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CONTROL AND MANAGEMENT OF TRAINING AND COMPETING OF FEMALE SPRINTERS ACCORDING TO THEIR MENSTRUAL CYCLES

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***Abstract*:** *Here we modeled the physical preparation for female sprinters during menstrual cycle. We showed relevant training means developing physical qualities. There are detailed theoretical models for physical preparation of female sprinters during various micro-cycles of the preparation and competition process during menstrual cycle. The characteristics of the athletes' menstrual cycle were discussed.*

Keywords*: track and field athletics, sprint, menstruation.*

1. Introduction

There is a great variety of sports. Their characteristics require specific development of the motor abilities and intensity of training. Therefore a differential research on the influence of the menstrual cycle with female athletes practicing different sports should be implemented.

This proves the importance of the discussed issue. The people directly involved in trainings and competitions should be well aware of women's body functions and take it into consideration. It is advisory to have careful and precise approach in specifying the characteristics, the training intensity, training means and the intensity of performance during the menstrual cycle.

The issue of menstrual characteristics of female athletes raised quite an interest among scientists like Toteva M., Popova S., Dobreva D. (2009), Constantini N. Wet al. (1994), Cokkinades V.E. et al. (1990) Di Fiori J.P. (1995) etc.

We found various views about this issue, expressed in scientific works but we did not come across any ideas and studies for modeling female athletes' training during the menstrual cycle. It's not a new tendency that women start taking part in all sports events regardless of their complexity and hazards. Sport and events made only for men are getting less. We can state that modeling of the training for female athletes and sprinters in particular is an important reserve for improving the effectiveness of their practice, their health and quality of life.

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Problems

During the menstrual cycle it is noted of having a decreased motor reaction, frequent nervous breakdowns, decreased endurance, strength and agility. The versatility of joints and flexibility of ligament apparatus is increased. At the time of the menstrual cycle it is necessary to apply less intensity in the training, even if there is a risk of not fulfilling the daily tasks. In many cases if these elements are not decreased it may cause psychological and physical breakdown of the female athlete. Based on our long experience we suggest training programs recommendable for female sprinters during their menstrual cycle. An important principle when working on the training programs is to consider the individuality of each athlete and their current condition, disposition and willingness to train. It is well-known that speed and strength exercises are basic for the training of sprinters. The exclusion of these exercises would lead to significant decrease of the training. This will have a negative effect on the sprinters' general condition however the training structure should not be broken. Trial trainings and tests should be avoided during the menstrual cycle. Considering the increased flexibility of the ligament apparatus at that time, it is advisory to increase the portion of flexibility exercises. The agility exercises should be less intensive like downhill running, sprint machine etc. The endurance training should be less volumetric and less intensive. Performing jump exercises during the menstrual cycle is counter-indicative.

Theoretical Model for Phisical Preparation of Female Ahtletes during the Menstrual Cycle- Training Stage Table 1

Day	I micro-cycle	II micro-cycle	III micro-cycle
Monday	alternating running 3× 1 km.; flexibility exercises over hindrances; even running 1 km.	alternating running 4× 500 m.; flexibility exercises over hindrances; even running 1 km.	even running 6- 8 × 200 m in 200 m walk; flexibility exercises over hindrances; even running 1 km.
Tuesday	even running 2 km.; 5× 40m. running fine; 5× 40м. running with high knees; 5× 40m. three time exercise; 2×5×60 m. accelerating run; even running 1 km.	even running 1 km.; **agility** downhill running 4×30 m.; 4×40 m.; 4×60 m.; flexibility exercises; even running 1 km.	even running 1 km.; **agility** flying start 3× 20 m.; 3× 30 m.; 3× 40 m.; flexibility exercises; even running 1 km.

Day	I micro-cycle	II micro-cycle	III micro-cycle
Wednesday	even running 2 km.; **endurance pace** 2×3×200m.; even running 2 km.	even running 1 km.; **speed endurance** 2×5×100m.; flexibility exercises; even running 1 km. ;	even running 1 km.; **speed endurance** 4×40m.; 4×60m.; 4×100m.; flexibility exercises; even running 1 km.
Thursday	**general endurance** 5 km. cross	**general endurance** 5 km. fartleck	**general endurance** 4 km. cross
Friday	even running 2 km.; **endurance pace** 150m-200m-250m-300m-250m-200m-150m; exercises over hindrances; even running 1 km.	even running 2 km.; **agility** 2×4×60m; exercises over hindrances; even running 1 km.	even running 1 km.; **agility** flying start 2×30m.; 2×40m.; 2×60m.; exercises over hindrances; even running 1 km.
Saturday	**general endurance** 3×2 km. even running	**general endurance** 4×1 km. even running	**general endurance** 4×600m. alternating running
Sunday	swimming	swimming	recreation

Fig. 1

Day	Competition micro-cycle
Monday	even running 1000m.; stretching 30 min.; 5× 40m. running fine; 5× 40m. running with high knees; 5× 40m. three time exercise; 2×5×60 m. accelerating run; 5× 60 m.downhill running.
Tuesday	even running 1500m.; stretching 30 min.; **agility** sprint machine 5× 20m.; 2× 30m.; 2× 40m.; relay race.
Wednesday	even running 2000 m.; **speed endurance** 80m-100m.-120m.-150m.-100m.-80m.; isometric exercises; even running 1 km.
Thursday	**general endurance** 2×2000m.cross; stretching 30 min.
Friday	even running 1500 m.; stretching 20 min.; 2×20 m running fine; 2× 20 m. running with high knees; 2× 20 m. three time exercise; 3×60 m. accelerating run; 2×3 ×60 m. downhill running; exercises over hindrances; even running 1 km.
Saturday	competition or: even running 1000 m.; stretching 20 min.; 3×60 m. accelerating run; 2×10 sec. running fine of the place; 2×10 sec. running with high knees of the place; 2×10 sec. three time exercise of the place; 2×10 sec. movement of the hands of the place; even running 1000 m.
Sunday	recreation or competition

Fig.2. *Theoretical Model for Phisical Preparation of Female Ahtletes during the Menstrual Cycle- Competition Season*

Discussion

Trainings intensity during the menstrual cycle should be consistent with the individual characteristic of the athlete and the specificity of the sport. We suggest training plans which may help to work out training programs of female sprinters.

There are scientific researches showing characteristics of the menstrual cycle with individual athletes and its course (Constantini NWet al. (1994), Cokkinades VE et al. (1990), DiFiori JP. (1995). We made a research on 97 female athletes and it was found that 75, 25% of them felt certain form of discomfort (pain, lack of appetite, drowsiness etc.) (S. Popova, D. Dobreva (2009). The same research also proved that 48,45% of the female athletes hardly endure physical loading or have reduced physical ability. This fact stresses on the necessity to apply an individual approach when working out training programs. Similar results were obtained with 23 tested female students who were not active athletes. (D. Dobreva, S. Popova (2009).

The premenstrual period should not be neglected. 87, 62% of the females who participated in the above research said to have felt some symptoms of the premenstrual syndrome. Mostly repeated were frequent change of mood, irritability, fatigue, loss of concentration, depression etc.. No doubt all these symptoms have a negative effect on the performance and the results at competitions.

We think it appropriate with elite female athletes to have hormonally modeled menstrual cycle for important competitions like European Championships, World Championships and Olympic Games.

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