

**A REVIEW: ROLE OF NUTRACEUTICAL IN FUTURE THERAPEUTICS****Apeksha V. Masal\*<sup>1</sup>, Nilesh A. Nalawade<sup>2</sup>, Sagar D. Shinde<sup>3</sup>, Swati B. Kavade<sup>4</sup>, Lokesh K. Patil<sup>5</sup> and  
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**ABSTRACT**

Nutraceutical as "Nutrition and Pharmaceutical" that provides food as "Medicine". That have health benefits to reduce the risk of various chronic diseases and also provide basic nutritional requirements of humans. The examples of nutraceuticals are antioxidants, dietary supplements, fortified dairy products, citrus fruits, vitamins, enzymes, minerals, proteins, and cereals. Nutraceutical will play important role towards future therapeutics various chronic diseases. So mainly nutraceutical used various diseases obesity, cardiac diseases, cancer, diabetes, osteoporosis, arthritis, cholesterol etc. the nutraceutical has lead the new era between the health and medicine. The aim of this article to acquire and provide knowledge of "Nutraceutical" and their uses in various diseases.

**KEYWORDS:** Dietary supplements, Nutraceutical, Food.**INTRODUCTION**

The term of "Nutraceutical" was from "Nutrition" and "Pharmaceutical" 1989 by DeFelice and it was originally defined as a food provides medicinal and health benefits, including prevention and or in treatment of diseases.<sup>[1]</sup>

**History of Nutraceutical:** The concept of nutraceutical want back three thousand year ago. The grate scientist Hippocrates (460-377 B.C) started let "food" be the medicine and medicine be the "food" it predicts the appropriate relationship between food for health and their therapeutic benefits. In the early 1900s, in united states food manufacturers start to adding small quantity of Iodine used to prevent or in treatment of Goiter like diseases. Now a days food and nutrients play vital role in normal functioning of the body. They are very helpful to maintaining the health of the individual and to reduce risk of various chronic diseases. Nutraceutical are the medicinal food that play a role in enhancing health , modulating immunity and thereby preventing as well as treating specific diseases. They are easily available and economically affordable. Nutritional therapy is a healing system using dietary therapeutics or nutraceutical as a complementary therapy. This therapy is based on the food can not only be source of nutrients and energy but could it also provide medicinal benefits. By using nutraceutical as nutritional therapy, it achieves this goal by using such nutraceutical in detoxifying the body, avoiding vitamin and mineral deficiencies.

Thus the field of nutraceutical can be envisioned as one of the missing section in health field which gives benefits

to each individual life. It has scientifically proved that and supported by various research articles that nutraceutical are effective into prevention and treatment of various disease conditions.<sup>[2-5]</sup>

**Need of Nutraceutical:** As we know "Health is wealth", all consumer or patients are very concerned about how their health managed on daily basis, route of administration of product, price of medicines or product. So they are frustrated with all expenses, high techniques used for disease treatment in modern medicinal system. There for future therapeutics seeking nutraceutical as alternative or complementary system or products.<sup>[6,9]</sup>

**Classification:** Nutraceutical as nutritional foods, which can be classified on the basis of following points.

- On the basis the source of nutraceutical, basically Nutraceutical obtained from plants, animals, minerals or microbial sources.
- On the basis of presences of chemical constituents.<sup>[5]</sup>

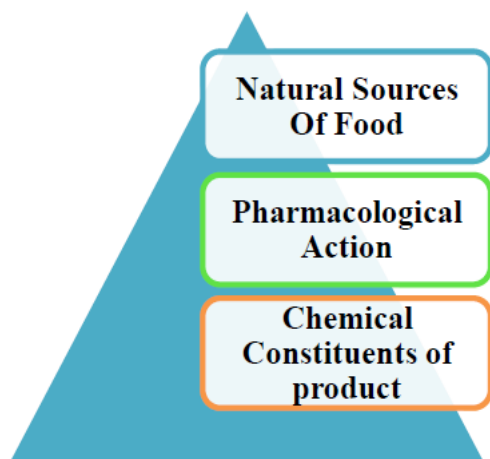


Figure 1: Classification of Nutraceuticals Based On.

**Traditional and Non-traditional Nutraceutical Food:** Wide variety of nutraceutical food available in to market, which falls in traditional and non-traditional foods.

**Traditional Nutraceutical:** Under this category of traditional nutraceutical food, in which no change to food are made. It is in simply natural form, whole foods with their health benefits. In this traditional foods, many fruits, vegetables, grains, fish, dairy, and meat products contains several natural constituents that provide basic nutritional requirements. For examples tea and chocolate have been noted in some studies to contains some healthy benefits. As like omega-3 fatty acid, pure milk, respectively.

