

STUDY OF DIETARY SUPPLEMENTS

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Abstrakt *Dietary supplement can be defined as any vitamin, mineral, added chemical substances, botanical or herbal products that is added to the diet to improve human health. Scientists and health professionals agree that dietary supplements can be under certain conditions beneficial to human health, but should not replace complete and balanced daily meals of foods which are necessary for a healthful diet.*

Key words: *substance, healthful diet, broad category, chemical substances, vitamin.*

Dietary supplement can be defined as any vitamin, mineral, added chemical substance, herbal product, botanicals, amino acids, or other ingestible preparation that is added to the diet to benefit human health. Dietary supplements are used worldwide and represent a broad category of ingestible products that are distinguishable from conventional foods and drugs. All developed countries have special legislation concerning dietary supplement (for example,

U.S. Dietary Supplement Health and Education Act, 1994). In countries, such as Australia and Canada, dietary supplements and drugs are regulated similarly, and only ingredients deemed acceptable by the Therapeutic Goods Administration of Australia or the Natural Health Products Directorate of Canada can be sold as dietary supplements. In the European Union (EU), dietary supplement regulations (Directive 2002/46/EC) often follow a case-by-case basis, depending upon the individual country and the available safety evidence for the ingredient. In China, India and Japan, where plants, herbs, botanicals and animal extracts have a long history of use as traditional medicine, regulations are different but relatively stringent in terms of safety and side effects to humans. Japan has no legal definition of dietary supplements, mostly are classified into food products or drugs. The Ministry of Health and Welfare set up the Food for Specified Health Uses (FOSHU) to provide people with accurate health information about dietary supplements and the current Japanese system for regulation of health foods is called.




Food with Health Claims and is made up of two categories: “Food with Nutrient Function Claims” and “Food for Specified Health Uses”.



The Healthy Eating Pyramid

Conventional, balanced and healthy eating can cover all needs of the human body in terms of energy, basic nutrients (carbohydrates, proteins, fatty acids, water) and micronutrients (vitamins, minerals, antioxidants, etc).

A fundamental question that everybody asks these days that most people are very aware that nutrition plays a very important role in health is, if conventional, balanced and without supplements diet can cover all the needs of the human body for a healthy lifestyle until old age. Nutritionists and health professionals argued for years that people can get the most important food requirements that their body needs each day from a conventional, balanced and regular daily diet. Today’s dietary guidelines from health and nutrition agencies cover more than 40 nutrients that are subdivided into 6 categories: carbohydrates, fats, proteins, vitamins, minerals and water. Daily nutrient recommendations are collectively known as dietary reference intakes (DRIs). A healthy diet is one that favours “real” fresh whole foods that have been sustaining people throughout the millenniums. Whole foods supply the needed vitamins, minerals, protein, carbohydrates, fats, and fiber that are essential to good health. In contrast, commercially prepared and fast foods are often lacking nutrients and contain inordinate amounts of sugar, salt, saturated and trans-fats, all of which are associated with the development of diseases. A balanced diet is a mix of food from the different food groups (vegetables, legumes, fruits, grains, protein foods, meat, and dairy). Variety involves eating different foods from all the food groups that helps to ensure that you receive all the nutrients necessary for a healthy diet. The components of the Mediterranean diet have been evaluated as substantially beneficial to human health. The World Health




Organization (WHO) makes the following recommendations for a balanced and healthy diet: a. eat roughly the same amount of calories that your body is using, b. a healthy weight is a balance between energy consumed and energy that is 'burnt off', c. limit intake of fats, and prefer unsaturated, than saturated fats and trans fats, d. increase consumption of plant foods, particularly fruits, vegetables, legumes, whole grains and nuts, e. limit the intake of sugar, salt/sodium consumption from all sources and ensure that salt is iodized, f. eat a diet with essential micronutrients such as vitamins and certain minerals.

From the beginning of human civilization diet was mostly plant foods that could be easily gathered and seafoods. Hunter-gatherers later contributed meat products by big game. This was the diet of most humans until about 10,000 BC, at which time the development of agriculture and animal husbandry provided more meat and grains for the whole family. Nobody knew about vitamins, minerals, proteins, carbohydrates and fats and their role in human nutrition. The various people in the continents of the Earth developed nutritious local cuisines with mostly local products that sustained their health, whereas by trial and error choose a variety of foods and cooking methods that lead to physical strength, health, and fertility. The common wisdom of native cultures knew which foods and herbs had special properties for energy, nutrition and extra health benefits for children, pregnant women and elders. Everyday diets were “supplemented” to make up for deficiencies as far back as native cultures. Native Americans, for example, knew to drink a tea made from pine bark and needles for scurvy containing high concentration of ascorbic acid, which was later found by science to be a vitamin C deficiency disease. In 1749, Dr. James Lind discovered citrus fruits prevented scurvy (high in vitamin C content).

The discovery of the role of vitamins was a major scientific achievement in the understanding on the association of nutrition, health and disease. By the 1920s and 1930s, significant strides were being made in the world of vitamin research and mass marketing (synthesized vitamin C in 1935 and marketed as vitamin C supplement under the name Redoxon). In the nearly 75 years since the vitamin.

