EAT WHAT YOU NEED JAKE

MIN ER ALS

Dear customer,

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

What are minerals? Dietary minerals are chemical elements that are essential to us, other than carbon, hydrogen, nitrogen and oxygen. Essential means that our body cannot produce these minerals - we need to get them from our diet.

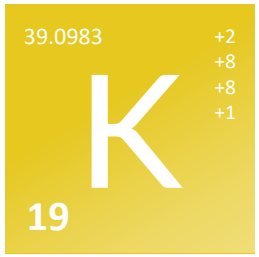
After every summary you'll find a coloured box like this one that tells you about the source and daily amount of the mineral in Jake. A daily amount is 3 shakes for Jake Light and Jake Original, and 4 shakes for Jake Sports.

Did we mess up somewhere or do you have any 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,

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

Potassium



Potassium is necessary for our heart, kidneys and other organs to work normally. It helps to regulate our blood pressure and to maintain our energy balance. Potassium is one of the **primary electrolytes** in our body. Electrolytes have many essential functions, one of which is the contraction of our heart.

Where do I get it?

Dietary deficiency of potassium is very uncommon as potassium is found in most foods. Foods that are high in potassium are beans, potatoes, bananas, avocados and dark leafy greens such as spinach, but it's also found in meat, fish, milk, bread and nuts.

Although potassium deficiency is uncommon, the Western population is advised to eat more potassium as it balances out the excessive amounts of sodium that we consume. Furthermore, potassium can help reduce the risk of high blood pressure and strokes.

Jake provides 2000 mg (100%) potassium through tripotassium citrate and dipotassium phosphate. These commonly used potassium salts have separate medicinal uses as well, such as the prevention of kidney stones.

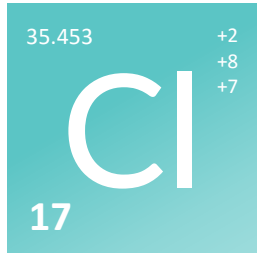
What are electrolytes?

There's a lot of electrical activity in our body. Most importantly, our brains and nerves work through electrical impulses and our muscle tissue is highly electrical.

Electrolytes are the molecules that activate this electrical activity. That's why electrolytes are so important for our brains and muscles.

The primary electrolyte minerals in our body are potassium, chloride, sodium, calcium and magnesium. Of course, Jake provides all of these electrolytes.

Chloride



Chloride is an essential part of the stomach juices necessary for digestion. It is needed for a proper balance of body fluids – which is quite the big deal considering that approximately 60% of our body consists of water.

Where do I get it?

Dietary deficiency of chloride is very uncommon as chloride, together with sodium, forms table salt: sodium chloride. We add salt when we cook to spice up our food, but most of the salt we eat is the salt added to our foods and drinks by manufacturers. Furthermore, chloride is found in fruits and vegetables such as seaweed, rye, tomatoes and leafy greens.

The recommendations regarding chloride intake vary a lot. The European guidelines (**EFSA**) has set its RDA on 800 mg chloride per day, whilst the United States guidelines (**NAM**) has more recently set the RDA for chloride on 2300 mg per day.

Jake Light provides 1078 mg (135%) chloride, Jake Original provides 921 mg (115%) chloride and Jake Sports provides the higher amount of 1761 mg (220%) chloride to compensate for the higher amount of chloride that is lost during exercise. No salt is added to Jake.

EFSA and NAM

EFSA is the European Food Safety Authority. The agency set up by the European Union that provides Europe with advise regarding nutrition.

NAM is the National Academy of Medicine. The NAM advises the United States of America with regard to nutrition.

Calcium

Calcium is the most abundant mineral in our body. It helps build and maintain our bones and teeth, which is where 99% of our bodies calcium is stored. The remaining calcium plays a role in many different other functions such as cell communication, blood clotting, nerve function and muscle contraction. Calcium works closely together with vitamin D.

Where do I get it?

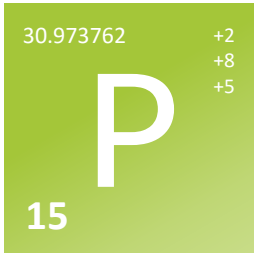
Calcium is mainly found in milk and dairy products, but is also found in leafy greens such as kale and broccoli. There are many calcium fortified foods and drinks available on the market as well.

