



Strontium

Common Indications:

- Osteoporosis prevention
- Dental caries prevention
- Dental hypersensitivity
- Prostate cancer progression

General Comments:

Strontium is considered a non-essential mineral that is naturally present in food and water and in trace amounts throughout the skeleton. Naturally occurring, stable strontium is non-toxic and should not be confused with its radioactive isotope. First used in the 1940s and 50s as a treatment for osteoporosis, strontium demonstrated significant benefits without side effects. This initial research utilized a strontium ion dosage 2.5 times greater than recent controlled clinical trials.

Strontium may help prevent cavities. A recent Navy study found that 10% of the respondents in the survey who reported no dental cavities over the course of ten years all resided in the same small town that boasts unusually high levels of strontium in the water.

Benefits & Mechanism of action:

Osteoporosis prevention

Strontium has been reported to decrease both bone resorption and increase bone formation, resulting in significant increases in bone mineral density and reduced risk of fracture^{2,4}. At the cellular level, strontium enhances the activity of osteoblasts while simultaneously reducing osteoclastic activity.

Intestinal absorption of strontium is about 25-30% of which 50-80% is taken up by the bones. In the presence of calcium, strontium absorption is reduced by half. Intestinal absorption is vitamin-D dependent and decreases with aging, food and diets high in other minerals. When unbound by serum proteins, strontium is cleared by urinary and fecal routes. The remaining mineral is retained in soft and mostly calcified tissues.

Some studies have reported the benefits of strontium usage in bone loss prevention in menopausal women^{3,5,8}.

Dental caries prevention

Strontium in combination with fluoride helps improve tooth enamel re-mineralization^{9,10,11}.

Dental hypersensitivity

Some studies have shown that topical use of strontium 8% and 10% reduced the pain of sensitive teeth^{12,13,14,15,16}. The clinical effects were mostly observed when patients brushed twice daily with topical strontium¹⁶.

Prostate cancer progression

The administration of intravenous strontium has been shown to slow down the progression of prostate cancer and relieved the pain caused by the cancer^{17,18}.

Dose:

DRI* None established

ODA** 10 – 600 mg daily

Dental use: brush twice daily¹⁶

* The Dietary Reference Intakes (DRI) are the most recent set of dietary recommendations established by the Food and Nutrition Board of the Institute of Medicine, 1997-2001. They replace previous RDAs, and may be the basis for eventually updating the RDIs.

**The Optimum Daily Allowance (ODA) represents a reference level beyond the RDI, and is often many times higher than the RDI to prevent diseases such as aging or cancer. These numbers are based on clinical use.

Cautions & Side Effects:

In all of the clinical trials using maximum dosages of elemental strontium, side effects were no greater than placebo.

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Osteoporosis prevention

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Dental caries prevention

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Dental hypersensitivity

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Prostate cancer progression

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