

THE EXTRASCOOP ON VITAMINS

VITAMIN A
(BETA-CAROTENES)

VITAMIN B₁
(THIAMINE)

VITAMIN K
(PHYTONADIONE)

VITAMIN B₃
(NIACINE)

VITAMIN B₉
(FOLIC ACID)

VITAMIN B₂
(RIBOFLAVIN)

VITAMIN B₃
(NIACIN)

VITAMIN C
(ASCORBIC ACID)

VITAMIN D
(CALCIFEROL)

VITAMIN B₆
(PYRIDOXINE)

VITAMIN B₉
(FOLIC ACID)

PANTOTHENIC ACID
(D-CAL PANTOTHENATE)

VITAMIN D
(CALCIFEROL)

VITAMIN B₁₂
(COBALAMIN)

VITAMIN C
(ASCORBIC ACID)

VITAMIN K
(PHYTONADIONE)

VITAMIN A
(BETA-CAROTENES)



APPROVED BY THE
EDUCATION
COMMITTEE

VITAMIN E
(α -TOCOPHERYL)

VITAMIN B₁
(THIAMINE)

VITAMIN C
(ASCORBIC ACID)

PANTOTHENIC ACID
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VITAMINS

and cystic fibrosis (CF)

Vitamins are needed for the normal growth, function, and health of our bodies. People with CF need extra vitamins for good health. This guide has useful facts about vitamins and makes a great learning tool for people with CF. Not only will you find out what vitamins do, you will also see where to find them in the foods you eat.

Vitamins are organic compounds that work together to help our bodies grow, function normally, and fight illness. We get vitamins from the foods we eat and, in some cases, our bodies even make their own. There are 13 different vitamins in all. Each belongs to one of the 2 main vitamin groups—fat soluble or water soluble.

TWO GROUPS

of vitamins

Fat-soluble vitamins

The fat-soluble group has vitamins A, D, E, and K, which are found in fatty foods and oils. After we digest them, these vitamins are stored in fatty tissue inside our bodies, ready for future use. Because people with CF have trouble digesting fatty foods, they also have trouble getting the right amount of fat-soluble vitamins.

Water-soluble vitamins

The water-soluble group contains vitamin C and the B-complex vitamins, including folic acid, biotin, and pantothenic acid. They are called water soluble because they are easily absorbed by water inside the body and washed out of the body with sweat and urine. Because they can leave our bodies so easily, we must find ways to get them every day.

Let us take a closer look at the 13 vitamins, what they do, and where we can find them.

VITAMIN A

(beta-carotene)



What a find. Vitamin A was the first vitamin to be discovered. It was found in 1913. Vitamin A helps the immune system fight infections. It is needed for healthy skin and proper functioning of the eyes. Low levels of vitamin A can cause night blindness and skin disorders and raise your risk of infections.

Vitamin A can be found in lots of foods. Here is a list of some foods that are good sources:

- Carrots
- Sweet potatoes
- Vegetable soup
- Cantaloupes
- Apricots
- Cheese pizza

VITAMIN D

(calciferol)



Beyond the milk. Vitamin D has many health benefits. It keeps normal levels of calcium in the blood, and this helps bones grow strong and stay healthy. It also helps keep the immune and nervous systems working well. If you do not get enough vitamin D, your bones may weaken and you may even get rickets.

How can you get vitamin D? Exposure to sunlight can provide you with most of the vitamin D you need. Other good sources of vitamin D are vitamin supplements and foods such as:

- Salmon
- Tuna
- Milk
- Cereal
- Eggs
- Pudding

VITAMIN E

(α -tocopherol)



The radical police. Vitamin E is like a police officer who patrols the body to keep bad things from happening. Vitamin E protects body tissue from damage caused by toxins called free radicals. Free radicals are harmful byproducts of the body's metabolism that may cause chronic diseases, such as cancer and heart disease. Vitamin E also helps make red blood cells and keeps the nervous and immune systems healthy.

It is hard to get all the vitamin E you need from food alone. Some fruits and vegetables have small amounts. Most meat products do not have it at all. But vitamin supplements and the following foods can be good sources of vitamin E:

- Almonds
- Peanuts
- Mayonnaise
- Broccoli
- Margarine
- Bread (whole grain)

VITAMIN K

(phytonadione)



The ouch factor. Every time you cut yourself, your body forms clots to stop the bleeding. There are many factors that aid in this process, and vitamin K is a big one. Vitamin K is needed to help make many of the substances that work together to clot blood. Without vitamin K, a cut could bleed for a long time and a small bruise could turn into a big one.

Vitamin K can be found in many foods. To make sure you get vitamin K in your diet, eat lots of dark-green, leafy vegetables. Here are some good food sources of vitamin K:

- Broccoli
- Spinach
- Leaf lettuce
- Peas
- Brussels sprouts
- Coleslaw

VITAMIN B₁

(thiamine)



Head of the B team. Vitamin B₁ has a big job. As part of the B-complex team, it joins with the other B vitamins to help the body work right. Vitamin B₁ helps change carbohydrates into energy that the body needs every day. It is also necessary for the maintenance of healthy skin, the heart, and the nervous system.

It is easy to get all the vitamin B₁ you need for good health because it is found in lots of foods and in vitamin supplements. The foods in the following list can help you make vitamin B₁ a part of your daily diet:

- Pork
- Pecans
- Long grain rice
- Bread
- Peas
- Oranges

VITAMIN B₂

(riboflavin)



Inside the cell. For you to stay active and healthy, every cell in your body must work hard to change food into energy. Vitamin B₂ plays an important role in energy production and tissue repair. It also helps your body make healthy red blood cells. Low levels of vitamin B₂ can lead to bad skin and itchy eyes.

