

# THE CURRENT TRENDS AND FUTURE PROSPECTIVE OF NEUTRACEUTICALS IN THE HEALTH PROMOTION

## Abstract

There is a need of nutritious diet in life to support regular growth, improvement and aging, for maintaining proper weight so that it will reduce many ailments which will bring a good health and well-being. Four stakes of decent health consists of good nutrition, exercise, sleep and relaxation. In 1989 Dr. Stephen De Felice invented the term nutraceutical. these products are mixture among drug and food. It mainly includes peptides, amino acids, keto-acids, minerals, antioxidants and vitamins. Nutraceutical term mainly used to progress health, postponement the aging process, avoid chronic diseases, increase life expectancy or support the structure or function of body. Bioactive components isolated from herbals and animal source are used for artificial food preparaions for maintaining a good health. It is further classified into 'fortified' and 'recombinant' nutraceuticals. The later includes food with agricultural breeding or addition of nutrient.

**Keyword:** Bioactive component, peptide, antioxidant, Nutraceuticals.

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## I. INTRODUCTION

There is relationship between food, its function and diseases that occurs to the body. There is much recommendation from Canadian nutrition, dietary reference intake to make the way for chronic disease prevention. In recent years Canadians have been taking major efforts to control their health by using alternative or traditional medicine natural health products, harmonizing therapies. Nutrition plays great role in our state of wellbeing. As people are becoming aware of this field, manufacturer want to fulfill a consumer's requirement for product derived from foods that could be used to promote good health. The conclusion has been the formulation of growing scale of products called nutraceuticals.

**1. Dietary supplements:** Dietary supplements are ingredients which are taken by internal route to fulfill the diet. These

Ingredients may consist of minerals, vitamins, herbs, botanicals, amino acids, enzymes, organ tissues, glandular and metabolites. Dietary supplements also consist of concentrates or extracts which may occurs in various forms like powders, liquids, gels, tablets, capsules.

Pharmaceutical companies do not require to be permitted by the USFDA before marketing but companies need to register their industrial facilities with the FDA and strictly follow current good manufacturing practices. Dietary supplements might only be advertised to sustenance the construction or function of the body and may not privilege to treat disease or condition and must include a tag that says "This product is not proposed to diagnose, treat, cure or avoid any disease. These declarations have not been assessed by the food and drug administration." The examinations are when the FDA has revised and approved a health claim. In those circumstances the FDA also specifies the exact wording acceptable.

**2. Functional foods:** Functional foods are improved during processing and then advertised as giving some advantages as giving some advantage to consumer's from time to time extra complementary nutrients are added like vitamin D to milk. Health Canadian defines functional food as normal food that has ingredients added to supply specific physiological benefits.

The Japanese defines functional food that fulfill three requirements like

- It should present in their naturally tablets or powder.
- Daily consumed in food as diet.
- Biological process will be help.

## II. FUTURE OF NEUTRACEUTICAL

**1. Hypersensitivity disorder and nutraceuticals:** Allergy means hypersensitivity discombobulating of the immune system. It occurs usually when a person immune system respond to mild substance. Allergic reactions are distinguishing because of immoderate activation of definite WBC known as mast cell and basophils by a specific antibody called as Immunoglobulin E. This change causes inflammatory response which is painful.

Low density lipoprotein is protected by Quercetin LDL-C is basic reason for heart disease, Quercetin plays the role of antioxidant and trap free radicals. Quercetin is very helpful to diabetic patient because they are at greater risk of blood vessel damage from oxidative stress.

- 2. Nutraceuticals and Alzheimer's disease:** Commonly AD diagnosed in people over 60 years of age. In 2006 near about 26 million people suffer from AD while it is predicted to affect 85 million people by 2050. It is common form of dementia. There is no recovery of patient most of them get dead. Oxidative stress occurs most

Often due to many neurodegenerative disorders like AD women's are more affected to disease than men. Nutraceutical antioxidants like  $\beta$  carotene, lycopene, lutein, curcumin may produce positive result by combating oxidative stress.

- 3. Nutraceuticals and cardiovascular diseases:** Many researchers have concluded that less consumption of green vegetables, fruits, beans are linked with higher death in CVD. Most of CVD are avoidable. Many research papers and studies have reported an important role of diet rich in vegetables against heart disease.

However cases of CVD and investigation in this field are increasing. It is the term mentioned for disease of heart and blood vessels and commonly includes cardiac arrest, coronary heart disease, cerebrovascular disease, peripheral vascular disease, heart failure, high blood pressure, structural problems and blood clots.

For the inhibition and treatment of CVD it is recommended to administered nutraceuticals in the various forms like minerals, vitamins, dietary fibres, omega -3 PUFA, antioxidants along with daily physical exercise. Polyphenols are very important to change cellular metabolism and signaling, which causes reduction in arterial disease.

Flavonoids are present in apples, black grapes, onions, leafy vegetables, pomegranate, red wine and are present in phytoconstituents like flavonol, flavanones, flavones which are very important in preventing and curing of CVD.

Flavonoids stop the cyclooxygenase enzyme that breakdown prostaglandins and inhibits platelet aggregation. They also protect the vascular system that carries oxygen and nutrient to cells.

- 4. Nutraceuticals and cancer:** Now in many countries cancer has become major cause of death. According to IARC & WHO world cancer reports of 2003, 2008 and 2014 mentioned that cancer patient rate are increasing and is 20 million new cases in the year 2020 and is a rise in 60%

For prevention of cancer nutritional diet and healthy lifestyle should be followed. Many phytoconstituents plays important role in prevention of cancer like lycopene,  $\beta$ -carotene, carotenoids, citrus fruit flavonoids, saponins etc.

Citrus fruit flavonoids act as antioxidants and protect body from cancer. Flavonoids are present in fruits as their glycosyl derivatives. Aglycon occurs very rarely in juices. Most common sugar moieties like D-glucose and L-rhamnose.

Lycopene is a bright red colour carotenoid hydrocarbon present in tomatoes and other red fruits and vegetables like grapefruits, red carrots, watermelons, papayas.

It exerts cancer protective effects by minimizing oxidative stress and damage to DNA  $\beta$ -carotene- It is a pigment present in plants that give them their colour. It gives yellow and orange fruits and vegetables. The human body converts  $\beta$ -carotene into vitamin A. It has antioxidant activity and protects body from cancer and other disease.

Saponins- Saponins possess high structural diversity which is related to the anticancer activities. Saponins perform various mechanisms to prevent cancer like antioxidant activity, cell invasion inhibition, induction of apoptosis, cell cycle arrest. They are present in spinach, potatoes, clove, tomatoes which acts as anticancer agents.

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