

SOME FEATURES OF WOMEN'S TRAINING

By Tiina Torop

The author discusses the anatomical and physiological differences of women that influence training procedures, concentrating on strength development as one of the most important factors to improve performances. The article is a slightly condensed translation from Kehakultuur, Vol. 47, No.19, 1987, published by Periodika, Tallinn, Estonian SSR. Re-printed with permission from Modern Athlete and Coach.

The comparison of men and women in sport leads frequently to emotional views that women should copy everything that men are doing in training to get as close as possible to the performance capacity of males. While there are several common aspects that apply to both sexes in sport, it should nevertheless be understood that a woman is not a scaled down man. What follows in this text is therefore an attempt to discuss some of the anatomical, physiological and psychological differences of the females in sport.

MENSTRUATION

Neal of United States has correctly claimed that the understanding of women's sport is badly influenced by traditionally biased views. Among them was for a long time an understanding that training and competing during menstruation is harmful for the organism. Marker, for example, discovered in a study conducted in 1925 that only 6% of the 15,000 athletes surveyed trained during menstruation. The situation today is reversed.

It is actually interesting to note the fact that women have been frequently responsible for personal best performances during menstruation. According to Tosetti, Fanny Blankers-Koen of Holland set seven out of her nine world records in sprinting and hurdling in the 1940's and 1950's during menstruation. Kindermann of the University of Freiburg has stated that the work capacity of women does frequently reach its maximal indicators during menstruation.

Of course, there can be individual problems as shown in a survey conducted by Jagunov and Stratseva. Their results indicated that 81.6% of women athletes turned in normal or better performances during menstruation, while 18.4% were below their normal standard. The authors did consequently divide women into the following four groups:

- Group 1 (55.6%) is made up of athletes who in all phases of their menstruation felt well and, according to functional tests, were capable of level performances.
- Group 2 (34.5%) includes athletes who during menstruation suffer from a hypnotical syndrome, characterized by general weakness, fatigue and unwillingness to train.
- Group 3 (5.1%) includes athletes who suffer from a heavy hypnotical syndrome, characterized by irritability, sometimes lack of coordination and difficulties to relax. Some suffer from stomach aches, headaches and sleeplessness.
- Group 4 (4.9%) is made up of athletes who suffer from lack of appetite, muscular aches, faster pulse rates and increased breathing rates.

As can be seen, the reaction of the organism to menstruation can differ considerably, making it clear that athletes in the first group can train and compete during menstruation, while those belonging to the last three groups should avoid training and competition at this stage.

PHYSICAL DIFFERENCES

The body proportions of men and women are different. Women have a longer upper body and shorter legs, lowering the centre of gravity 6% below that of men. This is responsible for a better balancing capacity but reduces movement speed and jumping height. Women also have narrower shoulders and wider hips.

The muscles of women are less developed and usually do not exceed 35% of the total body weight, compared with 40 to 45% for men. According to Letunov, 28% of the weight of women is made up from fatty tissue, while the average for males is only 18%. This means that women have 10 to 15% less active muscle mass and about 10% more passive fatty tissue. However, there are exceptions and Nett has drawn attention to the long legged, narrow hips and lean female athletes who represent better potential. This applies particularly to the development of such physical capacities as speed, strength and power, as women are considerably weaker than men in abdominal, shoulder and leg muscles.

Better joint mobility and flexibility, on the other hand, make it easier for women to perform movements that require a large amplitude. They have also advantages in events that require precise co-ordination because women adjust themselves better to timing and movement rhythm. Anokina, for example, claims that elite women track and field athletes are characteristically capable of using their coordination and joint mobility to determine closely their performance effort. She also claims that girls are more efficient in technique development, provided the learning procedures are adjusted to their work capacity.

Their learning procedures should therefore employ running at reduced speed, hurdling over low hurdles (50 to 60cm) with shorter distances (6.5 to 7.0m) apart, high jumping according to their ability etc. As far as hurdling is concerned, it should be kept in mind that girls are often hindered by fright. Courage must therefore be taught as part of hurdles training, combined with a large number of different jumping exercises over a variety of obstacles.