Foods that have vitamin B₂ are a common part of a good diet. But people with CF may have trouble digesting some of them. They may need vitamin supplements as well. Here is a list of some foods that are good sources:

- Milk
- Cereal
- Yogurt
- Pasta
- Eggs
- Chicken

VITAMIN B₃

(niacin)



The cholesterol supervisor. Vitamin B₃ plays a role in metabolizing fats and is used to treat high levels of “bad” cholesterol. As part of the B team, B₃ works with the other vitamins to keep your skin healthy and your nervous and digestive systems working right.

While vitamin B₃ is found in lots of foods we eat, it is really common in poultry and dairy products. Here are some foods you can eat to get vitamin B₃:

- Tuna
- Peanuts
- Chicken
- Lamb
- Beef
- Pork

VITAMIN B₆

(pyridoxine)



The protein machine. Vitamin B₆ plays an important role in the metabolism of amino acids (the building blocks of protein). It is also needed for proper functioning of the nervous system and production of hemoglobin, the part of red blood cells that carries oxygen throughout the body. A deficiency of vitamin B₆ can cause depression and/or anemia.

If you do not like vegetables, do not worry. A good way to get vitamin B₆ is to eat chicken, pork, beef, and fish. You can find vitamin B₆ in these foods as well:

- Eggs
- Baked potatoes
- Bananas
- Garbanzo beans
- Oatmeal
- Roast beef

VITAMIN B₉

(folic acid)



Out with the old and in with the new.

Vitamin B₉, also called folic acid, plays a role in the production of genetic material, in tissue growth, and in the proper formation of red blood cells. It is important for healthy cell division and replication, which is essential for growth. Deficiency in vitamin B₉ can cause anemia, abnormal tissue growth, and birth defects.

Folic acid is found in many vegetables and fruit juices. But if these foods are cooked too long, they lose a lot of B₉. That is why you may need a vitamin supplement plus a healthy diet with the following foods:

- Lentils
- Asparagus
- Spinach
- Fortified cereals
- Peanuts
- Orange juice

VITAMIN B₁₂

(cobalamin)



A tiny vitamin with a big job. You need only a small amount of vitamin B₁₂ in your diet, but that small amount protects your nerve cells. It is also needed to form red blood cells. Vitamin B₁₂ deficiency can cause a type of anemia known as pernicious anemia, which is commonly found in the elderly and strict vegetarians.

If you like beef and seafood, you are lucky. These foods are good sources of B₁₂. But if you do not eat animal products, you may not get enough B₁₂ and should take vitamin supplements. Here are some food sources of B₁₂:

- Salmon
- Beef
- Tuna
- Milk
- Pork
- Chicken

VITAMIN C

(ascorbic acid)



Keeping things together. Vitamin C does hundreds of jobs in the body. It works hard to fight free radicals that can hurt your cells. Vitamin C also helps make collagen, a sticky substance that keeps your bones and muscles together, and helps blood vessels stay strong. It also can help heal a wound and shorten the length of a cold.

Our bodies need a diet rich in vitamin C foods to stay healthy. The good news is that vitamin C is found in many fruits and vegetables such as the ones listed below:

- Broccoli
- Strawberries
- Grapefruit
- Cantaloupes
- Oranges
- Mangoes

PANTOTHENIC ACID

(d-cal pantothenate)



The enzyme maker. Pantothenic acid helps metabolize fats, carbohydrates, and proteins. It also helps make red blood cells and control the body's hormones. Low levels of pantothenic acid can lead to stomach cramps, vomiting, and tingling in the hands and feet.

It is easy to get the right amounts of pantothenic acid because it is found in many foods that are a part of a daily diet. Here are some ideas:

- Avocados
- Mushrooms
- Chicken
- Lentils
- Potatoes
- Eggs

BIOTIN



Made from good bacteria? Some bacteria that live inside the body help you stay healthy. In fact, these good bacteria make a vitamin called biotin. Biotin helps metabolize fats, carbohydrates, and proteins. You need biotin to keep your hair healthy, but it does not help restore hair lost in natural balding.

There are lots of ways to get the biotin you need every day. In addition to the biotin that your body makes, vitamin supplements have good amounts. There are many common foods that have it as well, such as:

- Milk
- Cheese
- Chocolate
- Bacon
- Eggs
- Chicken

EXTRASUPPORT

for vitamins

All 13 fat-soluble and water-soluble vitamins play a role in your health. They all work together to help your body work well.

Besides eating a good diet, you may have to take vitamin supplements to get the extra nutrients needed to best manage CF. Vitamin supplements with one or more of the fat-soluble or water-soluble vitamins can come in pills, capsules, tablets, or liquid drops.

Many types of vitamin supplements are available today. Over-the-counter vitamins can be found on the shelves of most local grocery stores and pharmacies. Other vitamins are available by prescription only. Because people with CF have trouble digesting certain vitamins, a prescription supplement may be used to meet their extra nutritional needs.

EXTRASUPPORT

for vitamins (cont)

To get the most from your over-the-counter or prescription vitamin supplements, always take them with meals and with your pancreatic enzyme therapy. As with all prescription products, always follow the orders of your health care provider.

Remember, vitamins are a big part of living a happy and healthy life. If you have any questions or concerns about vitamins and vitamin supplements, talk to your health care provider. He or she knows about CF and can tell you what is best for you.

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