



ORGANIC SILICA

THE NATURAL
SOURCE OF
WELL-BEING

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What is organic silica?

After oxygen, silica is the **second most common mineral in the earth's crust**. Both elements form silicates, the most abundant group of minerals on earth. The union of oxygen and silica is the **structural basis of all silicates**, which may be accompanied by other elements such as iron, magnesium, or calcium.

Silica, in the form of silicate, seeps naturally into the water of rivers, lakes and springs. Plants absorb it from the soil through their roots and transform it into phytoliths, **but so far, we are only talking about mineral silica, i.e. silica without carbon, crystallised silica**.

Organic silica is a molecule composed of carbon and oxygen atoms that are bonded to mineral silica. By this, we mean that organic silica is mineral silica bound to carbon, the element of life. Just as in plants and animals, the human organism also contains organic silica to be able to grow and develop.

Loïc Le Ribault, a doctor of science, geologist and expert in microanalysis, has studied organic silica in all its aspects for over thirty years. In two articles published in the Académie des Sciences, he demonstrated that certain quartz crystals contain diatom-like micro-organisms on their surface, which produce a water-soluble organic silica film by digestion.

Organic silica is an **essential trace element for our body**. Among its many properties, it is a decisive element in producing **collagen and elastin**. The renewal of these two proteins is essential for maintaining connective tissue in good condition.

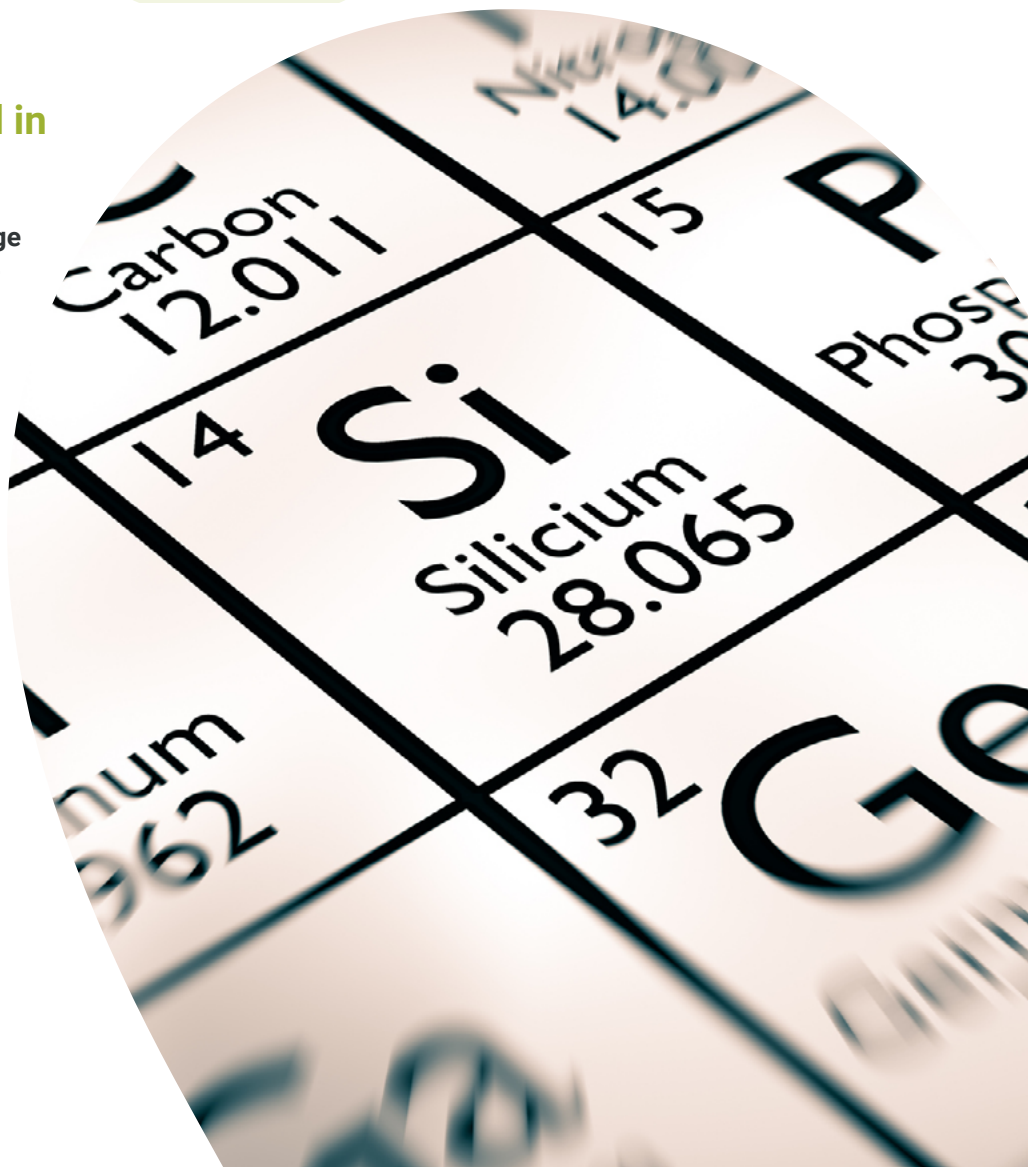
Scientists, physiotherapists and herbalists have always sought ways to obtain an organic silica compound to take advantage of its therapeutic efficacy. The French chemist Norbert Duffaut was the first to synthesise it. Later, the geologist Loïc Le Ribault, considered the father of sclerotherapy, perfected and improved the molecule.

