

Research Paper

OAT AND CARDIO HEALTH

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ABSTRACT

A number of positive clinical trials and interventional data on consumption of oat and related products have shown a beneficial effect in reduction of serum cholesterol and LDL. Oat as a cereal has good amount of protein with better-quality amino acid balance. It has essential vitamins and minerals particularly vitamin 'E' and folic acid. In addition, oat contains soluble fibre (beta glucan) which plays a significant role in bile acid metabolism. Hence eating of oat and oat related products in daily diet may have a therapeutic effect in maintenance of cardio health.

Key words: Oat, Betaglucan, Oat milk, Serum lipid, Diet, Breakfast cereals.

Introduction

An ounce of prevention is worth a pound of care. Health care involves not merely medical care but all aspects of preventive care, though life expectancy has increased but chronic diseases related to aging and lifestyle are expected to take a heavy toll. A significant percentage of our population suffers from chronic deficiency and many are malnourished.

About 57 crores people are "calorie sufficient but nutrition insufficient" or in other words many are spending on fast foods headed for lifestyle diseases such as hypertension, obesity and diabetes (Ingredients south Asia 2001).

Hence, food is no longer the only means to fulfill the nutritional needs of the society but to solve the myriad health problem.

Oat in particular has a great potential to be used as a raw material for different kinds of processed foods due to its high palatability. In addition it has a high nutritious balance one can state that the nutritional composition of oat is exceptional. Oat contains a high percentage of protein with a superior amino acid balance. In contrast to other cereals oat also contain a high percentage of lipids that are highly unsaturated and contain substantial amounts of essential fatty acids. Oat are also considered as a great source of number of essential vitamins and minerals such as vitamin 'E', folic acid etc (Lockhart & Hurt 1986)

Significance: oat and products from oat have shown to be beneficial for weight loss, in reducing cholesterol, hypertension and also in carbohydrate metabolism.

(Functional Foods & Nutraceuticals, April 2005).

Daily ingestion of modest quantities of oat betaglucan has significant reduction in serum cholesterol. The reduction in LDL (low density lipoproteins) is dose dependent and with the subjects with initial high cholesterol level.

In US the food and drug administration health claim addressing the cardiovascular benefits of oat beta-glucan.

The claim(1997) provides a minimum effective daily dose of 3gm of betaglucan soluble fibre from oat per day.

Studies on Oat and Cardio Benefits

1. Prof Adrian Kennedy, Managing Director, Lifetime Wellness Rx International Ltd, Apollo Hospitals Group Company, said, "The good news is that majority of premature heart attacks and strokes can be prevented through healthy dietary regimens, regular physical activity and control on smoking and alcohol.

2. A body of independent research exists on beta glucans from oat. Over 30 years of research on oat bran beta glucans equates to hundreds of studies, with thousands of human participates. (clinical research on oats)

- [Beta glucans decrease LDL 5%](#)
- [11 mg/dl decrease over 6 weeks](#)
- [Serum cholesterol lowered by 15.6mg/dl](#)
- [Concentrated beta glucan shows biggest difference](#)
- [LDL cholesterol 8.5% lower](#)
- [2 ounces of oats lowered serum cholesterol](#)
- [Helped remove 50% more bile acids](#)
- [9.6% reduction in LDL](#)
- [11.6% 67 studies show up to 15mg/dl](#)

· US FDA significant scientific agreement that 3 gm of soluble fibre daily from oat in a diet low in saturated fat and cholesterol, may reduce the risk of heart disease.

3. A trial of oat in children with newly diagnosed celiac disease The Journal of Pediatrics (Volume 137, Issue 3, Pages 361-366) consumption of a commercially available oat cereal product for 6 months is safe for children with celiac disease who are started on a gluten-free diet. Studies are needed to determine the long-term safety of including oat cereal in the gluten-free diet.

4. Oat Products and Lipid Lowering, This analysis supports the hypothesis that incorporating oat products into the diet cause a modest reduction in blood cholesterol level. (JAMA. 1992)

Conclusion:

Heart disease is dependent on many factors, which includes kind of diet, family history of the disease, age, physical activity, tobacco usage, and the presence of other risk factors, such as high blood pressure or high cholesterol levels.

High amounts of cholesterol in the blood can build up in the arteries as fatty deposits called "plaques". Plaques that form in the blood vessels around the heart can limit the flow of blood to this important muscle, preventing it from working properly and possibly even leading to a heart attack (Health Canada [website](#) accessed July 19, 2006).

Currently in India even though oat products are used extensively by large urban population, there is no scientific data among Asians, therefore more research on oat consumption and clinical trials on its effects on cardiovascular health should be researched.

A value added products should be developed to consume oat in day to day life along with normal diet to add a therapeutic advantage.

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