

Conditioning of Sports Performance by the Women Contingent

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Abstract

Women differ considerably in terms of psycho-physiological features, having a different mental and emotional structure from that of men. In the process of practicing physical exercises, women request more attention than men, and the sport which they want to practice it must be adapted to their body and available feminine conformation. Because of excessive emotions, women may face greater difficulties in obtaining sports results. This situation is determined by the nervous system activity of women with different dynamics closely linked by the biological functions of the body in comparison to men. The muscle strength of women is lower than that of men, as the muscles are thinner, having more layers of fatty tissue. But women are superior to men in terms of accuracy, movement coordination and skill. The female body is characterized by a higher resistance to breakdown of an essential physiological needs range: oxygen insufficiency, hunger, insufficient sleep (simultaneously with the predisposition "to sleep much") and higher speed of development of a recovery processes number. Periods of human age in woman's life is characterized by a number of morphological and functional peculiarities. Differences between men and women become more pronounced with early sexual maturity. Among women, a special attention is called by the periodicity of a number of physiological functions that correspond to ovarian menstrual cycle (OMC).

Keywords: women, men, ovarian menstrual cycle, sport, conditioning factors

In sports performance, there are certain differences in terms of organization and methodical deployment of training for women and men. These distinctions are determined by a range of pedagogical, sociological factors, by anatomic and physiologic peculiarities of the female body and especially the attention to her health as a future mother.

We should not forget that men and women differ considerably in terms of psycho-physiological features: have a different mental and emotional structure and the sport that they want to practice must be adapted to their body, the feminine conformation and not to damage, but on the contrary, to strengthen and beautify. Also, the development of technology, mechanization and automation of labour, the emergence of a multitude of new specialties are now requiring that their occupation to be more necessary for development, both at working process as well within strengthening social relations, including those marital and family. Therefore, in the practice of physical exercises, women request more attention than men.

Among the main types of conditioning we can mention:

- ***the socio-psychological aspect***, that enables the possibility of revealing social conditioning of sport performance and the decisive role of beliefs on the final results of their sports activity. This aspect has an important role to determine the specific particularities because there are solved issues related to the combining their professional activity with maternity, which considerably reduces the time to practice physical exercises, especially sports. In addition, women have a greater excitability than men, this way causing an increased sensitivity. In physiological periods are nervous, irritated, concentrate hard, get tired easily in physically and mentally point of view. Their sensitivity is higher, they react promptly. The will of women is sometimes admirable and it is well channelled, it can lead to amazing achievements. Intelligence is alive and the ability to absorb very high. But in competitions they most often manifest a negative reaction toward these activities atmosphere. Because of excessive emotions they may face greater difficulties in obtaining results. This situation is determined by the nervous system activity of women with different dynamics closely linked by the biological functions of the body in comparison to men. A woman is irritable, excitable and susceptible especially during pregnancy, menopause. Physiologic and psyche "are interwoven in a whole bundle, sometimes bizarre" (Gudkov, Kondratov, 1980, p. 174).

- ***the biological aspect*** is made up of the anatomical and physiological basis of the woman's body and its age changes.

Nature has endowed the woman with distinctive features, which are handled by maternity, fact which determines the

formation of a peculiarities number of its body conformation and assign a specific character work of many organs and body systems in different periods of life. The body-built and physical appearance emphasizes one of the essential features of woman - femininity. A major importance in this regard rests with the skeleton, whose physiological features are the following:

✓ *Dimensions and special shape of the pelvis* – the basin is a bone circle that protects the internal genital organs and baby during his intrauterine development. For this reason, the volume of the woman's basin is much larger than that of men, it is wider, deeper. Forward tilting of the pelvis is much higher and ranges from 35 to 60 degrees. This pelvis tilting entails spine curvature in the lumbar region, so a lordosis, which, if it does not exceed a certain degree, is normal and physiological. The tilting of the pelvis in a too much forward way should be done according to the firmness of abdominal muscles.

✓ *Spine considerable length in relation to body size* creates wider intra-articular spaces than men and better elasticity of cartilage layer that complete it.

✓ *Short and broad chest.* The stature of women is shorter than men, narrower shoulders, longer bust, developed hips. Lower chest appears to decrease respiratory volume. The brittle, fine bones are well observed by comparing the arms and legs of women with men.

