High Purity, Bioavailable Silica

- Strong Bones and Cartilage
- Healthy Skin and Nails
- Beautiful Hair*

**Trica-Sil™**
Boosts calcium absorption into bones by 50%*1
Improves bone density by 15%*7

- Proprietary water extraction process and purification methods
- Natural silica with marine lipids for virtually 100% absorption
- Clinically Studied

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*Data subject to verification. Consult a healthcare professional before starting any new supplement regimen.
**Silica**

Silica is a crucial trace mineral found in bones and fast growing tissues such as hair, skin, and fingernails, which are especially dependent on silica for strength and resilience. It’s also a major building block of collagen, which helps keep skin supple and blood vessels strong.

Silica naturally occurs in the human body. It is primarily obtained from dietary sources such as grains, vegetables, beer, coffee and water. While no official requirement has been set, it is generally suggested that 10-25 mg daily are necessary to prevent deficiency, while intakes of 30-40 mg daily or more have been associated with more significant benefits for bone formation.²

*Silica plays many important roles in maintaining optimal health.*

First, it is *crucially important to healthy connective tissue* by ensuring the interconnection of two important components: collagen and proteoglycans. Collagen is the main protein present in humans, and is very abundant in connective tissue. Collagen is especially important for healthy bones, skin, tendons, ligaments, teeth, hair, and nails.

Proteoglycans are major components of the space that occurs between cells and, in forming links with collagen, makes collagen-rich structures stronger and more resilient. Therefore, supporting and strengthening this natural process results in stronger and more flexible hair and nails; firmer, less wrinkled skin; strong, healthy bones; more flexible ligaments and tendons; and improvement in the natural cushioning mechanisms in the joints.

Proteoglycans also can bind water, which allows for superior hydration in tissues containing collagen. This can also manifest itself as healthier looking skin and nails, as water content is associated with skin moisture.

Second, silica reduces peroxidation in the body. Lipid peroxidation is a form of oxidation in which cell membranes are damaged if the peroxidation is not stopped quickly enough. The end products of lipid peroxidation can be undesirable.³ Therefore, it is very important to have enough silica circulating in the body, as this mineral can stop lipid peroxidation reactions soon after they are initiated.*

Third, increased silica intake may support healthy aging brain function. One epidemiological study examined individuals whose drinking water had higher levels of silica. They found that for every 10 mg increase of silica intake, there was an 11% improvement in brain function.⁴

Fourth, bionatural silica is an important constituent of the arterial wall. It is integral to the body’s creation and maintenance of elastin fibers, which in turn contribute to the strength, flexibility and resilience of the artery wall.

Fifth, bionatural silica supports healthy immune system function by activating macrophages (white blood cells involved in the elimination of cellular debris and pathogens). Conversely, it has been shown that crystallized silica (whether mineral or synthetic) actually binds to hydroxyl free radicals that are toxic to macrophages. This helps to demonstrate the superiority of botanical silica with natural bonds to companion plant flavonoids over mineral or synthetic forms of silica.*

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Dietary Silica

As part of the aging process, the body in general, and the bones specifically, undergo a steady loss of minerals. Some of these minerals are well known, like calcium, magnesium, and potassium. But silica is lost at an even greater rate than these other essential minerals.

Unfortunately, the absorption of silica from dietary sources is very limited, due to insoluble and fibrous components. For examples, bananas contain a significant amount of silica. However, less than 2% of this silica is absorbed in the gastrointestinal tract during digestion, which is negligible. Consumption of 50 bananas would equal only about 8 mg of absorbed silica.\(^5\)

Furthermore, the removal of unrefined food from the daily diet has eliminated important sources of silica, which is most prevalent in the fiber portions of grains and the skins of fruits and vegetables, which are often peeled before consuming.

Due to this combination of factors, many people do not attain optimal levels of silica.*

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**Trica-Sil™**

Silica can be obtained from botanical sources, mineral sources, or synthetically created. The form of silica in plants (often called organic or biological silica) has higher levels of bioactivity than other forms. The highest edible source of silica comes from the common horsetail (Equisetum arvense) stem, which is about 80% silica.