TRAINING PROCEDURES

There has been a lot written about the differences in the training procedures of men and women, although the information often lacks specificity. While very little help was available from sport scientists in the early days of women's athletics, contemporary information indicates that, despite the specific features of the two sexes, the main principles of training apply to both. The differences occur only in the contents, volume and intensity.

Training in track and field events assumes the performance of an enormous volume of running and jumping exercises. This requires the development of leg strength, particularly in the ankle and lower leg. Weak ankles, according to the medical adviser of the Soviet athletic team, Dr. Vorobjov, is responsible for many injuries. The development of ankle strength should therefore take place practically in every training session throughout the athlete's career.

All-round strength development exercises have a most important place in the training of female athletes. Weaknesses in the upper body strength do not only influence throwing and jumping performances but also running. The main task of the upper body muscles is to establish a solid posture. The development of upper body strength should therefore be regarded as the first assignment for women athletes. It can also be said that the differences between men and women are particularly noticeable in strength, a factor to be taken into consideration in the choice of training methods, as well as in perspective planning.

The development of weak muscle groups should take priority during the first two or three years of training. It will be followed by the development of all muscle groups before the prime mover muscles will receive priority. The last takes place when high level specialization begins. Anokina recommends employing in the early stages of strength development exercises that combine strength development with technique training. The use of medicine balls is a typical example of how strength can be developed parallel to the other physical capacities and the techniques of several events.

The learning of the throwing events is particularly difficult for girls. There are subjective and objective factors involved. Holding of the shot with the upper arm at shoulder height, for example, can be extremely difficult. The relatively longer upper arm also restricts the final delivery speed. Lack of finger strength makes it harder to control the implement and the direction of the delivery.

STRENGTH DEVELOPMENT

Female athletes, regardless of their chosen event, should develop all muscle groups during the first phase of specialization. Additional loading is introduced at this stage, using a complex of 8 to 10 exercises that are performed in two or three series at the end of each training session. Each series is made up from 6 to 10 repetitions and stretching exercises between the series are not to be neglected.

Strength development in the next specialization stage, when the classical barbell exercises are added to the program, becomes extremely important. However, there are still contradicting views on how to approach this phase, particularly about the weight of the barbell and other resistances used. This writer would like to stress here once more the need for strong postural muscles before any barbell exercises are attempted.

Specific strength exercises at the high performance level are performed in virtually all training sessions (5 to 6 times a week) or in 2 to 3 separate training days. Exercises are performed in series where the number of repetitions is reduced as the resistance is increased and the recoveries are lengthened. Strength development should make up about 40 to 50% of the total training volume during the preparation period and takes place parallel to technique development.

Particular attention at this performance level is directed to event specific exercises. Bondarchuk stresses here that the only positive approach at the high performance level is to employ event specific exercises. General all-round strength development belongs to lower performance levels. This principle also applies to women athletes.

Finally, it is important to keep in mind in the planning of weekly microcycles that better results are achieved in technique and speed development when this work follows immediately a strength orientated training load.

Strength preparation during the competition season is nearly as important as during the preparation period, although the work volume and the number of training days are somewhat reduced. It is recommended to employ strength exercises also in pre-competition training, using 2 to 3 fast repetitions of each familiar exercise against low or medium resistances.

NOTEWORTHY COMMENTS

Czechoslovakian authority, Dr. Kral, who has thoroughly studied women's strength training, has made several valuable comments on the problems. He recommends to women athletes to avoid the single maximal repetition method in

weight training because of the stress on the lower part of the pelvis. The same applies to exercises where the resistance is restrained

Women should take care in performing depth jumping exercises, a power development method widely employed by men. Depth jump place extraordinary demands on the weak joints and ligaments of women, who, for the same reason, should also use isometric exercises only on a limited scale.

In the performance of event specific exercises it is most important to preserve the movement structure and amplitude of the actual event. Restrictions to the amplitude and impediments to the rhythm are usually caused by excessive loading. Women must avoid this and should always strictly follow the principle of a maximum movement amplitude. Restrictions in the movement range strain ligaments and tendons, as well as affect the elasticity of the muscles. An increase in the overall load should therefore be first attempted through movement speed. Resistances can be increased only after adaptation has taken place.

In summary, it can be said that women athletes should not be worried that strength development exercises will change their figure. They should instead keep in mind the importance of the strength component in the performance power and the length or time it takes to develop it.