C pill was marketed, large steps have been made in the vitamin and other dietary supplement products. Increased public interest was stimulated as a result of claims (proved to be false later) made in the USA by Nobel-laureate Linus Pauling (1901-1994) in the 1970s, that “megadoses” of at least 10 times the RDA (Recommended Dietary Allowances) of ascorbic acid could prevent or cure the common cold, flu, and cancer. In 1976, Pauling and Dr. E. Cameron contacted experiments and reported that a majority of 100 "terminal" cancer patients treated






with 10,000 mg of vitamin C daily survived three to four times longer than similar patients who did not receive vitamin C supplements. Nevertheless, to test whether Pauling might be correct, the Mayo Clinic conducted three double-blind studies involving a total of 367 patients with advanced cancer. The studies, reported in 1979, 1983, and 1985, found that patients given 10,000 mg of vitamin C daily did no better than those given a placebo. In fact, recent laboratory studies have found that vitamin C may interfere with the effectiveness of five anti-cancer drugs.

Although health claims for a variety of vitamin supplements proved to be controversial, popular books, consumer and sport magazines, popular newspapers and TV advertisements in developed countries advertise spurious claims for various botanical herbs, and constituents of food for health benefits and “magical” cures for a variety of diseases. The majority of these claims are not supported by scientific studies. The mainstream scientific community gradually became intrigued by the potential health benefits of dietary supplements and numerous research projects (epidemiologic, clinical, *in vivo* and *in vitro*) were initiated in the 1980s. This interest was fueled in part by studies demonstrating that nutrient antioxidants, (vitamins C and A, E and b-carotene, Selenium), have a role in protecting cells from oxidative free radical damage. Furthermore, epidemiological studies suggested that a diet rich in fruits and vegetables and abundant in antioxidants, nutrients, and other substances, reduced the risk of coronary heart disease and certain cancers. These initial promising results were not materialized by the more accurate and larger randomized controlled trials taking into account confounding factors

The global mineral supplements market is increasing due to a growing geriatric population, increasing demand from pregnant women, and rising urban population. With the increasing population of baby boomers, spending on mineral supplements is anticipated to increase. The mineral supplements market are: macrominerals, calcium, phosphorous, zinc, alkaline pH booster, sodium, potassium, chlorine, sulfur, magnesium, and trace minerals: iron, boron, manganese, chromium, copper, iodine, cobalt, fluoride, selenium, colloidal silver. The global mineral supplements market was valued at \$9.9 million in 2014 and was expected to grow at 7.5% during the period 2015 - 2020

Vitamin and polyvitamin supplements are very popular and their use as supplements, supported by increasing promotion adverts in growing every year. The global vitamin supplements market, estimated to be valued at US\$37 billion in 2014, and is expected to grow at 6.5% during 2014 to 2020. This is mainly attributed to growing demand among consumer about preventative healthcare. Research on the vitamin supplement demand showed that is due to the increasing





cost of healthcare, with people are turning towards vitamin supplements. Vitamin supplements included Vitamin C, E, B, A, beta-carotene, K, niacin, folic acid etc).

The growing popularity and widespread use of internet has made finding health information and dietary supplements easier and faster. Although much of the information on the internet is valuable, at the same time it allows false and misleading information and advertisements with excessive therapeutics claims. Consumers may be misled by vendors' claims that herbal products can treat, prevent, diagnose, or cure specific diseases, despite regulations prohibiting such statements. Physicians should be aware of this widespread and easily accessible information. More effective regulation is required to put this class of therapeutics on the same evidence-based footing as other medicinal products and shorter chain omega-3 fatty acids do not have a clear effect on total mortality, combined cardiovascular events, or cancer.

REFERENCES

1. Hollenstein J. *Understanding Dietary Supplements*. Pri-Med Institute, Boston, MA, 1994.
2. Mason P. *Dietary Supplements*. (4th edition). Pharmaceutical Press, London, 2011.
3. Watson RR, Gerald JK, Prredy VR (Eds). *Nutrients, Dietary Supplements, and Nutraceuticals. Cost Analysis versus Clinical Benefits*. Springer Science & Business Media, Berlin, 2011.
4. Cupp MJ, Tracy TS (Eds). *Dietary Supplements. Toxicology and Clinical Pharmacology*. Humana Press, New York, 2003.
5. Begins K, Kreft S (Eds). *Dietary Supplements. Safety, Efficacy and Quality*. Woodhead Publishing (inprint of Elsevier), Amsterdam, 2014.
6. National Institutes of Health, USA. Diet Supplements: What you need to know [https://ods.od.nih.gov/HealthInformation/DS_WhatYouNeedToKnow.aspx].
7. Coppens P, da Silva MF, Pettman S. European regulations on nutraceuticals, dietary supplements and functional foods: A framework based on safety. *Toxicology* 221(1):59-74, 2006.
8. National Organization of Medicines (Δζληθόο Οξγαληζκόο Φαζκάθσλ, ΔΟΦ). Particular Nutrition Food, Food Supplement and Biocides Assessment





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9. Germany. Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz (BMELV) Federal Ministry of Food, Agriculture and Consumer Protection, Rochusstr. 1 D-53123 Bonn.

