

VIT AM INS

EAT WHAT YOU NEED

JAKE

Dear customer,

This little booklet gives you a bit of information about the vitamins in Jake. You can read about their most important function, the food in which you'll find the vitamin and some info about how Jake makes sure you're getting enough.

So what are vitamins? Vitamins are organic compounds that are essential for our bodies to function. Essential means that our body cannot produce these vitamins itself- we need to get them from our diet.

After every summary you'll find a coloured box like this one that tells you about the source and daily amount of the vitamin in Jake. A daily amount is 3 shakes for Jake Light and Jake Original, and 4 shakes for Jake Sports.

Did we mess up somewhere or do you have questions? Let us know. You can always reach us through our website, social media, or by sending us an email at info@jakefood.com.

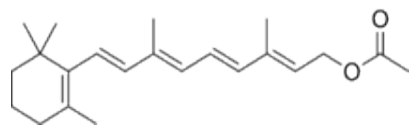
Best,

A handwritten signature in black ink, appearing to read 'Julian Sarkinovic', with a stylized, flowing script.

Julian S.L. Sarkinovic
CTO Jake Nutritionals
julian@jakefood.com

Vitamin A

Vitamin A plays a critical role in the functioning of our eyes and in a variety of other processes, such as the growth and differentiation of cells, the maintenance of our immune system and cell-to-cell communication.



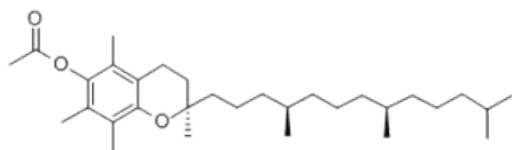
Where do I get it?

Our body can create vitamin A from so-called carotenoids, which can be found in red fruits and vegetables such as carrots and tomatoes. Vitamin A is found primarily in animal products like meat – especially the liver – dairy, fish and eggs.

Jake provides 800 µg RE (100%) retinyl acetate, a naturally occurring form of vitamin A. Preformed vitamin A retinyl acetate has a drastically higher bioavailability than provitamin A carotenoids.

Vitamin E

Vitamin E is one of the most important **antioxidants** in our body. Furthermore, vitamin E plays a crucial role in the production of red blood cells and helps our body to use vitamin K.



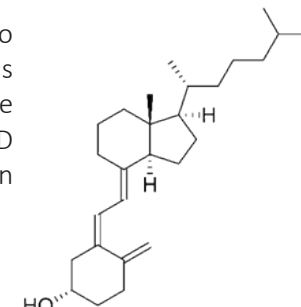
Where do I get it?

Vitamin E is found in most natural oils and fats, wheat, seeds, nuts, vegetables and fruit. Vitamin E deficiency is very uncommon, doses up to 2500% RDA have not shown adverse effects.

Jake provides 16-22 mg (135-160%) of vitamin E through dl-alpha-tocopheryl acetate. While this form has a slightly lower bioavailability compared to alpha-tocopherol, this is overcome by the increase in quantity.

Vitamin D₃

Vitamin D: the sunshine vitamin, is incredibly important to our health. Vitamin D helps our body absorb the minerals calcium, iron, magnesium and zinc and influences the working of big parts of our DNA. Because of this, vitamin D is very important for our growth, our hormone function and for the maintenance of our bones and teeth.



Where do I get it?

Our primary source of vitamin D is sunlight. We create vitamin D3 (cholecalciferol) ourselves in the top layer of our skin (epidermis). We can also find small amounts of vitamin D in foods such as oily fish, some meats and eggs.

Although our body can produce enough vitamin D with the help of sunlight, vitamin D deficiency is very common. Due to our indoor lifestyle, a staggering 25 to 75% of the Western population suffer from a lack of vitamin D. Therefore, vitamin D supplementation is recommended for almost every age group, especially for breastfed infants and the elder.

There are two vitamers of vitamin D: vitamin D2 (ergocalciferol) and vitamin D3 (cholecalciferol). The vitamin D created in our skin is vitamin D3. Vitamin D3 is more potent than vitamin D2. In line with recent scientific developments, Jake provides 10 µg (200%) of vegan vitamin D3 made from lichen.

What are antioxidants?

Antioxidants protect our cells from the damaging effects of oxidation on our cells. Oxidation can produce so-called free radicals, which can cause complications like cardiovascular disease and cancer.

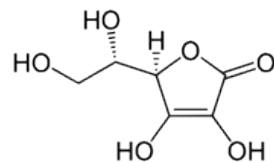
A normal healthy diet rich in plant foods, provides plenty of antioxidants through vitamins like vitamin E and C and minerals like zinc and selenium. Our body produces enzymes with antioxidant properties as well.

Vitamin C

Vitamin C, like vitamin E, is an important antioxidant that protects our cells from oxidative stress. We need vitamin C to produce collagen, a protein required to help our wounds heal. Also, vitamin C improves the absorption of iron and helps our immune system function properly.

Where do I get it?

It's very important to include vitamin C rich foods in our diet as our body cannot produce or store vitamin C. Major food sources of vitamin C are citrus fruits, soft fruits and green vegetables – especially peppers!



