

The Role of Vitamins and their Dietary Sources: Salad Variations for Global Health Promotion

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ABSTRACT

In my manuscript, I summarize the most important properties, effects on the body, and dietary sources of Vitamins A, B_1 , B_{12} , C, D, E, and K. Furthermore, I have made salad combinations that contain large amounts of these vitamins thanks to the use of gentle kitchen technology methods. By presenting salad ideas, the theoretical knowledge provided by nutrition science and gastronomy can be put into practice and contributing to global health development. I hope that by combining quality vegetables, fruits, fish, seafood, whole baked goods, dairy products, oilseeds, vegetable oils, and sauces, I can also increase the enjoyment value of our food at the same time.

Key words: Gastronomy, health promotion, nutrition science, salad ideas, Vitamins

INTRODUCTION

itamins are compounds that the body constantly needs in certain amounts. In the present study, I focus on the human body's need for vitamins, which is provided primarily from an external source, mostly through nutrition, in proportion to nutrient intake.

Vitamins also contribute to the maintenance and growth of the cell population, the functioning of the organs, and the continuous supply of normal metabolism. Because of these properties, they are called essential materials. Lack of them can also cause many diseases and general weaknesses, so their replacement is very important. There are mostly two types which are water-soluble (best known: B-complex and Vitamin C) and fat-soluble (A, D, E, and K) vitamins.

The primary purpose of my manuscript is to provide an overview of the key properties and dietary sources of Vitamins A, B₁, B₁, C, D, E, and K. Furthermore, I present

salad variations made with gentle kitchen technology in my manuscript. I want to contribute to global health development with the diversity of salad variations and their useful vitamin content.

IMPORTANT PROPERTIES AND DIETARY SOURCES OF VITAMINS A, B₁, B₁₂, C, D, E, AND K

Vitamin A (retinol)

Vitamin A is a fat-soluble vitamin that is sensitive to chemical effects (sunlight, UV light, etc.). It often enters the body as a provitamin, which pro-vitamins are summarized as carotenoids. Vitamin deficiency is only caused by prolonged malnutrition or malabsorption. It is stored in the liver as the form of retinol.

Vitamin A plays an important role in the visual process which is mostly found in the liver, fish, heart, kidneys, eggs, and milk in products of animal origin. Among plant-derived products, colored (green, orange, and red) vegetables and fruits are the most significant sources of Vitamin A.^[1,2]

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Vitamin B₁ (thiamine)

Thiamine is a water-soluble vitamin that is absorbed from foods in the proximal section of the intestinum tenue. In some cases, such as folic acid deficiency, alcohol consumption, illness, and older age, the efficiency of thiamine uptake decreases. Thiamine is also a coenzyme of important enzymes in the human body and also plays a prominent role in the breakdown of carbohydrates. Vitamin B₁ deficiency also affects the cardiovascular and nervous systems. The human body needs a maximum of 1–2 mg per day, while in children, it is less. The most important sources of the vitamin include yeast, rice, whole wheat, baked goods, legumes, mushrooms, liver, poultry, oilseeds, milk and dairy products, vegetables, and eggs.^[3-6]

Vitamin B₁₂ (cyanocobalamin)

Vitamin B_{12} is a complex molecule. Signs vitamin deficiency in the human body includes anorexia, indigestion, and anemia. The source of Vitamin B_{12} is liver, kidney, egg, meat, fish, milk, and cheese.^[7-10]

Vitamin C (ascorbic acid)

The role of ascorbic acid in the human body is particularly diverse. Among other things, it provides protection against the effects of carcinogens and helps in the absorption of calcium and iron in the digestive tract. It is involved in the synthesis of adrenal hormones and many other biochemical processes. It also promotes tooth formation and relieves allergic symptoms. It reduces the risk of cardiovascular diseases, the harmful effects of alcohol and smoking and stimulates the immune system. Signs of its deficiency include depression, muscle and bone pain, decreased resistance to disease, and scurvy. The daily intake varies in children, adults, and pregnancies (45 mg-200 mg). About 10-90% of ascorbic acid is also destroyed during kitchen technology operations and storage. Vegetables and fruits are rich sources of ascorbic acid. Among them, rosehips, currants, green peppers, buds, and cabbage are the most significant.^[11,12]