Tabashir bamboo (*Bambusa arundinacea*). However, in this case, silica is present in its **inorganic form**, so its assimilation is low.

- **In some plant-based foods**, such as whole grains (oats, rye, brown rice, quinoa and especially millet), nuts and seeds.
- **In the egg, a product of animal origin**. The inner shell membrane is rich in organic silica, although it would take an inordinate amount of eggs to supplement it.

Where is silica found in organic form?

- **In the cells that form cartilage and bone, the collagen of skin and connective tissue** supports and protects other tissues and organs.
- **In certain plants**. Among the richest are horsetail (*Equisetum arvense*), nettle (*Urtica dioica*) and



Organic silica has an important regenerative function for health and well-being due to its ability to generate collagen naturally.

Functions of organic silica

Organic silica has an important **regenerative function** for health and well-being due to its ability to generate collagen naturally.

In the embryonic stage, **silica is necessary to form blood vessels, bones, tendons, muscles, cartilage, nails, hair and teeth in the foetus**. In addition, its regenerative action is essential to keep skin young and bones and joints in good condition due to its **fundamental role in properly functioning connective tissue**.

The term connective tissue encompasses a variety of organ tissues that connect, support and separate different organ systems. They all share functional and structural similarities.

Different connective tissues are responsible for other specialised functions:

- They act as mechanical support for the various structures of the body.
- They act as a medium for exchanging oxygen, nutrients and waste disposal.
- They act as protection and defence against pathogens.

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Benefits of organic silica

The properties of silica contribute to cell regeneration and delay the ageing of the human being through its action on various tissues and structures of the organism. **These are its most important benefits:**

1. **Together with vitamin C, silica is responsible for activating the enzyme that enables the production** and settlement of collagen fibres in the dermis. It promotes the synthesis of collagen and elastin. Elastin is responsible for supporting the collagen fibres and keeping them in place.

Both proteins provide firmness and elasticity to our skin. When we are young, skin

regeneration occurs approximately every 28 days. However, as we age, this process slows down, so between the ages of 40 and 50, regeneration occurs every 1.5 to 2 months.

The second layer of our skin, the dermis, is made up of almost 80% collagen. The reduction of this element and elastin fibres favours the appearance of wrinkles and flaccidity.

2. This same capacity of silica makes it indispensable for the **regeneration, resistance and strength of joint tissues**. As we age, collagen production decreases, resulting in loss of elasticity and firmness of tissues, joint pain, problems with teeth and gums, and

osteoporosis.