Calcium deficiency is common with people that do not consume milk and dairy products and with menopausal women. Calcium deficiency can contribute to impaired bone development in early life and a higher risk of bone diseases such as osteoporosis later in life.

Jake provides 800 mg (100%) calcium through calcium citrate, the highest quality source of calcium.

Phosphorus

Phosphorus is the second most abundant mineral in our body, it is present in every human cell. Like calcium, phosphorus is necessary for the formation of our bones and teeth. Furthermore, it plays an important part of our energy metabolism, kidney function, nervous system and the formation of our DNA.



Where do I get it?

The main food sources of phosphorus are protein rich foods such as meat, milk and dairy products, some legumes and whole grain products.

Our body is very adept at regulating its phosphorus balance. Therefore, and as phosphorus is readily available in our foods, phosphorus deficiency and excessively high levels of phosphorus are very rare. High levels of phosphorus practically only occur in people with severe kidney disease. The average intake is approximately 1400 mg per day.

Jake provides 811 mg (116%) phosphorus in Jake Light, 700 mg (100%) in Jake Original and 1100 mg (157%) in Jake Sports. The main source of phosphorus in Jake are the oats, with some contribution from the pea protein and from our potassium source dipotassium phosphate.

Magnesium

Magnesium is another mineral that contributes to the structural development of bone and is required for the synthesis of our DNA. Magnesium is one of the five major electrolytes and furthermore, magnesium is involved in over 700 known enzyme reactions. It is hard to exaggerate the importance of magnesium to our well-being.

Where do I get it?

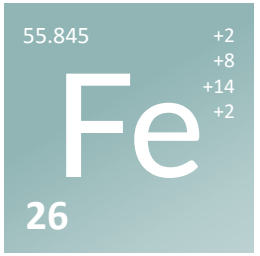
Magnesium is readily found in plant and animal foods and in beverages. Whole grains, nuts, seeds, legumes and leafy greens – especially spinach and avocado – milk, dairy products and meat are good sources of magnesium.

Magnesium deficiency is found to be uncommon. However, it is very difficult to measure magnesium levels as practically all magnesium is stored within our tissues. Whilst magnesium deficiency may be uncommon, only about 50% of the US population is meeting the established recommended intake. Due to the consequences of soil depletion, this number is steadily rising.

Jake provides 375 mg (100%) magnesium as magnesium carbonate. Magnesium carbonate is a very bioavailable form of magnesium. It has antacid properties, meaning that it can neutralise stomach acidity and so prevent acid reflux. In our stomach, magnesium carbonate converts to magnesium chloride, which is a very potent source of magnesium.

Iron

Iron is essential for the formation of red blood cells. Red blood cells are filled with a coloured protein called hemoglobin which is partially made from iron. Hemoglobin transports oxygen from our lungs to our tissues. Furthermore, iron is also involved in the conversion of blood sugar to energy, the production of cells, amino acids and hormones.



Where do I get it?

Iron is found in seafood and lean meats – especially the liver, nuts, leafy greens such as spinach and broccoli, beans, fortified grains and last but not least: chocolate.

Dietary iron comes in two forms, nonheme iron and heme iron. Heme iron is iron bound to a heme protein. The bioavailability of nonheme iron (5-15%) is lower than the bioavailability of heme iron (15-35%). Plant based foods only contain nonheme iron. Therefore, the bioavailability of iron in Jake is relative low. This is overcome by the increase in quantity.

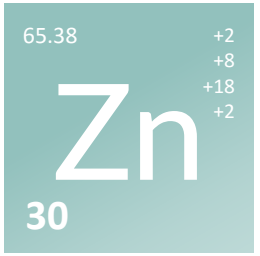
Iron deficiencies

Although iron is the most common element on earth – making up for about 35% of the earth's mass – iron deficiency is very common in developing countries, making it the world's most common mineral deficiency. In developed countries, due to mandatory fortification of foods such as flour, iron deficiency is less common nowadays.

Groups at higher risk of iron deficiency are vegans, vegetarians, pregnant women, infants and women with heavy periods. As we need iron to transport oxygen through our body, iron deficiency can make you feel really tired. If you're in of the groups at risk, watch out for symptoms.

