



In everyone's mouth

**The mineral fluoride is good for your teeth.
Yet a lot does not always help a lot.**

From the foods we eat, we get trace elements that keep our body healthy. Fluoride is one of those. According to current knowledge, fluoride is not essential for human life, but small amounts are beneficial for dental health and help to protect against tooth decay.

Natural sources

Traces of fluoride are found everywhere in nature, including in water and foods. Seawater, for example, contains about one milligram (mg) of fluoride per litre, whereas concentrations in drinking water in Germany are usually below 0.3 mg per litre. Drinking water is not fluoridated in Germany. Mineral water, on the other hand, may contain higher amounts of fluoride – it pays to look at the label.

Foods naturally contain only very small amounts of fluoride. But, fish, and especially black tea, can be

rich in fluoride. The only food product in Germany to which fluoride may be added deliberately is table salt for household use. It is labelled, and it usually contains 250 mg of fluoride per kilogram of salt. This means that 0.5 mg of the trace element is obtained from use of about 2 grams of salt per day at home.

Tiny amounts are enough

The use of fluoride is important for caries prevention, along with tooth brushing and a tooth-healthy diet. Studies show that fluoride has a protective effect on tooth enamel and is able to inhibit the growth of acid-forming bacteria in the mouth. All in all, our body only needs tiny amounts for healthy teeth: according to the European Food Safety Authority (EFSA), a daily intake of 0.05 mg of fluoride per kilogram of body weight from all sources, including dental care products, is sufficient to prevent tooth decay. This value applies to children

from six months of age and adults, including pregnant and lactating women. It is equivalent to 3 mg of fluoride per day for a person weighing 60 kilograms.

Risk of excessive intake in children

In Germany, reliable data on the intake of fluoride are not available so far. To gain more credible information on this, in the BfR MEAL study (Mahlzeiten für die Expositionsschätzung und Analytik von Lebensmitteln – “meals for exposure assessment and analysis of foods”), the BfR is currently quantifying fluoride in a wide range of foods. It can be assumed that the daily tolerable upper intake level of 0.1 mg per kilogram of body weight, derived by the EFSA, is not normally reached here.

While there is generally no cause for concern for adults, caution is advised when dealing with fluorides in infants and young children. This is because young children are more likely to achieve the tolerable upper intake level because of their lower body weight; and the intakes from several sources quickly add up in everyday life. “Excessive fluoride intake over a long period of time increases the risk of dental fluorosis, especially during tooth development up to the age of about 8 years,” says Dr Anke Weißenborn, nutritional scientist at the German Federal Institute for Risk Assessment (BfR). Initially, they appear as white spots on the teeth; in more severe cases, however, discolouration and even loss of tooth enamel can occur. In Germany, it is estimated that mild fluorosis occurs in up to 20 per cent of 15-year-old children.

Also be careful with fluoridated salt

To ensure that fluoride strengthens the teeth from the very beginning, infants should be given fluoride tablets from the second week of life until their teeth erupt. As soon as the first tooth appears, very gentle brushing with fluoridated toothpaste should be started (see box). Parents should keep in mind: by swallowing toothpaste, whether intentionally or accidentally, young children can ingest plenty of fluoride. The BfR therefore advises parents to use only one source of fluoride to prevent tooth decay in their children. “As soon as fluoridated toothpaste is used, the intake of fluoride through tablets should be discontinued,” emphasises Anke Weißenborn. Parents should also be careful with fluoridated salt. In the first years of life, generally no or only little amounts of salt are consumed. However, results from the BfR Children’s Nutrition Study KiESEL, which investigated the food consumption of children aged six months to five years, show that around 50 per cent of the respondents prepare their children’s meals with salt fortified with iodine and fluoride or with iodine, folic acid and fluoride. ■

More information:
www.bfr.bund.de/en > A-Z Index: Fluoride



Be mindful

If the water used for preparing infant formula contains 0.3 mg of fluoride per litre or more, infants should not be given fluoride tablets in the first months of life, and from the first tooth until 12 months of age, only once a day a grain-of-rice-sized amount of fluoride-containing or fluoride-free toothpaste should be used. Otherwise, from the first tooth until 24 months of age, a grain-of-rice-sized amount of toothpaste containing 1,000 ppm fluoride should be used: up to twice a day in the first year, later twice a day. Then, until the age of six, a pea-sized dab can be used for brushing up to three times a day. This is the recommendation of the “Healthy Start – Young Family Network” at the Federal Centre for Nutrition (BZfE). It also includes that in the early childhood, parents should apply the toothpaste in correct doses and brush the teeth together with the child.

More information:
www.gesund-ins-leben.de > Für Familien > Baby > Karies vorbeugen (in German)

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Always use only one fluoride source for caries prevention