Trica-Sil™ is a compound containing bionatural silica (silica bound in a complex of bioflavonoids, plant acids, and phenols extracted from horsetail). Because the silica in horsetail is bound to other substances in the plant in a complex manner, the absorption and activity of this vital mineral have enhanced physiological impact. In simpler terms, this type of silica will have more potent and measurable health benefits than other mineral or synthetic silicas. In fact, in a study of Trica-Sil and another rich botanical silica source (bamboo) it was found that Trica-Sil was less than 0.01% the molecular size (600 micrometers - bamboo vs 5 micrometers - Trica-Sil), assuring a much higher level of assimilation.\(^6\)

Trica-Sil is obtained by a unique soluble water extraction process (no chemicals, no solvents) that preserves the silica’s natural bond to companion compounds from the plant, while filtering out the insoluble parts, which are abrasive and harmful if ingested. After this purification and extraction, the compounds are micronized (very small particles) and blended with marine lipids. Marine lipids are nature’s perfect transport mechanism for absorption and utilization within the body. It does not matter how much silica you ingest—what matters is how much is absorbed. Trica-Sil provides bionatural, highly absorbable silica so you can reap the highest benefits from this necessary mineral. Only silica in this bionatural form enables calcium to be transferred to the bones. The other mineral forms of silica are actually involved in transporting calcium away from the bones, to other tissues. This can be of concern if the other tissues are arterial walls, in which calcium deposition can be problematic.

**Silica Concentration**

Although small amounts of Silica are found throughout the body, the highest concentrations occur in connective tissues, such as nails, skin, hair and teeth.

<table>
<thead>
<tr>
<th>Tissue</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nails</td>
<td>19%</td>
</tr>
<tr>
<td>Skin</td>
<td>6.25%</td>
</tr>
<tr>
<td>Hair</td>
<td>6%</td>
</tr>
<tr>
<td>Tooth Enamel</td>
<td>6%</td>
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</tbody>
</table>

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**Trica-Sil™ Clinical and Case Studies**

Trica-Sil™ has been the subject of several scientific and clinical studies, and described in multiple case reports. Many of these studies specifically examined the effects of Trica-Sil on supporting bone and dental health.*

**Trica-Sil™ Increases Collagen Formation and Bone Uptake of Calcium**

The effect of Trica-Sil™ on the metabolism of the bone matrix was investigated by *in-vitro* tests, performed on cultures of human bone. Trica-Sil significantly increased the growth of collagen by over 50%, stimulating the total protein metabolism within the bone matrix.¹

**Trica-Sil™ Reduces Bone Resorption and Increases Bone Formation**

A randomized, double blind, placebo controlled study over 12 months of 65 women revealed that Trica-Sil supported bone health and strength as measured by the biomarker serum C-terminal telopeptide of type I collagen (CTx or CTX), which is associated with the process of bone resorption. Bone resorption is the movement of minerals out of the bone and into the blood stream. Lower levels of CTX indicate lower activity of the natural bone resorption process (see chart below), while higher levels indicate greater flow of minerals out of bone tissue. Trica-Sil supported a healthy balance of mineral flow into versus out of the bone, as indicated by lower CTX levels.⁷

**Balanced Bone Remodeling**

(as measured by serum crosslaps monitoring of CTX levels)

Use of Trica-Sil is associated with lower levels of CTX, indicating less movement of minerals out of bone and better overall bone density.

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**Trica-Sil™ and Bone Support as Measured by X-Ray and Structure/Function Evaluations**

A Trica-Sil™ study (single arm, open label) was performed on 150 individuals seeking significant bone support. A consistent finding from X-ray and other structural evaluations was an increase in anabolism (bone building activity) and a balancing of the natural ratio of bone anabolism with bone catabolism. Doctors reported that in 80% of participants, significant indicators of bone health support were evident after 15 days of use, and further gains were measurable after 6 weeks of use.8

**Trica-Sil™ and Dental Health**

A Trica-Sil™ open label study was performed on 37 participants over the course of 3 months. Dentists evaluated parameters of both tooth and jawbone health. Support of jaw bone and dental health were measured and found to be significant at the end of the 3 month trial.9

**Trica-Sil™ Case Study on Bone Density**

In a single case study, doctors gave a volunteer subject (a 56 year-old woman) Trica-Sil™ for 6 months, measuring the lumbar spine and neck of the femur. Measurements before use were 0.804 grams per centimeter cubed (gm/cm³) and were 0.903 gm/cm³ after 6 months of use, for an increase of 12.3%.