Jake provides 80 mg (100%) L-ascorbic acid, the common vitamer of vitamin C. The word 'a-scorbic' translates to 'non-scurvy', as a lack of vitamin C causes scurvy. Back in the old days when sailors would go on long journeys scurvy was a common disease as they would often not bring any fresh fruits or vegetables.

The vitamin B-complex

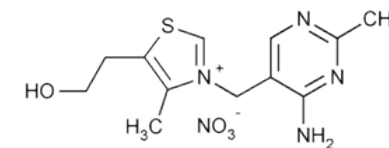
We know that a certain vitamin can have multiple vitamers. Vitamin D for example, comes in the form of vitamin D2 and vitamin D3 and both of which act as vitamin D.

That's not the case with the B vitamins. The vitamin B complex is a group of separate vitamins. While many of the B vitamins work together, each of the B vitamins has their own vitamin activity and benefits that come with it.

The B vitamins are water-soluble vitamins that play a huge range of roles in our body. But not everyone gets enough vitamin B through their diet. To help us get there, in many Western countries the cereals, grains and bread must be fortified with vitamin B.

Vitamin B1

Vitamin B1 (thiamin) is essential for our energy metabolism and therefore in the growth, development, and function of cells. It's necessary for the functioning of our heart and our nerve system.



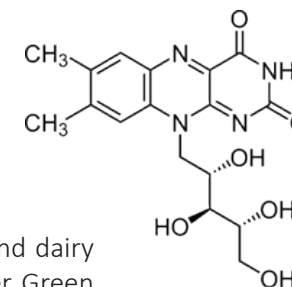
Where do I get it?

Thiamin is found in many foods such as whole grains and fortified bread, cereal, pasta, rice, meat, fish, legumes, seeds and nuts. Vitamin B1 deficiency can cause a variety of diseases such as Korsakov (linked with alcohol abuse) and Beriberi, which is common in underdeveloped rice-heavy countries.

Jake provides 1.1 mg (100%) vitamin B1 through thiamin mononitrate. Thiamin mononitrate is the most commonly used form of vitamin B1 as it is stable and does not absorb water from natural humidity.

Vitamin B2

Vitamin B2 (riboflavin) helps to turn the food that we eat in the energy that we need. It functions as an antioxidant and it's important for the growth, development, and functioning of our (blood) cells.



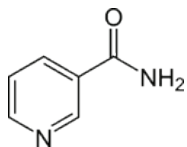
Where do I get it?

Foods that are particularly rich in riboflavin are milk and dairy products, eggs and organ meats such as kidneys and liver. Green vegetables and fruits also contain riboflavin in smaller amounts.

In many Western countries, grains and cereals are fortified with riboflavin. Vitamin B2 deficiency is extremely rare, but seen in cases of gluten-free diets. Jake provides 1.4 mg (100%) riboflavin.

Vitamin B3

Vitamin B3 (niacin) has a very wide variety of functions in our body. Some of these functions are the production of glucose – our primary source of energy – from food, DNA repair and it helps produce sex and stress related hormones.



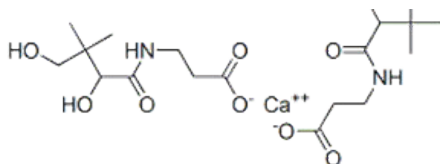
Where do I get it?

Vitamin B3 is found in meat, fish, whole grains and vegetables. As our bodies can make vitamin B3 from tryptophan as well, so it is not a vitamin in the classical sense. Vitamin B3 deficiency is very rare, but still seen in relation to alcohol abuse. Severe deficiency can cause pellagra. Pellagra is characterized by cracked, scaly skin, dementia and diarrhea.

Jake provides 16 mg (100%) vitamin B3 in the form of nicotinamide, the commonly used and stable form of vitamin B3. Nicotinamide has shown less adverse effects when administered in very high doses, compared to niacin.

Vitamin B5

Vitamin B5 is more commonly referred to as pantothenic acid. Pantothenic acid is required for the production of protein, important enzymes (coenzyme-A in particular), carbohydrates and fats.



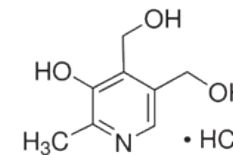
Where do I get it?

Pantothenic acid is found in small quantities in nearly every food and in bigger quantities in meat, eggs, milk and dairy products, whole grain cereals, legumes and some vegetables, of which most in our generous avocados.

As vitamin B5 is present in almost all foods, deficiencies are extremely rare. Large doses, up to 1000 times the RDA, have no reported adverse effects. Jake provides 6 mg (100%) pantothenic acid in the form of calcium-d-pantothenate.

Vitamin B6

Vitamin B6 has a huge range of functions in our body. To name a few, vitamin B6 is involved in more than 100 enzyme reactions, our energy metabolism, the production of proteins, hormones, cellular growth, our immune system and our nerve system.



Where do I get it?

Vitamin B6 is found naturally in many foods and added to many other foods, making it very unlikely for healthy individuals to become deficient of the vitamin. Foods that contain a lot of vitamin B6 are meat, eggs, dairy, fish, bread, cereals, potatoes, legumes and many fruits and vegetables.