3. Silica is present in the form of silanolate, a derivative of silicic acid. Several studies have shown that silica is bound to the polysaccharide matrix of cartilage, and high silica concentrations were detected bound to hyaluronic acid, chondroitin 4-sulphate, dermatan sulphate and heparan sulphate. The bridges generated with silica play a fundamental role in the structural organisation of the glycosaminoglycans (mucopolysaccharides) and polyuronides, that form hyaluronic acid. Silica can thus function as a biological cross-linking agent and contribute to the architecture and strength of connective tissue.

4. **Maintains skin health.** The skin is the largest body organ and is a robust defence against external factors such as bacteria, temperature and chemicals. An adequate level of silica helps maintain the skin's capacity for cell regeneration and, consequently, maintains the skin's protective and reparative efficiency. As we have explained, a

lack of silica prevents the proper production of collagen and therefore reduces the effectiveness of tissue repair so that wounds or burns heal more slowly. It is also easier for itching or minor eczema to appear on the skin.

5. **It eliminates heavy metals** from the body, such as aluminium, cadmium and mercury. Recent [scientific studies](#) have linked [Alzheimer's disease](#) to the accumulation of heavy metals in the brain, particularly aluminium. Silica acts as a chelator, i.e. as a chemical compound. It traps metal ions and forms soluble, harmless



complexes that serve to remove harmful metals from the body via the kidneys.

6. **Stimulates the body's immune response.** Silica promotes the proliferation of T-lymphocytes, specialised cells responsible for coordinating the cellular immune response to viruses and bacteria.

Studies show that silica increases the levels of these immune cells in the body.

7. **Provides vitality to the hair.** With age, changes occur in hair health. Silica stimulates cell metabolism, strengthening the hair structure, improving microcirculation and slowing down hair loss. It also revitalises hair by optimising the supply of nutrients to the hair root.
8. **Maintains the flexibility of the arteries.** Arterial wall tissue is one of the most concentrated in organic silica. The aorta is the organ in the body, richest in organic silica.

The deterioration of the arteries and the formation of atheromas, cholesterol plaques and calcium accumulations in the arterial walls is linked to the passage of time and the progressive decrease in silica, as the fibres of the tissue become more fragile and

permeable to lipids. Cholesterol plaques calcify and harden the arteries, raising blood pressure and cardiovascular risk. **Silica helps to prevent these consequences and to keep arterial walls flexible.**

9. **Organic silica is necessary to assimilate other minerals** such as magnesium and calcium and for vitamin D synthesis. A correct level of this trace element helps to protect the body against certain diseases caused by vitamin and mineral deficiencies.
10. **It acts as a cellular antioxidant** against free radicals. Its regenerative effect on skin cells and its reparative capacity contribute to soothing inflammation and slowing ageing due to oxidative damage. Organic silica is considered an effective natural anti-inflammatory.
11. **Combats psoriasis and other skin diseases and problems.** Silica's ability to optimise the immune response stimulates antibody production and improves cell communication. In addition, its efficacy as a natural anti-inflammatory is beneficial when joints are inflamed, as in the case of psoriatic arthritis.

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Silica in beauty and sport

Here are the benefits of silica in beauty and sport.

Natural cosmetics and beauty

In the field of beauty and wellness, organic silica has many benefits. Its ability to naturally generate collagen **is key to:**

- Prevent and attenuate the appearance of wrinkles, fine lines and other signs of ageing.
- Optimal healing of skin wounds.
- Maintain the skin's elasticity and youthful appearance.

- Strengthen teeth, nails and hair.
- Prevent flaccidity.

The firming and repairing virtues of organic silica make it a widely used ingredient in the production of natural cosmetic products. Organic silica for cosmetic purposes is normally obtained from plant or marine extracts. **These are its main uses:**

- **Anti-cellulite and anti-stretch marks.** Thanks to its cyto-stimulating activity on the dermis and hair follicle cells, it prevents and reduces cellulite and stretch marks, acting as a neck and bust firming agent and hair regenerator. Often

combined with other cosmetic agents, it takes advantage of its antioxidant power against free radicals, reconstituting and moisturising the supporting tissue.

