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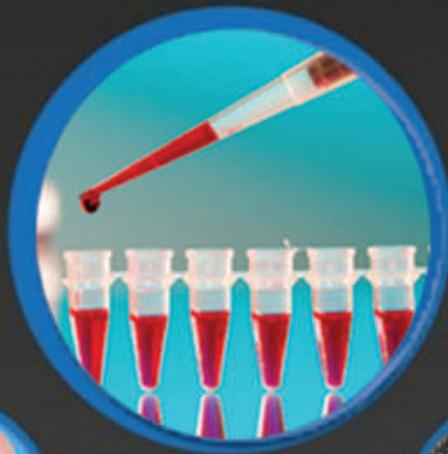
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Nutraceuticals - health promoting, disease preventing with medicinal properties

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A nutraceutical is any substance considered as a food or its part which, in addition to its normal nutritional value provides health benefits, and it can be termed as phytochemicals and functional foods, and it is considered natural and bioactive compounds that has health promoting and disease preventing properties. It is non-toxic food component that has scientifically proven health benefits.

With the increasing healthcare costs, fast changing lifestyle, ageing population and rising interest in attaining wellness through diet, Indian nutraceuticals industry has emerged as one of the fast growing industry segments. Both the food processing and the pharmaceutical industries are increasingly looking at the potential of this new sector for their future growth.

Nutraceuticals are available in the form of isolated nutrients, dietary supplements and specific diets to genetically engineered foods, herbals and processed foods such as cereals, soups and beverages. Nutraceuticals provide all the essential substances that should be present in a healthy diet for the mankind. They also provide energy and nutrient supplements to the human body, which are essential for maintaining optimal health. Nutraceuticals are broadly used in the food

and pharmaceutical industries. Some nutraceuticals are useful in maintaining healthy prostate function, remedy for restlessness and insomnia. Nutraceuticals, such as glucosamine and chondroitin sulphate, offer possible chondroprotective effects against joint injury. Dietary factors play a significant role in premature chronic disease appearance, disease progression, morbidity and mortality. Approximately 40-50 per cent proportion in cardiovascular disorders, 35-50 per cent proportion in cancers, and 20 per cent proportion in osteoporosis is attributable to dietary factors. Use of food as medicine for treatment and prevention of various types of disorders is not a recent development. Fortification of table salt with iodine and wheat flour with iron/folic acid has been used with specific aims of prevention of iodine deficiency goitre and anaemia for long. Similarly, food fortified with vitamin A has been found to be a feasible and cost-effective approach to reduce vitamin A deficiency.

The nutraceuticals sector is a dynamic and evolving sector that provides possibilities or opportunities to become one scientific invention with fast growing consumer interest in health increasing food supplements. Nutraceuticals will continue to have great appeal because they are convenient for today's lifestyle. The greatest challenge still remains in the public policy and regulatory areas, which will encourage research and development of products

that provide health benefits and permit truthful and non misleading communications of nutraceuticals while protecting public health system.

The market size for nutraceutical and health ingredients sector is currently estimated at around Rs. 3,000 crore in India. The sector registers an annual growth rate of 25 per cent. Huge growth of nutraceuticals sector has lured several leading pharmaceutical companies such as Sun Pharmaceutical Industries, Glaxo Smith Kline, Piramal Enterprises, Abbott Laboratories among others. Some of the other leading players in the country are Herbalife, British Biologicals, Amway, Nestle Nutrition, Sami Laboratories, Biogen Phytotec Extracts, Green Chem, Parrys and DSM Nutrition of Royal DSM. Another trend is the opening of wellness stores in major cities across the country creating awareness among the customers about the nutraceuticals. It is possible that this trend may continue to gain momentum in the coming years. As launching of these nutraceutical products has increased in the recent past by both pharmaceutical and food companies with tall claims of curative and preventive properties of these products, the government has been contemplating to bring some regulatory control on their manufacturing and marketing in interest of public healthcare system.

Recently, the Food Safety and Standards Authority of India had set up a Committee to put in

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place some sort of a regulatory mechanism for special food products such as nutraceuticals and food supplements marketed in India. The Committee submitted its report to Food Safety and Standards Authority of India. The recommendations of Food Safety and Standards Authority of India are basically a set of guidelines for the approval of dietary supplements and nutraceuticals manufactured in the country. The report was prepared based on a detailed study of nutraceuticals conducted in consultation with all the stakeholders. At present, there are no set of specific standard regulations in the country to regulate nutraceuticals although some State government health authorities occasionally monitor their therapeutic claims. Huge number of ayurvedic products are also sold as nutraceuticals or dietary supplements in the country today although there is no reliable statistics of the size of the market and the product classification. The need for such basic data is significantly considering the fact that these products belong to direct to consumer segment. The government, therefore, felt the need for bringing a set of standard regulations in the manufacturing of nutraceuticals as there has been a big spurt in the number of these nutraceuticals with exaggerated health claims.

In the Western world of advanced nations nutraceuticals have become a part of the day to day life. It is used in diseases such as joint pain, insomnia, rheumatoid arthritis, degenerative eye condition, enlarged prostate, perimenopause, weight management, cardiovascular health, immunomodulators and memory loss, etc.

Nutraceuticals are promoted across the globe, claiming

to be health promoting and disease preventing products with medicinal properties. This category comprises of herbals, vitamins, minerals and certain animal products. Nutraceuticals also include functional foods claimed to offer a specific health benefit based on their ingredients. In the United States, the US FDA regulates nutraceuticals under a different set of regulations. As per the Dietary Supplement Health and Education Act 1994, it is the Nutraceutical manufacturing companies' responsibility to ensure that nutraceuticals are safe before it is going to markets. The US FDA is empowered to take action against any unsafe product only after it reaches the market. Nutraceutical companies have to make sure that the information on the product label is truthful and not misleading.

In European Union, food legislation covering nutraceuticals is largely under the European Food and Safety Authority. New products from Europe are presumed to have passed stringent European development and quality requirements. In Canada and Australia, nutraceuticals are regulated more like a drug

than food products. In India, there has been a steady growth in marketing of nutraceuticals including ayurvedic products by several Indian and international companies with health claims.

Most of the food and health supplements contain vitamins A, B1, B2, C and E, which are drugs covered under DPCO and their prices are fixed by the NPPA. At the same time vitamins need to be allowed both in health and nutritional supplements if they are within the recommended dietary allowance stipulated by Indian Council of Medical Research. And if vitamins are removed from health supplements, it will have far reaching effects on the health of the consumers.

At present, the nutraceuticals market in Indian is highly urban-centric and the market is going to be more than double of present market within next four to five years. Currently functional foods have largest share of the Indian nutraceuticals market followed by dietary supplements. This trend will drive the market for fortified foods and probiotics. With the rise of lifestyle related diseases in urban India and penetration in rural India.



Bowel wall thickening (BWT) is an increasingly recognized entity on Computed Tomography (CT) of abdomen. It could represent inflammatory, infectious, ischemic or neoplastic pathology or sometimes it may be normal. Clinicians often see patients with or without abdominal complaints with imaging showing bowel thickening. Based on imaging findings such patients are often referred for endoscopic evaluation. However there is always a dilemma for doing diagnostic endoscopy as there are no definite guidelines published on this issue. This dilemma arises in patients with low index of suspicion for sinister pathology or in the elderly patients in whom invasive procedure can cause high procedure related complications.

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