

The training of tennis players to overcome successive competitive seasons

The DNA of tennis is that of a sport where tactics and individual technique have always shared the development and evolution of the game. The tennis player grows improving the specific sports movement and decision making. But to be able to give answers to the demands of 21st century sport, the technical contents and tactical concepts must be complemented with other structures of the athlete, which complement and improve them.

Currently we cannot understand the process of training and competition without contemplating in an integrated way the cognitive, coordinative, creative-expressive, conditional, emotive and socio-affective structures. All of them, in different percentages according to the formative stage and the time of the season, will help to configure a coherent and individualized training process that will accompany the students throughout their sporting life.

To try to reach these levels of demand, we need tennis players to evolve at a constant pace, coexisting with all the variables found in the game.

For this, a coherent planning is essential and in accordance with the project of sports life of the athlete. A planning that covers many aspects that go beyond the sport itself and its competition system. Aspects that should be contemplated in a balanced and respectful way with the different evolutionary stages of the person.

To carry out a project as important as educating/training people/athletes, we must plan with sufficiently broad and open criteria, which exceed those that can offer us the competition or some specific moments of the sport itself.

We propose the motivating challenge of being able to accompany children, a teenagers, woman and men, who grow, develop, maintain, share and dedicate many hours of their life practicing a certain sport along their "life project" in an extremely specific environment.

With respect as a starting point, we must be able to plan long, medium- or short-term objectives in relation to the age and goals of each athlete. This will allow us to plan and design, season by season, and respect the person above the demands of the sport itself.

This humanistic vision leads us to place athletes in the center of the "training proces" and to conceive sport as a means of training.

The tennis player and his or her projection in the game, will be the guiding thread to generate training situations that should help him or her express better in practice and in competition.

Is the preseason of the tennis player always the same?

There is no preseason without the previous design of the season. We will design the preseason according to the planning of the whole season, marking the objectives of the cycle. The objectives will be defined according to the player's sporting life; therefore, the preseason will vary depending on the objectives of each stage the player is on. For young players, in development, the preseason will not be very different from the rest of the season. In these ages we work with loads distributed on a regular basis throughout the cycle. The orientation of the load is generic in terms of the conditional and socio-affective structure and evolves from general to slightly specific in the coordinative, cognitive and emotional structures. We prioritize the integral development of the player over the competition and possible punctual results. As the players advance in their conditional maturity and game, the preseasons are designed with a double objective:

First, to recover the level of those structures that have lost capability during the previous season and that will be necessary to face the present one with guarantees.

Second, to establish the conditional, coordinative and cognitive bases of the season based on the competitive level of each tennis player. This level will be that necessary each player needs to overcome weeks, (microcycles), quality training and a high number of competitions. These aspects will mark volume, intensity and orientation of the load in the design of the preseason.

At a more competitive level, the main goal of the preseason will be to achieve a specific conditional base that will help sustain the development of "their tennis" and to optimize "their specific sports movement" based on "their projection in the game".

In this integrated training process, all the structures of the athlete will participate, in different percentages depending on the season's moment.

The training process is dynamic and grows in the preseason and continues to evolve throughout the season. This constant work will facilitate us to maintain a level of optimal form and sometimes reach the maximum form, to solve with quality, the amount of training and competitions of the entire season.

Therefore, the preseason will be more generic, when the players are in training stages and more specific when they reach competition dates, where the requirements of the game and the results will directly influence the design of the season.

Why did the ASC choose to train at altitude? What does this type of training bring?

Let's focus on why the ASC has organized several altitude preseason stages.

From the ASC we proposed a pre-season stage in altitude with the high-level players to try to achieve three goals:

- 1- The conditional improvement that this special kind of training could give them.
- 2- The incidence in the emotional structure of each athlete to overcome the challenges posed in conditions outside their comfort zone.
- 3- The socio-affective implication that would cause the coexistence of the group of tennis players during the stage.

The coaches of the ASC, responsible for this project, were aware of what limitations our altitude training plan would have. The optimal conditions to obtain remarkable benefits in this training modality, is to be able to stay at a height higher than 2,500 meters for a time between 21 and 30 days. We scheduled a stage at an altitude of 1,800 meters for 18 days. With a moderate height and a somewhat shorter stay time, the consequence would be that the benefits derived from altitude training, in terms of conditional improvement, would not be as important, but could be important for the emotive and socio-affective point of view.

