TENNIS TRAINING PERIODIZATIONS

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Abstract
In 1972 Matwejew published a text entitled “Periodisierung des sportlichen Trainings” (Periodization of Sports Training). The main concepts are that an athlete achieves his/her fitness in phases, can preserve it for a very short period of time and will inevitably lose it. The result is that training can be divided into three phases: Preparatory phase, Competitive phase and Transition phase. Depending on the phase, both the load parameters and the content and objectives of the training will vary. The concept of Simple Periodization foresees the participation to a single competitive moment/period in one year.

Key words: tennis, training, periodizations.

Introduction
In most sports disciplines, the annual training cycle is structured in three main periods: the preparatory phase, occurring before competitions; the competitive phase, which corresponds to the period of the competition; the transition phase, occurring at the end of the season (Bompa, 2001). The main theme of the research work is the planning and organization of tennis training, focusing on the periodization of physical workout. The preparatory period in youth or mid-level training can be divided into two phases. In the first phase we find a wide general organic-muscular preparation, while in the second phase, specific training means prevail with a decrease in volume and an increase in intensity (Weineck, 2009). The variant of the project was the structuring of the initial Preparatory period (general and specific physics), with different objectives and applications of motor loads.

The driving force behind this research work was to obtain, through the application of a Simple Periodization for two sports seasons, a proportional and substantial increase in the performance parameters such as fast strength, speed and joint mobility.

Methods
The research was carried out by observing ten young male athletes in the under-18 category, with an average age of sixteen years, performing at a competitive level in the third ranking category for two entire competitive seasons, from September 2017 to June 2019.

In order to assess the working hypothesis, i.e. the increase in physical parameters according to the tennis performance model, four motor tests indicated by the Italian Tennis Federation were employed. The tests were administered in the months of October and April of each year, i.e. at the beginning and at the end of the Preparatory Phase.

Fast 10-meter run test
The athlete started from a standing position, and had to run one by one. The boy put the top of his foot just behind the starting line and, without a signal, started running at full speed.

The detector positioned himself on the extension of the finish line and recorded the time to the hundredth of a second. Three tests were carried out, with a break of at least 4 minutes in between, recording the time of the best test to the hundredth of a second.

8-meter shuttle test x 6 times
Two ribbons were placed on the ground and fixed a distance of 8 meters from each other. The young guy, starting from the line of the first ribbon, performed fast runs by touching the subsequent ribbon with the palm of his hand, until he completed the test.

The time was recorded in the same way as in the fast run tests, i.e. by starting the stopwatch as the student moved his back foot and stopping it once reached the finish line. Two tests were carried out with a break of at least 10 minutes in between, recording the time of the best test with a centesimal approximation.
Spinal joint mobility test
The subject sat with his feet fully adhered to the bench top specifically designed for the test. At the start, he slowly bent forward by keeping his hands in contact with the graduated bench top as far away as possible, and remaining there for a few seconds (3/4).

The detector stood on his knees next to the subject, so as to detect any bending of his legs. Two tests were carried out, and the best one was recorded. The measurement obtained with the tip of the fingers of the hands was detected, which proved negative if the tip of the feet was not reached, and positive in the opposite case.

Ergojump board test (sj)
The subject had to perform a vertical jump starting from the half squat position (knees bent at 90 degrees), keeping his upper body straight and putting his hands on his hips.

Three tests were carried out within a few seconds of each other, recording the best height reached with the tenth of a cm discrimination as indicated by the instrument.

(CMJ)
The subject, from the upright position with his hands on his hips, performed a rapid counter-movement downwards, bending his legs up to 90 degrees and then performing a vertical jump at maximum height.

Three tests were carried out within a few seconds of each other, recording the best height reached with the tenth of a cm discrimination as indicated by the instrument (Italian National Olympic Committee, 2003).

Once collected data from the ex ante evaluation, the six-month PREPARATORY PERIOD was programmed and divided into two three-month macrocycles as follows:

- A first General Physical Preparation Macrocycle with the objective of a broad organic and muscular conditioning, in addition to increased joint mobility.
- A second Specific/Auxiliary Physical Preparation Macrocycle with the objective of increasing fast strength in all its aspects, as well as speed and specific strength, and stabilizing joint mobility.

It is useful to underline that the athlete underwent only two hours of physical preparation per week, for a total of eight hours per month, training on alternate days only from a technical/tactical point of view.

At the beginning of April of each sporting year, in conjunction with the beginning of the competition period, the tests previously reported were administered again as a final evaluation.

Each test was administered as an integral part of a working session. All the tests were carried out outdoors, on the fields, supporting the data acquisition with an ad hoc reference card by a first level physical trainer of the Italian Tennis Federation.

Discussion and conclusion
As shown in the graphs and attached tables, the fast 10-meter test progressed from 2.07 seconds in October 2013 to 1.74 seconds in April 2015, with a difference of -0.33 seconds.
In the shuttle test the time difference between the initial 14.79 seconds and 12.98 seconds was -1.81 seconds. The joint mobility test showed the change from 2.5 cm to 6.15 cm with an increase of +3.65 cm in terms of spinal mobility. Furthermore, the data of the fast strength test on the Ergojump platform show clear increases: in the squat jump test the jump height went from 34.34 cm to 38.9 cm (+4.56 cm), while in the counter-movement test it changed from 34.86 cm to 39.8 cm in April 2015 (+4.94).

Resuming the initial working hypothesis, through the application of a simple periodization for two sports seasons, we can observe proportional and substantial increases in the performance parameters. The data also show a clear demonstration with the periodization theory taken into account. The detailed organization of the preparatory period brings clear improvements, which are proportional in each sporting year and increasing in the two-year research period. The research work also revealed that, in youth tennis, the simple periodization has an important impact: the clear start of the competitive season (April - August) allows for a clear organization of the preparatory phase, both at physical and technical level. It also helps choose the competitive objectives during the competition period in the best and wise way possible. The research work highlighted, in particular, two aspects. The first is that the total adherence and consistency with the theories on the periodization, and the meticulous organization of the Preparatory period, led to the above mentioned results. The second aspect shows that, due to different methodological choices made by the technicians with whom we collaborated, the Competitive period was not programmed with the same periodization theories according to the tournaments to be played. Although far from the data provided by the Italian Tennis Federation for under-18 athletes, despite factors related to the training load (little time available, absence of athletes), structural factors (unavailability of training courts, lack of equipment, rain ...), the data obtained from the functional evaluations in the two-year period considered show a systematic increase of all performance model parameters. This suggests once again that the training organization is a fundamental pillar for the improvement of tennis performance and for the general growth of the athlete.

References


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