

## **A Comparison of a Vegetarian and Non-Vegetarian Diet in Indian Female Athletes in Relation to Exercise Performance**

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### **Abstract**

The study was conducted to explore the prevalence of vegetarianism and non-vegetarianism amongst the Indian female athletes and its effects on nutritional status and exercise performance of the subjects. Sixty four women national athletes attending national camps in preparation of international competition in the age group of 16-25 yrs participated in the present study. Anthropometric measurements viz; height, weight, body fat and lean body mass were taken and dietary intake pattern was assessed through 24 hour recall method. Performance was assessed by graded exercise till exhaustion. Blood samples were taken prior to exercise for assessment of haemoglobin. Results showed prevalence of non-vegetarianism was high amongst Indian sports women (61.9%) than lacto (22.2%) and ovo-lacto vegetarians (15.9%). None of them were pure vegetarians. Body fat was significantly higher among lacto vegetarians ( $27.2 \pm 4.2\%$ ) than non-vegetarians ( $24.3 \pm 4.0\%$ ) and ovo-lacto vegetarians ( $23.1 \pm 1.92\%$ ). No significant difference was found for energy and carbohydrate intake between the three groups. Protein intake was significantly higher in non-vegetarians as compared to ovo-lacto vegetarian and lacto vegetarian group ( $p < 0.01$ ) and fat intake was higher in lacto vegetarians as compared to ovo-lacto vegetarian and non-vegetarian group ( $p < 0.01$ ). B-complex vitamins, iron intake, haemoglobin concentration ( $p < 0.05$ ) were high in non-vegetarians. Calcium and fibre intake was high in lacto-vegetarians ( $p < 0.05$ ). Endurance time and recovery was better in non-vegetarians than other groups ( $p < 0.05$ ). The present study shows prevalence of non-vegetarianism was high in Indian National sports women than lacto, ovo-lacto vegetarianism. Some nutrients intake, haemoglobin level and endurance time was better in non-vegetarians than lacto or ovo-lacto vegetarians.

**Key Words: Prevalence, Dietary Intake, Nutritional Status, Endurance Time, Indian Sports Women**

### **Introduction**

In India due to the various socio-economic and religious beliefs, the dietary habits vary amongst different populations. An increasing number of athletes are adopting vegetarian diets for ecological, economic & religious reasons (Nieman, 1999). A well-planned and varied vegetarian diet is perfectly consistent with good health and can potentially reduce the risk of many chronic diseases (White & Frank, 1994). Physical activity, athletic performance, and recovery from exercise are enhanced by optimal nutrition (Joint Position Statement, 2000). Multiple benefits of vegetarian dietary practices that extend to enhanced physical fitness

and performance have been explored since the early 20th century (Nieman, 1988). Athletes who were practicing meatless dietary regimen most frequently reported low energy intake, along with low levels of vitamins and minerals (Lukaski, 1995) particularly B-complex, calcium, iron, and zinc (Grandjean, 1987, Seiler, 1989). However vegetarian diets can meet the nutritional requirements of athletes with appropriate selection of foods (Joint Position Statement, 2000). Many studies have been conducted to compare the athletic ability of vegetarian vs. non-vegetarian subjects, but, no difference has been reported (Cotes et al., 1970, Williams, 1985, Hanne et al., 1986). Few recent investigations relating