**Non-traditional Nutraceutical:** This non-traditional foods derived from agricultural sources, and added some essential body nutrients or/ ingredients such as orange juice fortified with calcium, cereals with added vitamins or minerals. Milk with various flavors are non-traditional nutraceutical. But current and future focus on to improve the nutritional quality of corps and nutraceutical product.<sup>[2,6]</sup>

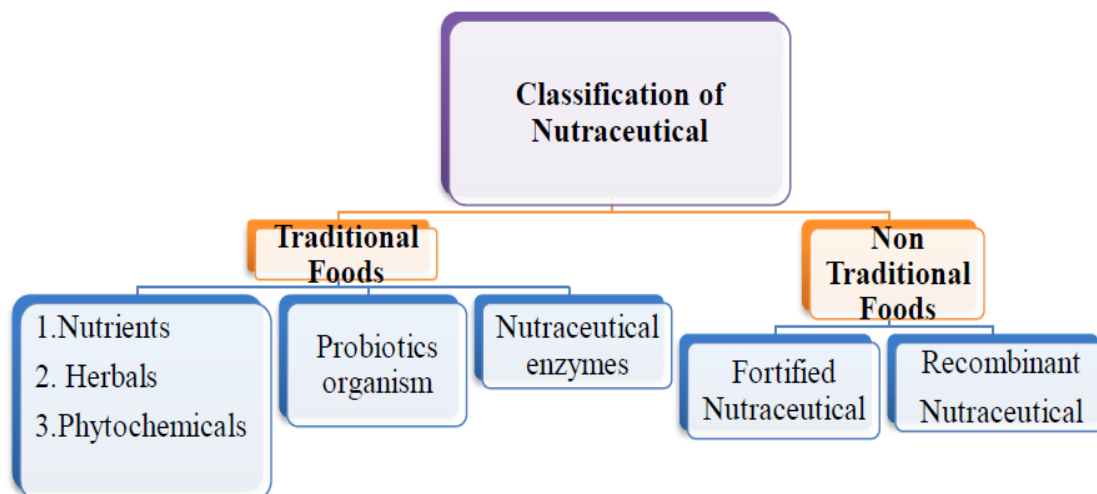


Figure 2: Category of Nutraceuticals.

Table 1: Health Benefits of Natural Nutraceuticals.<sup>[1,9,10]</sup>

Sr.no	Natural nutraceuticals	Health benefits
1	Turmeric	Anti-inflammatory, pain relief, improving liver function, reduces risk of cancer, improve digestion.
2	Garlic	Improve digestion, reduces risk of heart attack, antihypertensive
3	Fennel fruit	Improve digestive system, help in reducing weight
4	Mangos, sweet potato, corn	Vision improving agents
5	Green tea	Promote weight loss, help to reducing risk of blood cholesterol, anti-oxidants.
6	Citrus fruits	Anticancer, Anti-oxidant agents, improve skin health.
7	Amla	Vitamin C reach, Balance neuroendocrine system, fight against lungs problems,
8.	Jamun	Diabetes, diarrhea, pharyngitis, splenopathy and ringworm
9	Lactobacillus (probiotic)	Improve digestibility of all milk product. Natural antibiotics targets to pathogenic bacteria
10	Carrots	Antioxidant, protect the cornea for UV lights.
11	Beans like all legumes, cereals like oats, and some fibrous fruits	Maintained healthy digestive system, Anticancer activity.

- **Role Of Nutraceutical In Chronic Diseases Treatment**<sup>[6,7]</sup>

- **Nutraceutical in CVD:** In cardiac vascular disease this disorder of heart and blood vessels, including hypertension, heart failure, peripheral vascular diseases. Because of low intake of fruits and vegetables are associated with higher chances of CVD. So nutraceutical in form proper proportion of diet, like diet contains antioxidants, dietary fibers, Omega-3 polysaturated acid. Also some vitamin and minerals also recommended with physical exercise, it helpful for prevention and treatment of CVD.
- **Nutraceutical in Obesity:** Now day's major population having obesity problem, Obesity is mainly responsible for many disorders like angina pectoris, congestive heart failure, hypertension, hyperlipidemia, respiratory disorder, renal vein thrombosis, osteoarthritis, cancer, reduced fertility. The prevent and in treatment of obesity nutraceutical play important role towards health, dietary supplement vitamin C, chitosan which significantly reduced body weight. Some nutraceutical like conjugated linoleic acid, capsaicin, Momodica charantia, and Psyllium fiber shaving antiobese properties.
- **Nutraceutical in Diabetes Mellitus:** Diabetes mellitus is abnormal condition of body which characterized by abnormal blood glucose level. The role of nutraceutical in treatment of Diabetes mellitus, providing dietary fibers from Psyllium. Good magnesium status reduces risk and improves insulin sensitivity.
- **Nutraceutical in Osteoarthritis:** Osteoarthritis is joint disorder; it is most commonly because of increased in weight, which results as additional stress on joint. In the treatment of Osteoarthritis nutraceutical like, Glucosamine (GLN) and Chondroitin sulfate (CS) are widely used. These nutraceutical have nutritive and pharmaceutical activity, seen to regulate gene expression and synthesis of NO and PGE2.
- **Nutraceutical in Allergy:** Allergy is body immune response, especially particular food, pollen and dust. Quercetin is under the class of flavonoids, they richest source of Quercetin is onions, red wine and green tea. Basically Quercetin is used as antihistamine, which opposes the action of histamine in body. That histamine is responsible for allergic and inflammatory. In hay fever, bursitis, gout, arthritis and asthma causes inflammations so Quercetin inhibits enzymes such as lipid peroxidases which responsible for inflammations. Quercetin have antioxidant property acts by scavenging damaging particles in the body known as free radicals.

## CONCLUSIONS

The nutraceutical have variety of therapeutic actions, which protect the human body over the various pathological conditions. Nutraceutical in chronic

disorders play key role such in Diabetes mellitus, Cancer, Obesity, Osteoarthritis and also in Neurodegenerative disorders. Therefore, future plan for nutraceutical is more focused on specific experimental models, human clinical trials, to understand the exact mechanism of action so it useful for prevention and in treatment of diseases.

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