- **Moisturising.** Moisturising creams with organic silica intensely nourish and regenerate the skin, giving it a rested and luminous appearance. In addition to its moisturising function, it also has a restructuring capacity that results in a tissue capable of maintaining the hydration of the dermis, which simultaneously strengthens its structure. The result is highly efficient products with a pleasant, light and silky texture that allow the maintenance of very complete and long-lasting hydration.
- **Cosmetics for sensitive skin.** Silica is a natural product, not at all aggressive. It does not present allergic reactions, which makes it totally suitable and highly recommended for people with sensitive, flaky, dehydrated and atopic skin, among others, who can benefit from its

advantages without any contraindication for their dermis.

Sport and physical activity

Silica is an excellent ally for athletes to give their best and for everyone to **maintain a good level of physical activity.**

Maintaining sufficient levels of silica in our body allows us to achieve and maintain higher levels of elasticity in our tissues and joints. Remember that this mineral is an **essential component of cartilage and joint tissue.**



Silica plays a vital role in:

- **The recovery and regeneration of muscle fibres** after the logical wear and tear caused by sport and the consequent strengthening of the musculature to face the following physical activity sessions.
- **Tissue growth** and, therefore, the excellent **repair process of micro-tears** that occur when training has been excessive or insufficient recovery time has been allowed.
- **Prevention of joint ageing** thanks to its power to activate collagen production.
- **Prevention of sports injuries** by contributing to the assimilation and fixation of calcium.



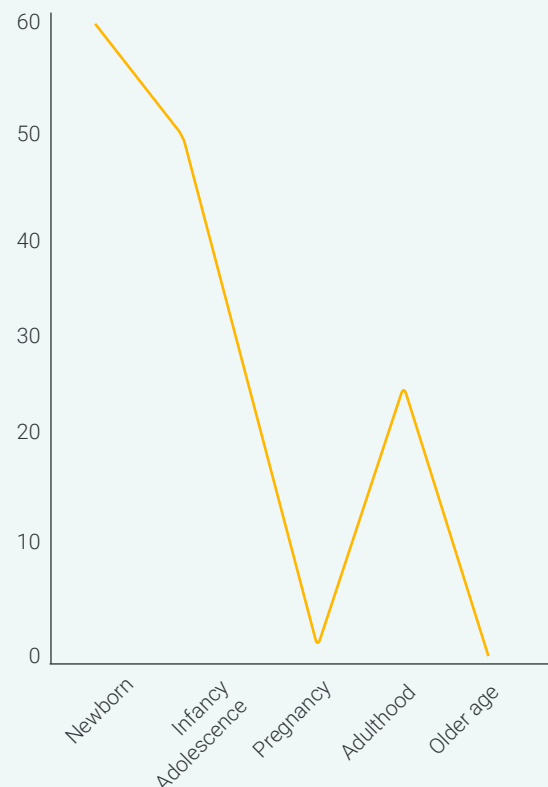
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How silica acts in our body

The silica cycle in the body comprises three stages: absorption, distribution and elimination. This mineral is absorbed, distributed and finally expelled from the body through urine or sweat:

- **Absorption.** The most common way silica enters the body is via the gastrointestinal tract, mainly through the duodenum. It is essential to bear in mind that between the ages of 35 and 40, intestinal absorption of silica decreases and natural deposits of this vital trace element becomes less and less. It also coincides with the reduction in collagen that occurs at this stage of life.

This graph shows how silica levels **drop, especially**



during pregnancy and adulthood.

- **Distribution.** Silica is present in our bodies from the moment we exist, with the muscles and spleen being the first organs in which it appears before being distributed throughout the rest of the body.

