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Review



Nutraceuticals Overview On Functional Foods And Dietary Supplements In Parkinson Disease

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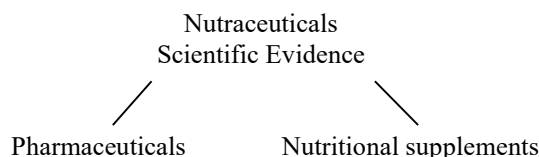
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	Abstract
Published on: 7 May 2024	<p>Nutraceuticals are products, which other than nutrition are also used as medicine a nutraceuticals product may be defined as a substance, which has physiological benefit or provides protection against chronic disease. Nutraceuticals may be used to improve health, delay the aging process, to prevent chronic disease, increase life expectancy, or support the structure have received considerable interest due to potential nutritional, safety and therapeutic effects. Nutraceuticals plays an importance role in disease management and therapy this review article focuses on the Nutraceuticals used in different direct, natural food sources, traditional Nutraceuticals, non - traditional Nutraceuticals, classification based on Nutraceuticals product, health benefits of herbs, dietary supplement, nutrients, natural food herbals, dietary supplement, nutrients, natural food sources in Nutraceuticals.</p>
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INTRODUCTION

Nutraceuticals, a term combining nutrition and pharmaceuticals, refers to food products with medical benefits. Discovered by Stephen Defelice in 1989, it combines traditional medicine with food, a concept echoed by Hippocrates in various cultures.



Nutraceuticals are food or food-based substances with health benefits, including disease prevention and treatment. They are associated with four major diseases: heart disease, cancer, hypertension, and diabetes. Over 470 Nutraceuticals and function food products are available with documented health benefits.

Nutraceutical used in different disease

Parkinson's disease is a brain condition causing movement, mental health issues, pain, and sleep problems. There's no cure, but therapies and medicine can reduce symptoms. Preliminary studies suggest nutritional supplements, such as creatine, can modify symptoms

Symptoms

Parkinson's diseases cause motor and non-motor symptoms, including slow movement, tremor, involuntary movement, rigidity, difficulty walking, and imbalance. Non-motor symptoms include cognitive impairment, mental health disorders, dementia, sleep disorders, and sensory disturbances. High disability rates and dementia are common.

Treatment and care

For now, Parkinson's diseases are not curable, but there are multiple ways, to manage its symptoms. The treatment can also vary from person to person, depending on their specific symptoms and how well certain treatments work. Medications are the primary way to treat this condition. A secondary treatment option is a surgery to implant a device that will deliver a mild electrical current .to part of your brain (this is known as deep brain stimulation). There are also some experimental options, such as stem cell-based treatments, but their availability often varies, and many aren't an option for people with Parkinson's diseases.

Traditionally uses

Turmeric, garlic, peppermints, thyme-thymus vulgar and sage are all natural remedies for various health issues. Curcumin, a potent antioxidant, has anti-inflammatory and carcinogenic properties. Garlic, containing allicin, has cholesterol-lowering and HDL-lowering effects. Peppermints treat digestive problems and have a smooth muscle relaxant effect. Ketogenic diets, high in fat and low in protein, can improve seizure control. Peptides/hydrolysates, found in casein and whey protein, can reduce cholesterol, hypertension, constipation, and obesity. Dairy foods with friendly bacteria promote gut health.

Benefits of nutraceuticals

- Improve health
- delay aging
- Easily available and cheap
- Increases life effects with desirable outcomes
- holistic approach
- provide dietary supplement neutrally
- It provides food for populations with special needs
- EXAMPLE nutrient - dense foods for the elderly Improves metabolism

Classification of nutraceuticals

- Traditional Nutraceuticals
- Non-traditional Nutraceuticals
- Commercial Nutraceuticals

Traditional Nutraceuticals

Traditional Nutraceuticals are natural foods rich in vitamins, selenium, Vitamin D, green tea, soya, and lycopene, providing health benefits beyond basic nutrition.

Non-traditional Nutraceuticals

Non-traditional Nutraceuticals are artificial food with bioactive components for human well-being, including fortified and recombinant foods. Examples include calcium-added juice, iron-fortified cereal, folic acid-added flour, and vitamin-rich milk.