Jake Light provides 26,7 mg (191%) iron per day, Jake Original provides 21,5 mg (154%) iron per day, Jake Sports provides 34,5 mg (246%) per day. The iron in Jake comes from the oats and the pea protein.

Zinc



Zinc is essential for growth and development, the functioning of our brains, wound healing, our immune system and it is the second most important mineral in enzyme production: zinc is involved in over 100 known enzyme reactions.

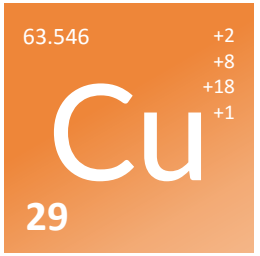
Where do I get it?

The major food sources of zinc are red meat, poultry, dairy products, nuts and whole grains. Oysters contain an impressive amount of zinc, at about 1000% RDA per 100 grams of oysters.

As our body does not store zinc, a daily intake of zinc is required. Nevertheless, zinc deficiency is practically nonexistent in the Western population.

Jake provides 10 mg (100%) zinc through zinc oxide, the most common and bioavailable source of dietary zinc.

Copper



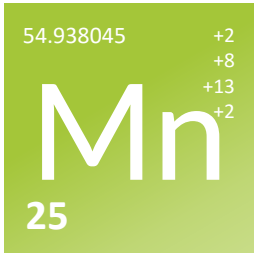
Copper works together with iron in the formation of red blood cells and hemoglobin. Furthermore, copper is necessary for the growth, development, and maintenance of our bones, heart and brains.

Where do I get it?

Copper is found in whole grains, beans, nuts, potatoes, mushrooms, avocadoes, leafy greens such as kale and organ meats such as kidneys and liver. Again, the list is topped by oysters, which contain about 300% RDA copper per 100 grams of oyster.

Copper deficiency is practically nonexistent in the Western population. Jake provides 1.0 mg (100%) copper through cupric sulfate. Cupric sulfate is a very potent source of copper and is also used as an antidote for phosphorus poisoning.

Manganese



Manganese is an essential element in bone formation, skin formation and skin protection, brain and nerve function, (sex) hormone production and in controlling our blood sugar levels.

Where do I get it?

Manganese is found in whole grains, rice, nuts, leafy greens, fruit, fish, meat and black teas. As whole foods contain plenty of manganese and we do not need a lot of the mineral, manganese deficiency is rare.

Jake provides 2.0 mg (100%) manganese through oats and manganese gluconate. Although orally taken manganese is often regarded as one of the least toxic elements, as we readily excrete the mineral, intake above 15 mg manganese per day is strongly discouraged.

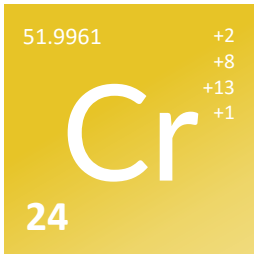
Gram, mg, µg, help!

These units can get pretty confusing. Especially when it comes to the smaller units: mg and µg, it can be pretty hard to imagine just how small the amounts really are. To freshen you up:

- 1000 milligrams (mg) = 1 gram (g)
- 1000 micrograms (µg) = 1 milligram (mg)

To give you an idea, a banknote or standard sized business card weighs about 1 gram. Now take a 1/20.000 piece of that banknote, and that would be the weight of the recommended daily amount of molybdenum (50 µg) - very small.

Chromium



Chromium helps in the regulation of our blood sugar by enhancing the action of insulin. Furthermore, chromium plays a part in the storage and metabolism of carbohydrates, protein and fats.

Where do I get it?

Chromium is found in a lot of different foods, but mostly in very small amounts. Good sources of chromium include whole grain products, meat and some types of fruits vegetables, with broccoli, grapes, potatoes and bananas topping the list

The mechanisms of action of chromium in the body are not well understood. There is no clinically defined state of chromium deficiency, but low levels of chromium have been shown to cause diabetes type 2 in animals and humans sustained by total parenteral nutrition (feeding tube) lacking in chromium.