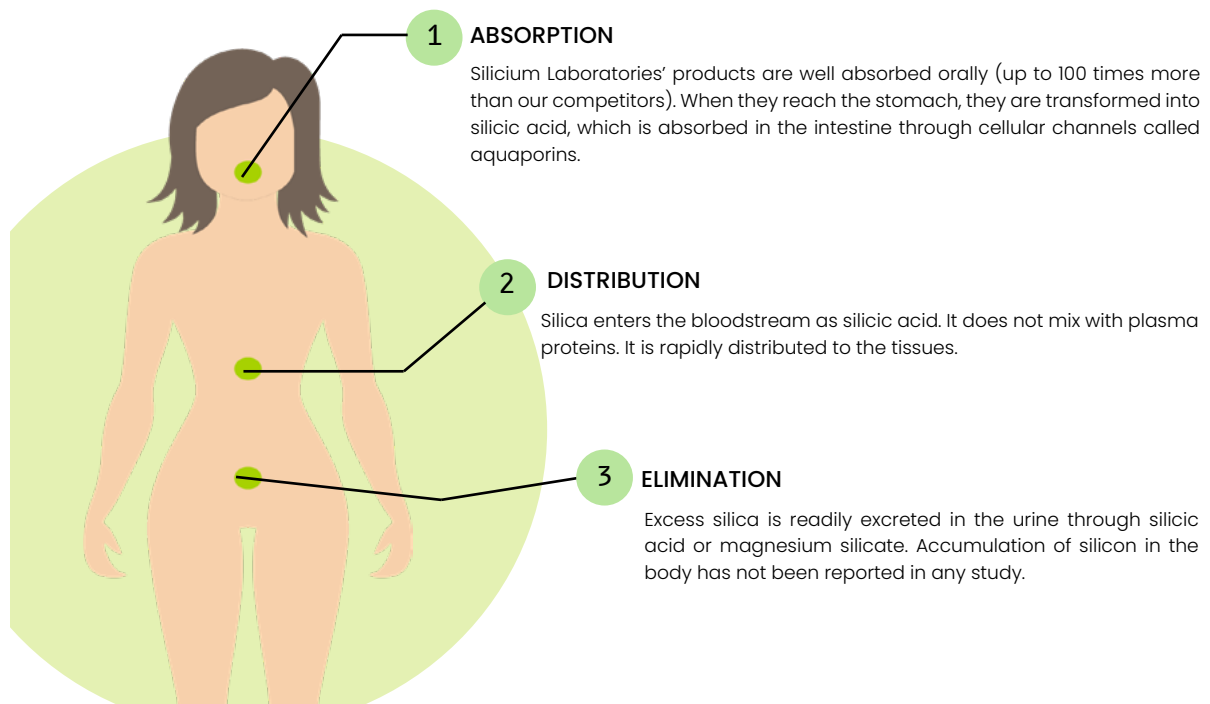
Normal silica levels in an adult person's body are around 7 grams. The amount of silica in human blood is about 10 mg per litre.

This mineral is found mainly in the spleen and thymus (lymphatic organs), thyroid gland, adrenal glands, pancreas, liver, kidneys, heart, muscles, tendons, bones and the walls of arteries and veins.

Silica is found at various levels of cell structure and is abundant in connective tissue, cartilage, skin, hair and nails.

- **Elimination.** Silica is excreted from the body through urine, faeces or sweat, but it is also lost when cutting hair, nails or mucus.

In this image, you can see the different stages that organic silica goes through in the body:



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From what sources does silica come?

Food is the primary source from which humans obtain silica. This mineral is present in the composition of all living things. Including foods with high silica content in the diet **is one way to help maintain good levels of this mineral.**

These are the foods with the highest silica composition:

- **Fruits:** apple, orange, kiwi, mango, strawberries, grapes, banana, avocado.
- **Vegetables:** raw cabbage, carrots, onions, cucumber, pumpkin, green beans.
- **Green leafy vegetables:** spinach, Swiss chard, lettuce, asparagus
- **Whole grains:** oats, wheat, barley, millet, rice, alfalfa, barley, maize, soybeans.
- **Legumes:** lentils, chickpeas.
- **Nuts:** almonds, walnuts, cashew nuts.
- **Seeds:** Sunflower, pumpkin.
- **Fish:** salmon.
- **Others:** soya, seaweed.

