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Antiaging Medications, Vitamins and Minerals for Elderly Adults

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Description

For both survival and wellbeing, food is necessary. The amount of protein and calories we consume determines how much energy we can spend. However, even when sufficient calories are available, nutritional deficiency disorders can still develop. A number of odd illness conditions, including scurvy, pellegra, and beriberi, have historically been linked to nutrition, according to medical professionals. These illnesses were also discovered in those who consumed enough calories and protein. Researchers were baffled by these odd dietary deficit conditions till the turn [1].

Around the turn of, scientists thought they could produce food in a lab much like it was produced in nature. Purified protein, carbs, and lipids might be combined with inorganic salts, water, and other ingredients to create a sufficient meal. Purified organic chemicals were fed to experimental animals, but they did not thrive. Lunin discovered that young mice did not grow when fed an apparently sufficient amount of pure organic substances in an early experiment. Pickelharing discovered that animals could thrive on a purified organic compound diet by replacing small amounts of water with milk. He came to the conclusion that the animals needed some unidentified component in the milk to thrive.

In chickens fed a diet of polished rice, a strange polyneuritis that was subsequently diagnosed as beriberi emerged. In, Christine Eijkman showed how feeding unpolished rice to poultry instead of polished rice could prevent or treat polyneuritis in birds. According to fashion, Eijkman thought a germ was destroyed. by something found in unpolished rice husks. In, Casimir Funk suggested that the Eijkman factor was actually a pyrimidine molecule rather than a germ. When fed to pigeons, the pyrimidine molecule treated beriberi. He gave the substance the name "vitamin" because it seemed essential to life and because he believed it to be an amino acid. Although the final was omitted when it was later determined that vitamins were not amines, the name persisted. A vitamin was recognised as an organic substance found in food that is essential for healthy metabolic function.

The availability of nutritional supplements intended to prevent disease was made possible by biochemists' capacity to create a chemical in the lab that is equal to the natural material. Frequently use these chemicals has a significant impact on global prevention, like milk supplementation with vitamin D. These vitamins were necessary for healthy metabolic function, and consuming a lot of them may help avoid disease.

In the middle, theories of cellular and organismal ageing emerged. One of the prominent ideas put out the idea that cellular systems and tissues become damaged over time as a result of the oxidative stress that free oxygen radicals give to the body. It is believed that endogenous oxidative damage to proteins, lipids, and DNA plays a significant role in the ageing process as well as the onset of chronic diseases like cancer, atherosclerosis, and cataract formation. Only when the creation of reactive oxygen species exceeds the level that is considered to be safe is it possible that these diseases may cause harm. An association between antioxidant vitamins and ageing has been theorised. Some antioxidant substances may scavenge these harmful free oxygen radicals, preventing cell death and ageing. Antioxidant vitamins such as vitamin C, vitamin E, and betacarotene have been proposed to limit oxidative damage in humans and reduce the risk of some chronic diseases [2].

Numerous epidemiological studies and clinical trials investigating the effectiveness of antioxidant vitamins have been motivated by this notion. With the exception of the ability of extra vitamin E and maybe vitamin C to considerably lessen lipid oxidative damage in both, the existing information is insufficient to infer that antioxidant vitamin supplementation materially reduces oxidative damage in people. Low vitamin consumption is related with an increased risk of ageing. In the US, overall energy consumption declines significantly with age for males and in the seventh decade for women. Most nutrient intakes concurrently drop as a result of this. Lower calcium, iron, zinc, B vitamin, and vitamin E intakes have been linked to older people eating less food. The risk of diet-related illnesses may increase due to the low energy intake or low nutrient density of the diet. In addition to having subnormal levels of vitamins and minerals, 50% of older persons have vitamin and mineral intakes that fall below the recommended daily amount. Elderly people, vegans, alcoholics, and patients with chronic illnesses are among the groups at greater risk for low vitamin intake malabsorption.

Older folks typically consume more energy-dilute foods like grains, vegetables, and fruits and fewer energy-dense items like sweets and fast food. Age-related decreases in daily food and beverage amount also occur. Reduced energy intake may also be caused by physiological changes brought on by ageing, such as slower stomach emptying, altered hormone responses, a reduced basal metabolic rate, and altered taste and odour. Other elements including convenience, income, education, socioeconomic level, attitudes and beliefs connected to diet, and marital status may also be important. By offering nutrient-dense meals via home delivery or meal congregate programmes, many age-related nutritional issues may be partially resolved. The carotenoids, a family of pigments related to vitamin A, are a diversified collection of more than naturally occurring pigments.

