Safe use of fluoride at home

Fluoride products when handled appropriately pose very little risk of adverse effects. However, it is important to be aware of the appropriate use and storage of fluoride-containing products to ensure their safety.

The guidelines are simple. All fluoride-containing products, including toothpaste, should be kept out of reach of children. To reduce the risk of dental fluorosis parents should supervise toothbrushing for children under the age of six, apply the toothpaste for the child (only a smear), and discourage the child from swallowing or eating it. It is also recommended that children under six years of age should use a low fluoride children’s toothpaste such as Colgate Junior. Further guidelines for appropriate toothpaste use by children are included in Fluoride Information Pamphlet No. 3 Fluoride and Dental Fluorosis.

Summary

There is no evidence of adverse health effects attributable to fluoride in communities exposed to an appropriate combination of water fluoridation and other contemporary sources of fluoride. “There is no basis for altering current policy [on water fluoridation].”

(National Health and Medical Research Council, 1991)

References


Further information can be obtained from

Dental Practice Education Research Unit
Department of Dentistry
The University of Adelaide
AUSTRALIA 5005
Telephone  (08) 8303 5438
Toll Free  1800 805 738
Fax    (08) 8303 4858
E-mail  dperu@dentistry.adelaide.edu.au

Fluoride is present naturally
Fluoride as an element ranks 17th in abundance, occurring principally in rocks, soils and the sea. Owing to the universal presence of fluorides in the earth’s crust, all water contains fluoride in varying concentrations. Small amounts are also present in almost all foods.

Fluoride and the human body
Fluoride is normally present in the human body. Approximately 75-90% of the fluoride ingested each day is absorbed from the alimentary tract. About half of that fluoride (more in growing children) becomes associated with teeth and bones within 24 hours of ingestion. The remaining fluoride is eliminated almost exclusively by the kidneys.

Dental fluorosis
Dental fluorosis (enamel motting) results when excessive amounts of fluoride are ingested during the years of tooth formation. It is characterised by enamel defects ranging from barely noticeable opaque or white flecks to surface pitting and brittleness. Secondary brown staining may be associated with more severe fluorosis.

The milder forms of dental fluorosis do not compromise oral health and function, however, more severe forms may be perceived as an aesthetic problem by children, parents and other observers (Riordan, 1993; Hoskin and Spencer, 1993). It is for this reason that fluoride intake of children under six year of age should be controlled.

Skeletal fluorosis
Skeletal fluorosis is a chronic metabolic bone and joint disease caused by long term exposure to high doses of fluoride. Studies conducted in the United States have not detected radiographic changes in bone density in persons drinking water containing less than 4mg fluoride per litre (Kaminsky et al, 1990).

Cancer
More than 50 epidemiological studies have investigated the possibility of a relationship between fluoride concentration and human cancer, and have found no evidence for an association between fluoride in drinking water and risk of cancer.

A National Health and Medical Research Council Working Group (1991) stated that:

“there is no evidence that fluoride is a risk factor for cancer in humans. None of the properly conducted epidemiological studies support such a contention, either in relation to all cancers combined or in relation to cancer at specific sites, including bone.”

Renal effects
Several human epidemiological studies have evaluated the effect of longterm exposure on kidney disease and function and have found no evidence of an increased frequency of kidney disease or renal dysfunction with fluoride at concentrations of up to 8ppm in drinking water (Kaminsky et al, 1990).

Total renal failure (where people receive dialysis regularly to stay alive) is the only health consideration where people should not drink water with 1.0ppm fluoride. Less severe renal conditions do not present problems.

Hip fractures
The existing literature is varied in the evidence available linking fluoride to hip fractures. Two recent unpublished studies have indicated no risk at optimal fluoride concentration in water.

Allergy and hypersensitivity
“...no evidence of allergy or intolerance to fluorides as used in the fluoridation of community water supplies.”
(NHMRC, 1991)

Reproduction and congenital malformations
The available epidemiological studies do not support an association between consumption of fluoridated water and congenital malformations such as Down’s Syndrome (Kaminsky et al, 1990).