✓ *Characteristic position of femoral head and femoral neck* – They are located almost at a right angle to the femur bone. This ensures high amplitude of motion in the hip joint.

Also, the rounded forms of the female body are conditioned by the development of subcutaneous fat, which makes up 28% of body weight (males - only 18%). This is explained by the fact that oxidation processes ("burning" processes) arise slower in women, representing a defence property of the female body, that during menstruation and pregnancy, requires a higher consumption of energy. Women's trunk is longer than the male trunk; the upper and lower limbs are shorter and the waist is smaller by 10-12cm and the weight by 7-8 kg. This is explained not only by the fact that women are shorter than men, but also that their muscles are less developed and constitute about 32% of the body weight (for males being 45%). Thus, adipose tissue in women is generally more abundant, giving known grace to body lines, of course, if it does not go beyond the normal proportion.

The muscular force of women is lower than that of men, as the muscles are thinner, having a plurality of fatty tissue layers.

But women are superior to men in terms of accuracy and coordination of movements. They are more resistant to prolonged rhythmic activities and movement speed and the agility of small muscle groups (fingers, hands) are very well developed. Some muscle groups of women support much more complex functional efforts than men (chest muscles, diaphragm, abdominal muscles, pelvic and the intra-pelvic).

Although the physical force is lower than that of men, women adaptation asking for a long time, they are superior in terms of skill.

The cardiovascular, respiratory system, and other systems of the female body differ considerably in terms of functionality, by the respective systems of the male body. The heart is also smaller for women (weighing 10-15% lower than that of men), the volume of blood in circulation also, but the heartbeats are more accelerated. The frequency of heart contractions in men is an average of 66-70 beats per minute, and women - 72-78 beats. Cardiac contractions are weaker in women, fact which is one of the causes for lower blood pressure. The blood vessels - both arteries and especially veins - are weaker, blood circulation, especially in the hands and feet are poor. The number of red blood cells, which are lower than in men, disadvantages women, more so, as regularly they lose an amount of blood that they need to renew it.

The breathing frequency in women is higher and the depth - lower. This influences the vital volume of the lungs which is 1000 cm³ less than the one of men.

In this context, we can mention that women have lower functional reserves than men. Therefore, any physical exercise, including physical work, it causes an increase in heart rate, blood pressure, and the recovery period of these indices after exercise effort is higher.

At the same time, the female body is characterized by a higher resistance to breakdown of a number of physiological essential needs: oxygen insufficiency, hunger, insufficient sleep (simultaneously with the predisposition "to sleep much") and a higher speed scroll of a series of recovery processes. For example, women can support bleeding, incomparably greater than men (losing a liter of blood can be fatal for men, while women can bear this state even without transfusions of blood or plasma).

Periods of age in woman's life is characterized by a number of morphological and functional peculiarities, being conventionally divided into: childhood, puberty, sexual maturity.

According to the concerned literature it is recommended the following split schedule of age periods:

- preadolescents – 12 to 15 years ;
- adolescents – 16 to 20 years;
- mature (first period) – 21 to 35 years;

- mature (second period) – 36 to 55 years;
- early old age – 56 to 74 years;
- middle old age – 75 to 90 years;
- late old age – over 90 years.

Chronological age can serve as a general benchmark for teacher-trainer and doctor. At an individual approach it is necessary to give primary consideration to 'biologic' age, which can essentially differ from the chronological age.

Differences between men and women become more pronounced with early sexual maturity. Among women, a special attention is called by the periodicity of a number of physiological functions that correspond to ovarian menstrual cycle (OMC). It must be taken in mind that the female body's reaction to OMC can be varied. OMC is a local process of namely organs because in the same time it occur cyclical changes of vascular system, thermal regulation, metabolism, including their intellectual and physical working ability. Menstruation is a complex biological process, controlled by the central nervous system. Therefore, different emotions, psychological trauma can cause cycle disorders: profuse bleeding or delays of their occurrence, sometimes even their termination over a long period. The first menstruation occurs usually between 11 and 19 years old. This difference depends on the external environment where the girl is, the general physical development and his health condition. During this period, girls are more sensitive to cold, mechanical excitations of the skin. It is observed motor manifestations of anxiety - exaggerated gesticulation, impaired movement coordination, the ability to maintain balance, clumsiness of movement. Suddenly their character and behaviour change, they become shy and sometimes vice versa: manifest arrogance, unfounded vulgarity against people around. This way, they often change their interests, a reassessment of its forces taking place amid an exhaustion that installs quickly. During this period are formed reflexes of self-preservation and fear. For these reasons, sexual maturity period is unfavourable for the formation of new motor skills and to acquire new physical exercises. However OMC phases do not cause disturbances of the vital activity of the organism. Women's biological cycle duration has an individual character and depends on genetic factors, psychological status and other factors. Ovarian menstrual cycle is not established immediately in all girls. It is repeated over 21-26-28-30-36 days and lasts for about 3-5 days, sometimes a little more. Each term is considered normal if it repeated. According to generally accepted classification, OMC is divided into the following phases (there is reviewed a 28-day cycle):