Carrots and other green leafy vegetables are examples of yellow, orange, and red plant chemicals. Carotenoids are essential micronutrients that humans cannot produce on their own and must be obtained through diet. The two main dietary carotenoids are betacarotene and lycopene. A naturally occurring pigment, lycopene is produced by microbes and plants but not by vertebrates. It is mostly found in tomatoes and processed tomato products in the human diet. It is a strong antioxidant and the carotenoid family's most important free radical scavenger. For the carotenoids themselves, there is no documented deficiency status and no suggested daily consumption. Lycopene cannot be converted to vitamin A, whereas betacarotene can. All carotenoids are antioxidants, and about 50 of them are regarded as vitamins due to their provitamin A activity. Preformed retinol is referred to as vitamin A and the retinol that is created from carotenoids. Only animal sources, such as organ meats, seafood, egg yolks, and fortified milk, contain preformed vitamin A.

C vitamin Citrus fruits, fresh leafy vegetables, strawberries, melons, tomatoes, broccoli, and peppers are all rich sources of vitamin C, a water-soluble vitamin that is also present in many other foods. Scurvy is caused

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by a lack of vitamin C, which humans are unable to manufacture. E vitamin Tocopherols and tocotrienols, which are eight different natural forms of vitamin E, all have strong antioxidant effects. Although the most common form of vitamin E in the human diet is gammatocopherol, research have mostly focused on alphatocopherol, which is the one that is included in the majority of over-the-counter supplements. Alphatocopherol is biologically more active than gammatocopherol, which is one explanation for this. an absence of vitamin E is uncommon and most frequently observed in conditions that lead to fat malabsorption, such as cystic fibrosis, chronic cholestatic liver disease, abetalipoproteinemia, and short bowel syndrome.

Vitamin B12 Vitamin B12 deficiency affects 5%–20% of elderly people, but it frequently goes undiagnosed due to its modest clinical symptoms. The vitamin is malabsorbed, there is pernicious anaemia, and there is insufficient dietary intake, which are the causes of the deficiency. The majority of the time, anaemia owing to these reasons will be identified through measurement of vitamin B12 and folate concentrations. Since around 50% of individuals with subclinical disease may have normal B12 levels, it is important to confirm vitamin B12 deficiency in those patients who have values in the lower normal range. Measurement is a more accurate way to check for vitamin B12 insufficiency [3].

of serum homocysteine and methylmalonic acid levels, which rise quickly in vitamin B12 both vitamin B12 and folate deficiency will result in elevated homocysteine levels, but only vitamin B12 deficiency will result in elevated methylmalonic acid levels. The only other possible explanation for a high methylmalonic acid content is renal failure. Vitamin B12 Homocysteine must be converted to methionine by the action of folate, vitamins B6 and B12, and other nutrients. In observational studies, higher homocysteine levels have been linked to a higher risk of coronary heart disease. Colon cancer and a deficiency in folate are linked to neural tube defects in offspring. Dark-green leafy vegetables including collards, turnip greens, and romaine lettuce, broccoli, and liver are all natural sources of folate.

Asparagus, citrus fruits and juices, whole grain foods, wheat germ, dried beans and peas including chickpeas and black-eyed peas, as well as pinto, navy, and lima beans are just a few examples. The Food and Drug Administration mandated that producers of enriched flour, bread, rolls and buns, farina, corn grits, cornmeal, rice, and noodles include from of folic acid per pound of product starting in. Nutrition D Animal diets naturally include the provitamin cholecalciferol, which is vitamin D. This necessitates conversion to the physiologically active form, calcitriol, in the kidney. Since humans can generate vitamin D with enough exposure to sunlight, it is not a genuine vitamin. The primary circulating form of vitamin D, 25-hydroxyvitamin D3, is produced in the liver by the photoconversion of 7-dehydrocholesterol into previtamin D3. This is changed in the kidney to two metabolites, the more active of which is 1,25-dihydroxyvitamin D3. Saltwater fish, fortified milk, and fish-liver oil are examples of food sources [4].

Thiamin Pyruvate dehydrogenase, a-ketoglutarate dehydrogenase, and transketolase all use thiamine pyrophosphate as a cofactor. Beriberi is a syndrome brought on by thiamine deficiency and features symptoms of weakness, emotional instability, decreased sensory perception, and heart failure. Lean fish, dried beans, dried peas, dried soybeans, fortified breads, cereals, pasta, whole grains, and legumes all contain thiamine. Although fruits, vegetables, and dairy products don't contain a lot of thiamine, when ingested in big quantities, they represent a significant source.

Pyridoxine, a form of vitamin B6, has been linked to lipids and cardiovascular risk. There are several different meals that include vitamin B6, such as fortified cereals, Due to the abundance of supplies for this vitamin in the United States, riboflavin deficiency is uncommon. Riboflavin can be found in lean meats, eggs, beans, nuts, green leafy vegetables, dairy products, and milk. Riboflavin is frequently added to breads and cereals as a supplement. Association with illness, other from deficient states, is unknown [5]. There are small amounts of about 15 inorganic elements required. For iron, iodine, copper, zinc, and selenium, clinically symptomatic and reversible deficient illness has been established in humans. While the biological activity of other substances such as chromium, manganese, molybdenum, and vanadium is undeniable, it is less certain how these substances relate to therapeutic use.

Acknowledgement

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Conflict of Interest

None.

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