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### Edible oils: health benefits beyond basic nutrition

Fat is an important part of our food as it serves many important physiological functions such as meeting energy requirements, being structural component of cells, starting component of various inflammatory mediators, energy reserve and provides insulation against freezing temperatures in new born. While it plays an important part in our food and nutrition, its quality and quantity bears a huge impact on overall health. Edible oils are one of the major contributors of fat in our diet; it enhances palatability of food, shelf-life and makes food tasty. Many researches have indicated that the selection of the fats consumed and its quantity has played large role in the aetiology of CVD & associated disorders. Majority of these studies have been carried out on the composition of fatty acids consumed, its positional distribution in glycerol backbone and relative ratios of fatty acids. Based on this research, many nutritional bodies across the globe have recommended guidelines on the fat intake, types of oils in terms of its fatty acid composition for meeting nutritional requirements. In vegetable oil, PUFA mainly constitutes from n6 (linoleic acid) and n3 (linolenic acid). Omega-3 fatty acids (n-3 FA), have emerged as potentially preventive and therapeutic agents to decrease CVD by acting on pathways related to atherosclerosis and myocardial infarction. However, it is also known that the increase in the unsaturation in the fatty acids increases its vulnerability to oxidation during storage and cooking in geometric proportions and hence the n-6 and n-3 fatty acids undergo higher oxidation in presence of oxygen. This can lead to generation of free radicals which breakdown unsaturated fatty acids leading to harmful secondary oxidation products. These need to be kept in control and hence it is important to provide an antioxidant system in the oil which can protect oil as much as possible against the oxidation. In this context various commercially available vegetable oils such as rice bran oil (RBO), safflower oil (SFO), soya bean oil (SBO), have been explored and studied extensively at our laboratory for its keeping quality and nutritional benefits in pre-clinical and clinical models. Out of several blends tested we have shown that refined Rice bran oil and Safflower oil blend in the ratio of (7:3 wt/wt) in was effective and beneficial not only in keeping quality during frying and providing optimal nutritive value but also improved lipid and inflammatory biomarkers in a clinical trial. Thus, it can be concluded that lifestyle modifications along with substitution of cooking oil by the blend oil with antioxidant technology results in significant lowering of LDL-C levels and has positive benefits on the inflammatory markers thus having a positive impact in overall health especially cardiac health in hyperlipidemic subjects.

### Biography

Scientist with over 11 years of experience in Nutrition research, academics and industrial R&D. Specialized in Public Health Nutrition with extensive knowledge in Nutrition Science. Areas of interest include childhood growth, nutritional anthropometry, body composition assessment and heart health. In past, has supported the innovation programme at Glaxo SmithKline Consumer Healthcare Pvt Ltd by leading and managing research for new product development on various science platforms. Presently working as the Principal Nutritionist, at Marico Ltd, Mumbai and working on innovating healthier edible cooking oils.

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