- **Plants (for infusions):** horsetail, bamboo, stinging nettle
- **Cooking the food** causes the mineral content of the food to be lost in this process.

Despite the wide variety of foods containing silica, **the following issues should not be overlooked:**

- **Plants planted in the soil absorb silica from agricultural soils.** However, the impoverishment of these soils by erosion, acidification and chemical pollution leads to a significant decrease in silica content. Soils are acidified by natural causes (climatic or biological) and by human activity. A reduction in soil pH occurs due to an excessive accumulation of hydrogen and aluminium and a loss of calcium, magnesium or sodium, among other elements.
- **High consumption of refined foods, industrial animal husbandry or lower consumption of vegetables** in today's diet contribute to lower levels of silica in the body.
- A traditional source of silica was water, although the use of **aluminium salts in the urban water purification process eliminates the presence of silica.**

Therefore, the most direct way to increase the level of silica in the body is to **take an organic silica supplement with high bioavailability to ensure high absorption of this mineral.**

At Silicium Laboratories, we work to offer you **the best solutions based on organic silica** and natural ingredients and actives, and we have managed to ensure that our products have the most assimilable and effective form of silica available on the market.



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The best Silicium products

Here are some of our most popular products.
Check them out!

Silicium G7 Original

One of our most legendary anti-ageing products
for its effective joint and skin action:

- **It activates the production of collagen**, a key element in the composition of the articular facets, ensuring their well-being and optimal functioning of the body's mechanics and promoting an additional deposit of calcium in the bones.



- **It helps the body eliminate toxins, cleanse the liver and improve the digestive system.**
- **Provides shine, resistance and strength to the hair.**
- **Nourishes, regenerates and increases the consistency of collagen in the skin.**
- **Moisturises, nourishes and strengthens nails**

Product Reviews:

- 1 month ago: "Effective for joint problems. It is also effective from the beginning on gum inflammation. Prevented a back operation proposed to my mother-in-law."
- 4 months ago: "Fast delivery. I have known the product for years and find it very valuable on many levels and for many health problems."

Silicium G7 Siliplant



Made with organic silica from plants, it uses an innovative high-pressure system to improve the digestion of silica by the body's cells, which increases the rate of assimilation and accelerates results, as proven by scientific studies.

- **Provides joint comfort.**
- **Naturally boosts collagen production.**
- **Regenerates hair and helps hair growth and strength.**
- **Repairs brittle nails.**
- **Improves skin condition.**
- **Aids in the elimination of aluminium.**

Product Reviews:

- 1 month ago: "I've been taking it for a month, and I've noticed it quite a lot on my hair and a knee that was hurting. I'm going to keep taking it. I liked it a lot".
- 2 months ago: "Endurance, less fatigue and, above all, no unpleasant surprises in reactions!"

Silicium G7 Neuro Health

Product designed to combat oxidative stress in the brain contributes to the regular nervous system and psychological function. It contains biotin and organic silica in a formulation exclusive to Silicium Laboratories.

- Helps to **increase energy and mental alertness.**
- Promotes **concentration and memory.**
- Contributes to the **normal functioning of the nervous system and psychological function.**
- **It combats the harmful effects of the primary inducer of oxidative stress in the brain, aluminium, which is linked to neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease and multiple sclerosis.**
- Biotin, a member of the B-complex group of vitamins, is identified as vitamin B7 - B8 and is also known as vitamin H. **It is involved in various biological processes in the body and contributes to the normal functioning of the nervous system, normal psychological function, normal macronutrient metabolism, and energy output.**

Product reviews:

- 2 months ago: "This product is amazing. I have been taking it for over 2 months, and it is doing great. My hair and skin are in excellent condition, and I am in a zen mood... I recommend it"

Organic silica is an essential trace element and fundamental for our health and well-being. Now that you know all its benefits, don't miss out on all its properties and feel for yourself how good it is for your body. Make this natural source of well-being yours and start taking better and better care of yourself.