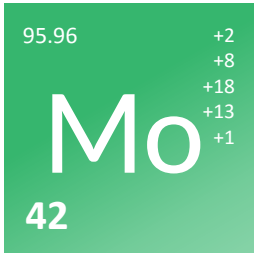
Jake provides 40 µg (100%) chromium, mainly through oats and chromium chloride. Chromium chloride has shown to raise high density (good) cholesterol and improve insulin sensitivity in patients with evidence of insulin resistance. The bioavailability of chromium chloride is relatively low.

What does organic mean?

We know that vitamins are organic compounds that our body needs to function. Selenium selenite apparantly is a naturally occuring inorganic substance, so organic doesn't mean natural.

Simply put, organic means that a compound contains carbon, or a significant amount of carbon.

Molybdenum



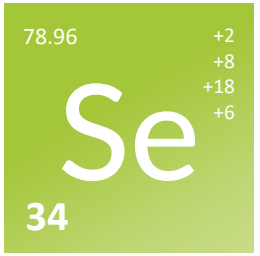
Molybdenum functions as a cofactor in the production of three enzymes and is also a part of the molecule of those enzymes. These enzymes support our kidney function and our sulfur metabolism.

Where do I get it?

Molybdenum is found in various plant foods, depending on whether the soil on which the plants grew was rich in molybdenum. Good sources of molybdenum are leafy greens. legumes (beans), whole grains, milk, eggs and organ meats such as liver and kidney. Molybdenum deficiency is unknown under normal medical and dietary conditions.

Jake provides 50 µg (100%) molybdenum through oats and sodium molybdate: a highly bioavailable source of molybdenum.

Selenium



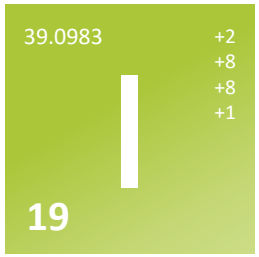
Selenium is a trace mineral that is needed in the production of selenoproteins: enzymes that protect our cells from oxidative stress. Furthermore, selenium supports our muscle function, thyroid function and it helps to protect us against heavy metal poisoning.

Where do I get it?

Selenium is found in most plant foods, depending on whether the soil on which the plants grew were rich in selenium. Nuts, seafood and meats also provide a decent amount of selenium, depending on the amount of selenium in the soil and vegetation.

Jake provides 55 µg (100%) selenium through sodium selenite. Sodium selenite is an **inorganic** form of selenite that naturally occurs in plant foods. Sodium selenite is used in the prevention and treatment of Keshan disease.

Iodine



Iodine is necessary for normal thyroid function and for the production of thyroid hormones. These hormones are essential for proper growth, development of our nerve system and iodine is necessary for our cells to create energy from the food that we eat.

Where do I get it?

Iodine is found in the biologically available form of iodide. Seaweeds are the best sources of iodide, although the iodide concentration varies a lot and the amount of iodide in seaweeds are excessive when consumed often. Other good sources are fish, milk, dairy products, eggs and whole grains.

Most Western countries have salt iodization programs. Salt manufacturers add iodide to their table salt, which is used by consumers at home and often by bakers. Due to these programs, iodide deficiency is not common anymore, but is still seen with people that do not eat bread or other sources of fortified salt.

Jake provides 150 µg (100%) iodine through sodium iodide, the sodium salt of iodine. Sodium iodide is highly bioavailable and is most commonly used in cases of iodide deficiency.

Fluoride

Fluoride, the anion of fluorine, is not essential for human growth and development. Fluoride is beneficial in the prevention of dental caries. Fluoride helps to strengthen the teeth enamel and it prevents dental bacteria to metabolize sugar into acids.

Where do I get it?

All water naturally contains fluorides and in many countries fluoride is added to public drinking water in order to prevent tooth decay on large scale. Due to the ubiquitous presence of fluoride in the environment it is not possible to have zero exposure to fluoride, under normal circumstances.

We encourage you to always brush your teeth before you eat and to use some fluoridated toothpaste when you do. But in food, supplemental fluoride does not have its place.

Jake does not provide any fluoride. We already receive fluoride naturally through water and all nutrition that contains water. The tolerable upper intake limit for fluoride is only 7 mg (200%) per day, which is very close to the recommended daily amount of 3.5 mg per day.

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.

EAT WHAT YOU NEED JAKE