Effects of the training plan:

1- The improvement of the conditional structure:

Endurance is the main beneficiary of height training, since the main argument of this work design is physiological. Training in a state of hypoxia, produces an increase in hematocrit, (increase in the percentage of red blood cells in the blood) and as a consequence there will be a slight increase in maximum oxygen consumption, a parameter that indicates the improvement of resistance capacity. To this ostensible improvement of the aerobic resistance, a positive increase of the anaerobic resistance can also be added, as long as the predominance of the training systems is using intervals and the practice has a high intensity. Also, strength, although in smaller scale, can have some improvement, since the training will contemplate the execution of general strength gain tasks to 'build' the athlete.

2- The incidence in the emotional structure and socio-affective involvement:

As we have already mentioned in the introduction, the benefits that can be obtained with a stage like this, will not be limited only to the conditional aspect.

The training design contemplates:

To provoke the practice in conditions of fatigue, which will accumulate with the passing of days. Develop it in an inhospitable weather created by the environment and climate, aspects that the group is not used to managing. These special circumstances require from each player, a high involvement of other structures, in different percentages, according to each person. This implication that will help to successfully complete the proposed efforts in each training. These structures are also activated in their daily practice in the ASC, but with this training design we get the athlete out of their comfort zone and this particularity in the work causes a greater participation of the emotional structure. The whole process helps us make the tennis players fully aware of the importance of their commitment

to the practice, to advance towards the goals. Added to this, a continued work in the ASC we can achieve maintain and increase the activation of this structure.

As we have already said, in order to face these conditioning factors that this uncomfortable training environment causes, they needed their emotional structure to be fully involved in each of the challenges of the sessions. To achieve this, we helped them in the process by designing a group training organization. All the players participated in all the sessions together and most of the tasks were carried out in pairs or small groups based on level. Therefore, the socio-affective implication, helped each of the athletes from the strength of the group, the cooperation and the synergies that were created between them. This cohesion that appear when being a member of a team towards the achievement of the objectives, improved day by day the relationship of the players.

This concentration was organized for advanced level students in tennis, aged between 15 and 17 years old, a very important stage for our tennis players to reaffirm their willingness to play tennis at a high level. This training context gives us a unique opportunity to take them out of their comfort zone and pose complex challenges to overcome. Evolve through a few weeks of "peculiar" training that goes beyond physical preparation and tennis itself. A stage in a training center in altitude and the work developed there, beyond the conditional improvements obtained, has provided us with the possibility of establishing stable personal links between all the components of the group, which continue to be maintained once they arrive at the ASC.

• Is an acclimatization necessary?

Most controlled studies have shown that living at altitudes between 1500 and 3000 meters, combined with altitude training, allows to increase the performance during the effort at altitude (Maher et al, 1974, Saltin, 1996, Wolski et al, 1996 Fulco et al, 2000). What is unclear is what part of the performance improvement is merely due to acclimation and what part corresponds to the training itself.

• Which aspects work better or differently in altitude?

During altitude training we focus on extensive aerobic endurance work combined with general strength workouts. In altitude it is not possible to maintain the same absolute intensity, nor is it possible to perform the same volume of training as at sea level (Levine and Stray-Gundersen, 1997). When intermittent high-intensity exercise is performed, the recovery time between series must be longer to maintain the same intensity of effort during the series than at sea level. Therefore, we chose a center at an altitude of 1800m, which allows us to feel the effects of the lower concentration of oxygen in the air, but at the same time allows us to maintain an adequate training intensity, since its altitude is not excessive.

• Can different workouts be carried out depending on the characteristics and needs of each player?

One of the important characteristics of a training program is the individualization of work for each of our players. This fact, in the stage in altitude, where the conditional work will be basic to help each athlete to reach their objectives of the season, is present from the initial design of the process. The coexistence in the training center throughout the day and from the beginning to the end of the stage of athletes and coaches is of the utmost importance to take care of this concept. The daily practice is reinforced by the necessary and calm feed-back that the coach will give the athlete and the contributions that each player can revert from their sensations and experience. All this will facilitate the optimization of the training process. It is important that the players participate in the preparation and subsequent review and adjustment of their goals in the short, medium and long term, this fact implies a greater commitment and a greater self-demand in training and competition.

All the structures that build the athlete and that we have tried to activate above their comfort thresholds, in altitude training, are the same that will be requested constantly during training and competitions. Structures that each player will activate preferentially depending on their projection in the game.

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