition of vital knowledge and skills. Today even a highly talented sportsman is not in a position to win a medal unless he possesses certain minimum of the above mentioned factors. It has also become increasingly clear that these factors cannot be developed to the desired level in 1 or 2 years. It is necessary for a person to develop adequate level of physical fitness early in life and then continuously maintain it through regular participation in a well designed activity programs to promote his total physical well being flexibility along with strength, speed and endurance. The concept of periodization rests on a sound physiological basis, but it is a concept that is difficult to scientifically scrutinize, since many factors outside of the specific training programme can affect how an individual adapts to training. But anecdotal evidence supports that athletes can perform better using the periodization method. Although periodization is most commonly used for elite athletes to enhance performance, it can also be used by anyone who wants to get the most out of their exercise programme.