

## **Implementation of the running pace for a marathon race.**

Prescribing a training program to a runner is a complicated process that has as a goal to achieve an objective, to improve a running time, to get a medal or to improve the health. Moreover, training a runner involves an articulated process that generates a greater specialization of the individuals. As I always maintained, training is done to support other trainings of greater demand and to produce adjustments in the muscles and the organism that make people more capable for certain activities.

Currently and thanks to all the advances reached in the field of sports sciences, people can train better and more suited to the demands of high performance runners, and coaches have better tools to apply that knowledge to the training process.

Due of what I said before, at the Olympic Games held in Rio de Janeiro we had observed spectacular times such as the woman's marathon as a in the 10,000, which makes us think about the possibility that in the very near future we could see times under 29 minutes in the 10,000 meters for woman and possibly times under 2 hours 15 minutes for the 42 km on the same line.

It is evident that one of the changes that are experienced in the workouts for distance runners is the way they run during these training sessions, especially in the form how they deal with the volume and the intensity to try to improve their anaerobic threshold which is a crucial stages of their preparation and competitions.

It has been shown in many studies that there is a great affinity between levels of blood lactate concentration with ranges between 3 and 4 mm / l and the speed at which they run 42 km, that is the maximum intensity at which the concentration and removal of lactate is in a steady state, or where the lactate concentration increases one mm/l of blood during the last 20 minutes of intense and continuous run. With that value the coach will have a very important element to determine at what pace their pupils will train.

If a recreational runner participates in a competition longer than 15 km, the half marathon or the marathon, and treats to maintaining a race pace with blood lactate values above the ones mentioned above, he will be running above his anaerobic threshold, and it is possible that he will not finished his race at that pace since he would consume the glycogen needed for the final stages of the race. By the other hand, running with such as high levels of lactate also affects the utilization of fats as energy supply. Of course, there are exceptions values close to 5 - 6 mm / l found in some runners and still maintain a steady state balance between the lactate produced and the lactate removed.

The most efficient way to determine these blood lactate concentrations are specific evaluations. According to various studies and proposals of several coaches, it should be done about 15 weeks before the marathon and eleven to twelve weeks before the race. With the results obtained in these evaluations, the coach will be able to know which ones will be the appropriate rhythms for

each training zone, especially at what speed per kilometer is the anaerobic threshold and how run to raise more that anaerobic threshold.

The higher the level of the anaerobic threshold and the closer this is to the maximum consumption of oxygen, the greater the runner's ability to run faster and for longer.

For a distance runner success in a 42 km race, he must perform speed training a threshold pace since these will be of great importance in the preparation of the runner.

Personally, in some of my pupils I make those evaluations and I include some training to improve their anaerobic threshold values, these jobs occupy a growing percentage as the preparation progresses and from values between 10 and 12% in the period of general preparation until reaching 15 and 22% of the total volume of accumulated kilometers during the specific preparation period for the race.

Gradually the training pace are getting closer and closer to the rhythms of competition and the most advanced runners go up to 25 continuous kilometers at rates near your anaerobic threshold to accustom their body to consume fats and preserve the glycogen. For specific training I recommend using rates around 100 to 103% of the threshold anaerobic in repetitions of distances ranging from one km to 8 km with patterns of about 3 minutes of pause between repetitions.

As conclusion, the training systems where to accumulate more and more kilometers at slow pace is kind old fashion way old of training, today, sports sciences had been giving the possibility to run a faster racing pace, in which the runner achieves most volumes of running closer to their competition pace.