

Quadrant II – Transcript and Related Materials

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| Module Name | : Vitamins – its dietary sources and its importance |
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Notes

VITAMINS: DIETARY SOURCES AND ITS FUNCTIONS

Introduction

Vitamins are essential nutrients that are responsible for many different functions in the body. They are important in the formation of tissues, blood cells, genetic material, hormones and chemicals for the nervous system. They are necessary for the body, growth, health, physical and emotional balance.

The human body can only produce two types of vitamin naturally, which is vitamin D and vitamin K. The others must be ingested through diet or supplements. There is no food that contains all the vitamins, so it is necessary to combine the different food groups to be well nourished.

There are two types of vitamin: Water- soluble vitamins and Fat - soluble vitamins.

Water-soluble vitamins

These vitamins dissolve in water and can be obtained from fruits, vegetables, milk and meat products. These include:

- **Vitamin C (ascorbic acid)**

Benefit: Vitamin C is necessary for the synthesis of collagen and it has an important role in the healing process. This vitamin absorbs iron and acts as an antioxidant. It's important to note that our body does not produce vitamin C by itself and does not accumulate it either, so we need to provide it every day.

Food sources: These are some of the foods that we must include in our diet that contain vitamin C. Oranges, kiwi, grapefruit, strawberries, tomatoes, broccoli, and spinach.

Average daily intake: 60-70mg / day

- **Vitamin B1 (Thiamine)**

Benefit: Vitamin B1 is essential for the functioning of the brain, nerves, heart and muscles. This Vitamin intervenes in the energy metabolism, converting fats, carbohydrates and proteins into energy.

Food sources: Vitamin B1 is found in abundance in whole grains such as lentils, green peas, several varieties of rice, whole-wheat bread and also we can find it in pork, spinach, oranges, cantaloupe, milk, and eggs.

Average daily intake: 1.5-2mg / day.

- **Vitamin B2 (Riboflavin)**

Benefit: Vitamin B2 supports the body's own antioxidant functions and we need it to maintain the life of our mucous membranes and tissues such as skin, nails or hair. Likewise, vitamin B2, it is important for the proper maintenance of the nervous system and immunological system.

Food sources: Some of the foods rich in vitamin B2 are cheese, coconut, mushrooms, eggs, lentils, cereals, milk, meat and almonds.

Average daily intake: 1.8mg / day

- **Vitamin B3 (Niacin)**

Benefit: Vitamin B3 participates in energy metabolism. Its primary function is to convert food into energy. This vitamin is absorbed in the intestine and stomach.

Food sources: Good sources of vitamin B3 are poultry, tuna, salmon, beef, and legumes.

Average daily intake: 15mg / day

- **Vitamin B5 (Pantothenic acid)**

Benefit: The primary function of the Vitamin B5 is to convert food into energy. This vitamin also plays an important role in different chemical reactions that occur in the body and are necessary to maintain the proper functioning of the human body.

Good food sources: Most foods contain small amounts of Pantothenic Acid, although it is abundant in whole grains and eggs. Other sources are avocado, yoghurt, milk, chicken, sweet potatoes, and mushrooms.

Average daily intake: 50mg / day

- **Vitamin B6 (Pyridoxine)**

Benefit: Vitamin B6 is used by the body for the formation of coenzymes and facilitates the metabolism of proteins. It supports an enzyme involved in the transportation of oxygen and supports an enzyme essential to the creation of several neurotransmitters in the brain. It is also a determinant in the regulation of the nervous system.

Food sources: Some sources of vitamin B6 are poultry, nuts, legumes, potatoes, bananas, and avocado.

Average daily intake: 2.1mg / day

- **Vitamin B12 (Cyanocobalamin)**

Benefit: Vitamin B12 is a nutrient that helps keep neurons and blood cells healthy. In addition, it contributes to the elaboration of DNA, the genetic

material present in all cells. Moreover, it also prevents a specific type of anaemia.

Food sources: It is present only in animal products such as meat, poultry, fish, dairy, and eggs.

Average daily intake: 0.0005mg / day

Fat soluble vitamins

These vitamins dissolve in oils and fats. These are found in the fat soluble parts of food. They are obtained from fruits, vegetables, fish, egg yolks and some nuts. Within this group we find:

- **Vitamin A (Retinol)**

Benefit: Vitamin A preserves the health of the tissues and good vision. It helps in the development and well-being of the skin and mucous membranes as well as the skeletal tissue. Vitamin A has antioxidant properties, which means that it protects cells against daily toxic damage from oxidation.

Food sources: There are many foods that contain vitamin A, including all dark green leafy vegetables and orange, green or yellow fruits such as carrot, spinach parsley, pumpkin and apricot but also it is present in tuna, cheese and yolk.

Average daily intake: 0.8-1mg / day

- **Vitamin D (Calciferol)**

Benefit: The main function of vitamin D in the human body is to facilitate the metabolism of calcium and phosphate by the body, which is essential for the healthy development of bones and teeth.

Food sources: Some sources of vitamin D are mackerel, salmon, sardines and milk.

Average daily intake: 0.01mg / day

- **Vitamin E (tocopherol)**

Benefit: Vitamin E is known as the vitamin of youth, it is an antioxidant that participates in the protection of lipids, and therefore, it has a protective effect on cell membranes.

Food sources: We can find vitamin E in foods such as vegetable oils, liver, nuts, coconut, soy, avocados, blackberries, fish and whole grains.

Average daily intake: 0.08mg / day

- **Vitamin K (phytomenadione)**

Benefit: Vitamin K is produced by the intestinal flora. It is a compound that is a determinant for the synthesis of numerous coagulation factors and it is necessary to store carbohydrates in our body.

Good food sources: Vitamin K is found in the following foods: Alfalfa, fish liver, cauliflower, egg yolk, soybean oil.

Average daily intake: 0.1mg/day