In a second individual study, doctors performed this again on a different volunteer (a 48 year-old woman), with changes noted of 0.992 gm/cm³ before use to 1.009 gm/cm³ after 6 months of use, for an increase of 1.7%.

In a third case study, measurements were taken before use and after 6 months of use in a third volunteer (a 64 year-old woman) with changes noted of 0.644 gm/cm³ prior to use and 0.685 gm/cm³ after 6 months of use, for an increase of 6.3%.10

Doctors concluded that these initial significant reports indicated a very positive effect of Trica-Sil on bone health.*

**Safety**

There are no known adverse effects associated with ingestion of natural silica. A 12 month study of 65 women taking Trica-Sil™ daily found no negative changes in blood work after one year of product use. Trica-Sil toxicity data suggests that typical levels of intake (10-25 mg daily) pose no risk of adverse effects for the general population. In fact, certain populations consume as much as 150 – 200 mg of dietary silicon daily with no reported adverse effects.11, 12

**SUPPLEMENT FACTS**

<table>
<thead>
<tr>
<th>Serving Size: 2 Tablets</th>
<th>%DV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Silica from Horsetail (Equisetum arvense) Extract flavonoids and trace minerals (from the sea), bound to marine lipids.</td>
<td>20 mg**</td>
</tr>
</tbody>
</table>

**Other Ingredients:** tricalcium phosphate, apple powder, magnesium hydroxide, silicon dioxide, marine (shark oil) phospholipids, magnesium stearate, cellulose, trace minerals, titanium dioxide, stearic acid, chlorophyll coating.

Contains no sugar, salt, yeast, wheat, gluten, corn, soy, dairy products, artificial coloring, artificial flavoring, or preservatives.

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For Optimum Health Combine Trica-Sil™ With These Formulations.

Healthy Bones

**OsteoStrong™ — Maintains Strong Healthy Bones**
Bone requires a variety of nutrients, including minerals, amino acids and trace minerals. OsteoStrong™ is a unique proprietary formula that contains all the necessary nutritional components that make bone a living structure. In addition to the standard necessary vitamins and minerals for strong, healthy bones, OsteoStrong contains a unique form of vitamin K-2 (Mena-Q7™) that dramatically improves calcium absorption into the bones, protecting bones for life. This superior formula contains high levels of Vitamin D, Boron, calcium and magnesium to support strong healthy bones.*

**Strontium — Trace Mineral Essential for Bone Health**
Strontium is one of the many trace minerals essential for bone health. Studies indicate that strontium positively affects bone strength. It may also support bone formation and decrease bone resorption (or breakdown), thereby enhancing bone mineral density (BMD).*

Healthy Skin

**HyDra-7™ — Omega 3,6,7, and 9 to Support Healthy Skin**
Edible berries and seeds from the Sea Buckthorn tree contain exceptionally high levels of Omega-7 fatty acid, as well as other important nutrients, vitamins and flavonoids. Hydra-7™ has been clinically studied to improve skin hydration by 48% after 3 months of use, increasing skin softness and elasticity. This unique oral formula helps protect skin from free radicals caused by stress and pollution, while renewing dry skin and enhancing its health and beauty.*

Healthy Hair

**Milasan™ — Millet Seed Oil Extract for Healthy Hair Growth**
Milasan™ provides essential nutrients for healthy hair growth. The unique Millet seed oil extract contains valuable linoleic acid, the triterpenoid milicadin, as well as other phytosterols and squalene to help sustain healthy hair growth and strength. Zinc is essential for healthy hair structure and growth. Biotin helps build proteins including keratin, an important structural element of hair. Vitamin B6 is needed by the body for protein utilization. Panthenolic Acid is particularly important for fast-growing cells, including those in hair roots, and a prerequisite for healthy hair growth for both men and women.*

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References

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