Jake provides 1.4 mg (100%) vitamin B6 in the form of pyridoxine hydrochloride, the stable hydrochloride salt form of pyridoxine. Pyridoxine hydrochloride is converted into the active coenzyme form of the vitamin: pyridoxal phosphate.

Vitamin B overdose

Although it is not impossible, an overdose of a B vitamin is very unlikely to ever happen. Vitamins of the vitamin B complex are water soluble. That means that excessive vitamin B can easily be excreted through urine.

But remember, there's always an upper limit. Especially with the fat soluble vitamins, a little is good, but that doesn't mean that a lot is better. If you are taking supplements, never take more than the recommended amounts.

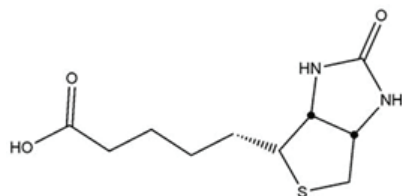
Vitamin B7/B8

Biotin, sometimes referred to as vitamin B7, B8 or H is necessary to convert our food into glucose and keeps our skin and hair healthy.

Where do I get it?

Biotin can only be synthesized by bacteria, molds, yeasts, algae, and by certain plant species. It is found in organ meats, eggs, liver, milk, nuts and peanuts. Biotin deficiency is relatively rare as the amounts needed are small and our intestinal bacteria are able to synthesize the vitamin. Deficiency does however occur in people that regularly consume a lot of raw eggs.

There are eight different forms of biotin, but only one of them – D-biotin – occurs naturally and has full vitamin activity. Jake provides 50 µg (100%) biotin in the form of D-biotin.



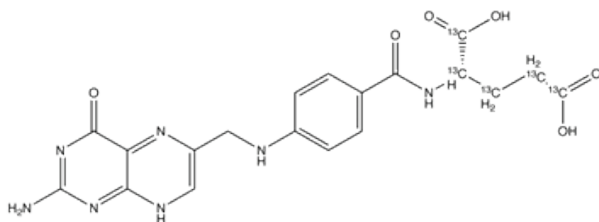
Vitamin B9/B11

Folic acid, sometimes referred to as vitamin B11 or B9 plays an important role in (infant) growth and the production of white and red blood cells.

Where do I get it?

Folic acid is found in green vegetables, whole grain products, bread, meat and dairy products. Although a varied diet should provide sufficient folic acid, deficiency is common, especially in pregnant women. Therefore, women are advised to supplement 400 µg daily, starting 4 weeks before pregnancy.

Jake provides 200 µg (100%) folic acid in the form of the provitamin pteroylmonoglutamic acid, for its superior bioavailability and stability.



Vitamin B12

Vitamin B12 is essential for the proper functioning of our brains, our nervous system and plays a role in the production of red blood cells and DNA synthesis.

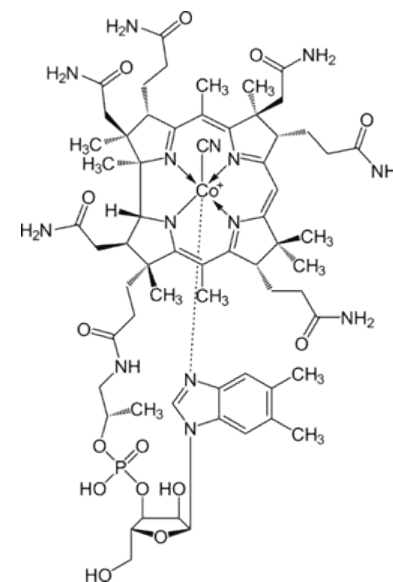
Where do I get it?

Vitamin B12 can only be found in animal products such as milk, dairy products, meat, fish and eggs.

Especially in people that do not eat animal products, vitamin B12 deficiency is very common. Furthermore, with age we lose our ability to effectively absorb the vitamin. Therefore, vegans, vegetarians and those older than 50 years are advised to meet their RDA by consuming foods fortified with vitamin B12 or a supplement containing vitamin B12.

Vitamin B12 deficiency can potentially cause severe and irreversible damage, especially to the brain and nervous system. Furthermore, vitamin B12 deficiency causes tiredness, weakness, constipation, loss of appetite, weight loss, megaloblastic anemia, depression, confusion, dementia, poor memory, and soreness of the mouth or tongue. It's important to get enough vitamin B12.

Jake Light provides 3.0 mg (120%), Jake Original 2.8 mg (112%) and Jake Sports 3.0 mg (124%) vitamin B12 in the form cyanocobalamin. Because of its superior stability and low cost this form is used in many pharmaceuticals and supplements as well as for fortification of foods.



This document is solely intended to provide you with interesting information about vitamins in general, and more specifically about the vitamins in Jake.

Contact us

Jake is constantly in development. To make Jake an even better product, we would love your help. What do you like, or what would you like to see differently? Tell us everything about your experience with Jake.

Did we miss something or do you have questions for us? We're always here to help. You can reach us through our website, social media, or by sending us an email at info@jakefood.com.