

Sports women and nutritional aspects

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■ ABSTRACT

The study was undertaken to find the effect of nutritional aspects taken by a sports woman. A sports woman with inadequate dietary intake of calcium and iron may require nutritional supplements, besides improving her dietary intakes. A sports woman with very low energy intake may require a low dose of vitamin and mineral supplement to meet the nutritional needs. If a sports woman is displaying signs of eating disorders, it is important to encourage her to seek professional help. She should also be encouraged to drink plenty of fluids. It is advisable not to wait until she starts feeling thirsty, because thirst means that she is already dehydrated. Fluid intake should be even more in hot and humid weather.

■ **Key Words** : Balance Diet, Weight control, Eating disorders

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Feminism is about freedom, the individual and collective liberty to make decisions, sports have freed women and continue to free women from restrictive dress, behaviours, laws and customs and from the belief that women cant or should not achieve or compete or win”(Nelson)

If we look into the history of women in sports, we have to go back to 776BC when the first Olympics was held in ancient Greece and women were totally excluded from it. In 396 BC, Kyniska, a Spartion princess won an Olympic race, but was barred from collecting her prize in person. But since 1722 when the first British fighter Elizabeth Wilkinson entered the boxing ring the women have not looked back. In 1805 the first ice skating race for Dutch women was held in Leeuwarden. Similarly in 1811 the first known women's gold tournament was held in Musselburgh Golf club Scotland. In 1884 women's singles tennis competition was added to Wimbledon.

Stay strong , play on” is the theme of NGWSD(National Association for Girls and Women in Sport Day) for the year 2010. Women involved in regular sports have some special nutritional needs in order to stay healthy as well as to perform well (Khanna and Prakash, 1990; Greednberg and Poram, 1986). Though the basic principles of sports nutrition are similar for men and women, females involved in regular sporting activity

do have increased needs for certain nutrients and may be more at risk of dietary deficiencies. The key nutritional issues for sports women include:

– Balanced diet, calcium intake, iron intake, weight control and eating disorders.

Balanced diet :

Calories :

Adequate calories intake is crucial for performance. The number of calories needed is determined by the number of calories burnt each day. There are two primary components that determine total energy expenditure (TEE). The first is resting energy expenditure (REE). REE is the amount of calories needed to maintain basic body functions while at rest such as for body temperature regulation. The second component is activity energy expenditure (AEE). AEE is the number of calories needed to fuel physical activity.

Carbohydrate :

Carbohydrate is a key when it comes to peak performance. During exercise, carbohydrate is the primary fuel source for both the muscle and the brain. The carbohydrates are broken by the body into simple sugar glucose which is

stored in the muscles and liver as glycogen. Sufficient storage of glycogen in the body is imperative for peak athletic performance. An athlete can train longer and harder when the glycogen stores are filled prior to exercise. As glycogen level decreases, the body can no longer keep up the energy demands of exercise, fatigue will set in along with a reduction in exercise intensity. Even if the supply of fat is adequate, it cannot be burned efficiently without sufficient carbohydrate. The body needs glucose to burn fat. Many studies have examined performance and carbohydrate intake. After prolonged exercise muscles are nearly emptied of glycogen. It is during this time that injury is more likely. Researchers have found that fuels rich in carbohydrates consumed during exercise improves performance. Before exercise meals should be rich in carbohydrate and low in fats and proteins. After 30 minutes of exercise again high carbohydrate diet is suggested to replace used glycogen. Foods with high glycaemic index like banana, raisins, sports drink are quite beneficial.

Protein :

Protein is needed to build and repair the body tissues. Protein along with carbohydrate has been found to promote muscle glycogen re-synthesis. Protein should be consumed in comparatively lower quantities before and after exercise.

Fats :

Fats provide energy and help in the absorption of fat soluble vitamins (A, D, E, K). Sports person should consume less than 30 per cent fat. A balance of monounsaturated fats polyunsaturated fats and saturated fats are essential. Trans fat should be minimized or eliminated from the diet.

Vitamins and minerals :

They are not sources of energy but they have many important functions in the body. e.g. vitamin D and Calcium are needed for strong bones and iron is needed for blood cells to carry oxygen throughout body. Certain minerals like potassium, calcium and sodium are called electrolytes. They are important during exercise because they affect the amount of water in body and muscles activity. Athletes should eat a balanced diet with a variety of foods to make sure they get enough vitamins and minerals.

Calcium intake :

Calcium is a mineral that plays an essential role in growth, development and maintenance of strong bones, muscle contraction and transmission of nerve impulse. Having adequate calcium during childhood and adolescence is important for developing an optimal peak bone mass. This then helps in reducing the risk of osteoporosis or thinning of the bones. Some sports women are at risk of inadequate calcium intake. The requirement of calcium for them is 1000 to

1500 mg/day. The best dietary sources of calcium are dairy foods, soy products, fish, green leafy vegetables etc.

Iron intake :

The mineral iron forms part of haemoglobin, which transports oxygen in blood and is also an essential nutrient for energy production and immunity. Athletes appear to be at greater risk of iron deficiency and specially women athletes are at particular risk. Strenuous exercises may increase iron losses through the destruction of red blood cells and losses in sweat as well as inadequate iron intake. Iron deficiency and subsequent iron deficiency anemia are associated with reduced athletic performance, fatigue, dizziness, shortness of breath and increased susceptibility to colds and infection. A blood test which measures blood iron and body iron stores (ferritin) is required to diagnose iron deficiency. If body iron levels are depleted, an iron supplement along with increased dietary iron may be recommended. Iron is found in diet in two main forms, haem iron and non-haem iron. Haem iron is found in lean red meat, poultry and seafood and is well absorbed by the body. Non-haem iron is found in plant foods such as breakfast cereals, dried fruit, legumes, green leafy vegetables, bread and grains. This form is not well absorbed by the body, although its availability can be enhanced by consuming vitamin C rich foods at the same meal. Tannins (found in tea), caffeine and phytates (found in wheat grains) on the other hand, can reduce iron absorption.

Weight control :

Keeping body fat low is the aim of many female athletes and in some sports, leanness is particularly prized. Excess body fat can be detrimental to performance. However, low energy intakes and extreme dieting behaviour will not achieve optimal performance. It is important that an active female who is concerned about her weight has formal body composition assessments and sets realistic body fat and eating goals with her sports dietitian.

Eating disorders :

The risk of eating disorders such as bulimia and anorexia appears to be increased in sports where a low body weight/fat is highly prized such as gymnastics, dancing and diving and it is important to recognize the early signs and seek professional help as soon as possible.

Conclusion :

Following conclusion were drawn from the present study.

- A sports woman with inadequate dietary intake of calcium and iron may require nutritional supplements, besides improving her dietary intakes.



- A sports woman with very low energy intake may require a low dose of vitamin and mineral supplement to meet the nutritional needs.
- If a sports woman is displaying signs of eating disorders, it is important to encourage her to seek professional help.
- She should also be encouraged to drink plenty of fluids. It is advisable not to wait until she starts feeling thirsty, because thirst means that she is already dehydrated. Fluid intake should be even more in hot and humid weather.

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