

FLUORIDE



The element Fluorine accounts for about 0.3g/kg of the earth's crust and exists in the form of fluorides in a number of minerals. The most important source of fluoride is drinking water, which may contain varying concentrations of naturally occurring fluoride depending on the water source. The impact of fluoride on caries prevention is well documented and water fluoridation, fluoridated toothpaste, oral rinses as well as the beverages made with fluoridated water contributes significantly to the dental health.

Mechanism of action

Fluoride contributes to decay-resistant teeth via three primary mechanisms. First, when it is incorporated with calcium and phosphorus in the tooth it forms fluoroapatite, a compound that is resistant to acid. Fluoride also promotes repair and remineralization of the tooth surface after early signs of tooth decay. It further helps reverse the decay process while promoting the development of the tooth surface which in turn has helped to deter the harmful effects of bacteria in the oral cavity by interfering with acid production by bacterial cells.

Fluoride can be applied topically and systemically. Fluoride, consumed in your food and drinks, enters the systemic circulation and is deposited in your bones and teeth. A very small amount of fluoride enters your soft tissues, the remainder is excreted. The primary source of systemic fluoride is water; food and beverages contribute to a lesser degree. Topical fluoride sources include toothpaste, gels, and rinses (mouth washing products e.g. Listerine) used by consumers daily.

Other sources of fluoride

Most foods, unless prepared with fluoridated water, contain a minimal amount of fluoride. Brewed tea is the most significant fluid source of fluoride. Fluoride may be unintentionally added to the diet in the number of ways. Fruit juices and drinks, particularly white grape juice produced in cities with fluoridated water; may have increased fluoride content; however, due to the wide variation in fluoride content, it is difficult to estimate amounts consumed. It is wise for health professionals to consider the child's fluid intake, as well as sources and the availability of fluoride in the drinking water, before prescribing fluoride supplements.

Bone meal, fishmeal, and gelatin made from bones are potent sources of the mineral. Fluoride supplementation of certain foods or beverages can be a public health measure facing consumers. Disease-associated risk of fluoride is largely unfounded. No epidemiological studies demonstrated any link between fluoride and cancer or AIDS. Optimal Fluoride usage has no adverse health effect and the risk of toxicity is negligible. High fluoride dose exposure for extended periods produces skeletal fluorosis (brittle bones) and discoloured teeth. Low concentrations provide protection against dental caries, especially in children.

Rand Water complies with the guideline values of SANS 241 for drinking water quality. The water is purified by means of a conventional purification process, resulting in water that is safe to drink. Guideline values adopted are both practical and feasible, by removing or reducing the concentration of any contaminants to the desired safety level. The fluoride in your drinking water is adequate (0.2 mg/l) and in most circumstances the food that we eat contributes to fluoride intake. Rand Water does not add fluoride to the water.

Visit www.reservoir.co.za for further information on water quality in your area.