- phase 1 – menstruation – the first four days;
- phase 2 – the follicular phase – from the 5th day till the 10th day (6 days);
- phase 3 – ovulation – from the 11th day till the 16th (6 days);
- phase 4 – secretion – 17-28 days (12 days).

Some authors consider the last two days of secretion as "premenstrual" phase and the fifth phase. In literature there are reports that, in these phases of the cycle, the ability to work of the muscles undergo radical changes. Most of all it was studied the changes that occur in a woman's body during the first phase or immediately before it, namely in the fifth phase. The research results on the first phase are however contradictory. We should probably agree to the idea that menstruation is not a disease but a physiological process, during which there is an essential restructuring of the female body. Also, people who, these days, become irritable, have a state of exhaustion, manifesting pain in the lower abdomen and sacral area should avoid large physical efforts, without consideration being sick (whilst in bed days approach), because after you exercise moderately, the general condition can be even better

According to data provided by S. Iagunov, during the first phase of OMC, 49% of women train systematically, 21% - irregularly and 30% do not train at all. Also, the author mentions that in the case 82% of women who train systematically, the results are maintained at the previous level, and some even establish personal records and only 18% of cases the results are getting worse.

The second phase of the biological cycle of women is considered the high capacity for work phase, the fourth is characterized by a reduced work capacity, and the lowest indices are registered in the third and fifth phases.

One of the objectives of rational practice of physical exercise by girls and women, which is realized on the basis of a systematic feature, consists in the formation of all organs and body systems the habit to function normally, typically, in all OMC phases.

Girls and women of all ages should not be allowed to participate in competitions in the premenstrual and menstrual phase (2-3 days until the beginning of the biological cycle). Training efforts should be reduced, avoiding jumps, jumps, falls, throws.

Girls and women who have lower categories can participate in sports competitions in the days mentioned above if they feel good and only with the doctor permission. During trainings with these athletes, it is necessary to conduct systematic training, gradual execution of ordinary efforts in all OMC phases. The sportswomen who hold high categories should be prepared, through systematic training, for participation in the competition at any stage of biological cycle without harm to their health.

To all women special training and participation in competitions during pregnancy are contraindicated. Special training

can be resumed no earlier than 8-10 months after birth. But even after a two-year break, general and special readiness can reach the previous level, and often can already exceed more than 6-8 months. Many sportswomen becoming mothers have not only become champions but have exceeded a lot their personal performance.

In conclusion, we mention that biological peculiarities of the development of the growing female body at ontogenesis stage from 4 to 20 years are the following:

- completion of basic motor development at the age of 14;
- rapidly motor developing at the early stages of ontogenesis - from 4 to 7 years;
- heterochronic character of development, both qualitative forms of manifestation of each activity and overall driveability of the whole, which is typical for all ages;
- accelerate the motor development during "puberty jump" - from 11 to 13 years;
- prevailing regressive changes in the stage from 15 to 20 years in the dynamics of age and motricity of female body;
- clear seasonal dynamics of spontaneous motor activity;
- qualitative sexual specificity of growing female body: the motricity of girl, adolescent, the woman is not a "minimized copy" of boy motricity, of teenager and man;
- regarding the motor development, every age is unique and unrepeatable: it contains both "growth points" and factors that limit it;
- the main qualitative features in the ontogenesis of motor skills normal development of women are the high and moderate intensity resistance and active flexibility.

Thus, in the ontogenesis of movement biological need of growing female body from 4 to 20 years, four periods can be clearly delineated: 4-7 years – acceleration period; 8 years - "school slowdown" period; 9-13 years - biologically optimal period; 14-20 years - motor deficit period (Iankauskas, Lagvinov, 1974).

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