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## Soybean – An effective therapeutic intervention in dyslipidemia

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### ABSTRACT

Chronic-degenerative diseases are a growingly health problem all over the world. The confluence of dietary errors and improper lifestyle practices has aggravated the epidemic. It is well known that the modification on lipid concentration is a useful approach to decrease cardiovascular mortality. The study was undertaken to investigate therapeutic effect of 90 days oral administration of soya nuts on 100 dyslipidemic subjects above 40 years of age selected by purposive random sampling. The subjects were divided into two groups a control group and an experimental group. The baseline questionnaire requested information about the demographic profile and main known risk factors for dyslipidemia. Lipid profile of the subjects was estimated by using standard analytic techniques. It was observed that mean change in lipid profile value and BMI was significant at 0.05 level except HDL level in females and VLDL levels in males. Mean change in daily nutrient intake of calorie, total fats and saturated fats was reduced in experimental group as compared to control group. When the lipid profile values of sedentary and moderately active subjects in control and experimental group were compared, it was found that overall improvement in lipid profile was more marked in experimental groups. Thus it appears that soyabean may be an effective intervention in dyslipidemia.

**Key words :** Dyslipidemia, Therapeutic intervention, Soybean

### INTRODUCTION

Cardiovascular disease (CVD) threatens to cripple India's workforce and stunt India's growth if timely and appropriate public health measures are not instituted (Goenka *et al.*, 2009). Blood Cholesterol levels are largely determined by the proportion of dietary energy derived from trans fats, saturated fats, polyunsaturated fats and refined carbohydrates (Warenejo *et al.*, 2006 and Pedersen *et al.*, 2005). The National Cholesterol Education Program's Therapeutic Lifestyle Changes diet includes unsaturated fats, fiber, and plant sterols/stanols. The whole foods approach incorporates increased consumption of fruits, vegetables, whole grains, and fish; and the American Heart Association guidelines emphasize functional foods like soy protein (Victoria *et al.*, 2008). Cassidy *et al.* (2006) assessed the effect of soy isoflavones which reduced low density lipoprotein cholesterol. Soy lecithin lowers serum cholesterol levels (Hori, 2001). It also contains saponins. Soybeans, as a major source, have a saponin content of five to six per cent by weight. Saponins bind cholesterol and bile acids in the gut, lowers the cholesterol (Timothy, 1999). Soyabean has been reported to be able to lower total cholesterol levels by 30%. (Desroches *et al.*, 2004). The present investigation was planned and

conducted to assess the effect of soyabean supplementation on dyslipidemia.

### MATERIALS AND METHODS

The present study was conducted on 100 dyslipidemic subjects (50 males and 50 females) above 40 years of age who were selected from different clinics and hospitals of Gwalior city by purposive random sampling and divided into 2 groups a control and an experimental group (on soyabean supplementation), each group including 25 males and 25 females. All the necessary information (age, sex, activity, life style pattern, family history of disease, present complaints etc) was gathered through pretested interview schedule. A detailed dietary profile was computed using a combination of 24 hour recall technique and weighing method for consecutive seven days. Sensory evaluation or the organoleptic quality of soya nuts was judged by a panel of 6 faculty members from the Home Science department of KRG College on the basis of 9 point Hedonic scale (Shrilakshmi, 2008). Quantity of Soya nuts to be given as supplementation were standardized (30 g/day). A variety of clinical trials have demonstrated that consuming 25 to 50 g/d of soy protein is both safe and effective in reducing LDL cholesterol by 4% to 8%. The beneficial effects of

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