Traditional Nutraceuticals

Types of traditional nutraceuticals

- Probiotic micro-organism
- Prebiotics
- Chemical constituents
- Nutraceuticals enzymes

Probiotic micro-organism

Yogurt and Kefir are examples of natural products that act as antimicrobials, modifying micro flora, preventing pathogen adhesion, providing nutrients, and reversing infection-related effects on the gastrointestinal tract.

Prebiotics micro-organism

Prebiotics are a more recent addition to our vocabulary and are substance which when consumed are not digested by us. Instead they act as a nutrient source for the good probiotic bacteria.

Example: Insulin, chicory, Jerusalem artichoke, dandelions’.

Chemical constituents

HERBAL: Nutraceuticals holds a great promise to improve health and prevent chronic diseases with the help of herbals. Ex: Aloe Vera Gel. Dilates capillaries, anti inflammatory, emollient, wound healing properties.

EPHEDRA: Bronchodilator, vasoconstrictor, reduces bronchial

OEDEMA: Garlic- Antibacterial, antifungal, antithrombotic, hypertensive, anti-inflammatory.

LIQUORICE: Expectorant, secretolytic, treatment or peptic ulcer.

GINGER: carminative, antiemetic, cholagogue positive inotropic.

Based on nutraceuticals product

Non-specific biological therapies used to promote general well-beings, control symptoms and prevent malignant processes. List of best nutraceutical products in India 2022

- Grape seed extract combination for men.
- Sports plus for women
- Omega forte for cardiac diabetic problem
- lost-IT for weight loss
- Boncare for orthopedic use
- Dali tab coenzyme for relieving pain
- Bloablen as a prebiotic/probiotic
- Hair strong tablets for hair growth.

May help you live longer

- keeps skin , teeth and eyes healthy
- supports muscles
- boosts immunity
- helps the digestive system function

Natural food sources in nutraceuticals

Natural food has not been processed much and has not had artificial ingredients added to it. E.g.: whole grains, such as brown rice, quinoa and oats

Function of food

A nutraceuticals therefore is not a functional food. It is a dietary supplement that encompasses non-nutritive food components such as phytochemicals, vitamins and minerals, amino acids or botanical compounds such as bioflavonoid or phytochemical. It is consumed simply for its health promotional or nutritional benefits rather than for its taste flavor or aromatic attributes. It may reduce the risk of acquiring a disease (but generally not prevent it) reduce

the severity of symptoms of a disease and/or enhance physical performance or mental dexterity. A functional food must remain a food it is not a pill or a capsule and its benefits must be demonstrable at a normal level of consumption. Some popular nutraceuticals include ginseng, Echinacea, green tea, glucosamine, omega-3, lutein, folic acid, and cod liver oil. Various food products such as prebiotics, probiotics, dietary fibers, fatty acids (polyunsaturated), antioxidants, spices, herbs, nutrients and dietary supplements can be considered nutraceuticals.

Probiotics

- Live microorganisms which when administered in adequate amounts confer a health benefit on the host.
- Species of *Lactobacillus*
- *Bifida bacterium*
- *Yeast saccharomyces cerevisiae*

Some *E.coli* and *Bacillus* species are also used as probiotics.

Prebiotics

No digestible substance that provides a beneficial physiological effect for the host by selectively stimulating the favorable growth of a limited number of indigenous bacteria.

Commonly known prebiotics are:

- Oligo fructose
- Insulin
- Galacto-oligosaccharides
- Lactose

Sources of food

Although the earth has perhaps 30,000 plant species with parts that people can eat, only 15 plants and 8 animal species supply 90% of our food.

Types of sources food

Whole grains /cereals, refined grains/cereals, vegetables, fruits, eggs, dairy products, fish, red meat, processed meat and sugar, sweetened beverages.

Our Main Food Resource Cereals

Wheat and rice as their staple food. Domesticated animals (cattle, sheep, goat, etc...) these animals are the sources of milk and meat. These form the important component of the diet of the people all over the world.

CROPLANDS: That provide 76% of the total mostly grains.

RANGELANDS: That provides meat mostly from grazing livestock accounting for about 17% of the total food.

FISHERIES: That supplies the remaining 7 per cent.

Food as medicine

- Nearly two thirds of the world's 6.1 billion people rely on the healing power of plant based materials for many reasons availability, affordability, safety or their belief in traditional cures.
- Medical benefits of food have been explored for thousands of years modern Nutraceuticals industry begun to develop during the 1980.

Vitamins

FAT SOLUBLE VITAMINS

VITAMIN A: Acts as antioxidant, essential for growth and development.