Vitamin D (calciferol)

Calciferol is a compound that helps calcium build up in the human body, building bones, teeth, and maintaining good health. Vitamin D, as a collective name, means several molecules with similar structures (Vitamins D_2 and D_3). In nature, the occurrence of Vitamins D is rare and small in amount. Foods high in Vitamin D include salmon, cod liver oil, caviar, chicken liver, Vitamin D fortified margarine, and oils or plant drinks.^[13,14]

Vitamin E (tocopherol)

Tocopherol is a collective term covering several similarly structured compounds, two major groups of which are tocopherols and tocotrienols. Vitamin E is absorbed by passive diffusion from the gut. In the case of absorption disorders, the efficiency of utilization decreases. Tocopherol is an antioxidant and membrane-protective vitamin. It has a beneficial effect on the nervous system and blood circulation during pregnancy. Among the foods, pumpkin seeds, hazelnuts, almonds, walnuts, fortified oils, and chestnuts contain higher amounts.^[15]

Vitamins K (Vitamin K_1 : Phylloquinone; Vitamin K_2 : Menaquinone; Vitamin K_3 : Menadione; and Vitamin K_4 : Menadiol)

Vitamin K is essential for blood clotting, so its deficiency causes bleeding. It also has a positive effect on wound healing and with Vitamin K, the development of osteoporosis is lower. Signs of Vitamin K deficiency include fatigue, intestinal complaints, difficult-to-heal wounds, and nosebleeds. Its recommended daily intake also varies for children, men, women, and pregnancy (15–70 μ g). Of the foods, tomatoes, Brussels sprouts, kale, spinach, wheat germ, broccoli, lettuce, liver, cauliflower, and beans are the most suitable for Vitamin K supplementation.^[16,17]

SALAD VARIATIONS TO MAINTAIN GLOBAL HEALTH

In addition to describing the properties and dietary sources of vitamins that are extremely useful to the human body, I also aimed to prepare and present salad variations^[18,19] in the manuscript [Figures 1-7]. I also consider it important to put



Figure 1: Vegetable salad with seeds, olive oil, and homemade baked goods (own editing)



Figure 2: Fish salad with figs and oil seeds (own editing)

Judit: The role of vitamins



Figure 3: Chicken vegetable salad with oilseeds, olive oil, and homemade baked goods (own editing)



Figure 4: Fruit salad with fruit smoothie dressing (own editing)



Figure 5: Pesto pasta salad with seafood, vegetables, and mozzarella (own editing)



Figure 6: Fruit salad with strawberry plant-based yogurt dressing (own editing)



Figure 7: Meaty vegetable salad with oil seeds, kefir-garlicgreen spice dressing, and homemade baked goods (own editing)

theoretical knowledge into practice so that I can contribute to the development of global health. Salads are made from a variety of ingredients, based on individual development and concept, taking into account gentle kitchen technology procedures.

CONCLUSION

I summarize the most important properties and dietary sources of Vitamins A, B_1 , B_{12} , C, D, E, and K. Furthermore, I developed salad variations (vegetable salad with seeds, olive oil and homemade baked goods; fish salad with figs and oil seeds; chicken vegetable salad with oilseeds, olive oil, and homemade baked goods; fruit salad with fruit smoothie dressing; pesto pasta salad with seafood, vegetables, and mozzarella; fruit salad with strawberry plant-based yogurt dressing; and meaty vegetable salad with oil seeds, kefirgarlic-green spice dressing, and homemade baked goods) so I can contribute to the practical implementation of theoretical knowledge. I used gentle kitchen technology in the preparation of the salads, so I hope my manuscript can help improve global health.

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