VITAMIN D: Essential for formation and teeth, helps the body to absorb and use calcium.

VITAMIN E: Antioxidant helps to form blood cells, boost immune system.

VITAMIN K: Essential for blood clotting.

Water soluble vitamins

VITAMIN C: Antioxidant necessary for healthy bones, gums, teeth and skin help in wound healing prevent from common cold.

VITAMIN B: Helps in carbohydrate metabolism, essential for neurological function.

VITAMIN B2: Energy metabolism, maintain healthy eye, skin and nerve function.

VITAMIN B12: Help in producing genetic material, formation of RBC, maintenance of CNS, synthesis of amino

acids, involved in metabolism of protein, fat and carbohydrate.

FOLIC ACID: Helps in RBC formation, formation of genetic material of cell, very much essential during pregnancy.

PANTOTHENIC ACID: Acids in synthesis of cholesterol, steroids and fatty acids, crucial for intra neuronal synthesis of acetylcholine.

Therapeutic areas such as

- Anti -Arthritic
- Sleeping disorders
- Digestive problems
- Prevention of certain cancers
- Osteoporosis
- Blood pressure
- Cholesterol lowering
- Neurological disorders
- Diabetes etc...

Phytochemicals

Phytochemicals could provide health benefits as;

- SUBSTRATE for biochemical reactions
- COFACTORS of enzymatic reactions
- INHIBITORS of enzymatic reaction
- ABSORBENTS that bind to and eliminate undesirable constituent in the intestine.
- SCAVENGERS of reactive or toxic chemical.

CONCLUSION

Nutraceuticals are present in most of the food ingredients with varying concentration. Concentration, time and duration of supply of nutraceuticals influence human health. Manipulating the foods, the concentration of active ingredients than is increase. Nutraceuticals are destined to play an important role in future therapeutic developments but their success will be governed by control of purity, safety and efficacy without inhibiting innovation. Nutraceuticals will continue to appeal because they are convenient for today's lifestyle.

REFERENCES

1. Pandey M.M., Rastogi S., Rawat A.K.S. Indian traditional ayurvedic system of medicine and nutritional supplementation. *Evid.-Based Complement. Alternat. Med.* 2013;2013:376327. doi: 10.1155/2013/376327. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
2. Chauhan B., Kumar G., Kalam N., Ansari S.H. Current Concepts and Prospects of Herbal Nutraceutical: A Review. *J. Adv. Pharm. Technol. Res.* 2013;4:4–8. [PMC free article] [PubMed] [Google Scholar]
3. Hopper I., Connell C., Briffa T., De Pasquale C.G., Driscoll A., Kistler P.M., Atherton J.J. Nutraceuticals in Patients with Heart Failure: A Systematic Review. *J. Card. Fail.* 2020;26:166–179. doi: 10.1016/j.cardfail.2019.10.014. [PubMed] [CrossRef] [Google Scholar]
4. Natic M., Pavlovic A., Bosco F.L., Stanisavljevic N., Zagorac D.D., Aksic M.F., Papetti A. Nutraceutical properties and phytochemical characterization of wild Serbian fruits. *Eur. Food Res. Technol.* 2019;245:469–478. doi: 10.1007/s00217-018-3178-1. [CrossRef] [Google Scholar]
5. Mishra S.S., Behera P.K., Kar B., Ray R.C. Advances in probiotics, prebiotics and nutraceuticals. In: Panda S.K., Shetty P.H., editors. *Innovations in Technologies for Fermented Food and Beverage Industries*. Springer; Cham, Switzerland: 2018. pp. 121–141. [Google Scholar]
6. Rai R.H., Goyal R.K., Singh R.B., Handjiev S., Singh J., Darlenska T.H., Smail M.M. *Functional Foods and Nutraceuticals in Metabolic and Non-Communicable Diseases*. Academic Press; New York, NY, USA: 2022. Vitamins and minerals as nutraceuticals in cardiovascular diseases and other chronic diseases; pp. 651–670. [Google Scholar]
7. Chen, G.-L.; Chen, S.-G.; Chen, F.; Xie, Y.-Q.; Han, M.-D.; Luo, C.-X.; Zhao, Y.-Y.; Gaob, Y.-Q. Nutraceutical potential and antioxidant benefits of selected fruit seeds subjected to an in vitro digestion. *J. Funct. Foods* 2016, 20, 317–331. [CrossRef]