



Information on fluoride in drinking water in private water supplies

What is fluoride?

Fluoride is a common element found throughout the natural world in certain rocks and minerals, vegetation and drinking water. Nearly all foods and water contain fluoride and some drinks, such as tea may contain relatively high levels of fluoride. Your toothpaste and mouth rinses often contain fluoride to help reduce tooth decay. Some areas also have fluoride added to drinking water (fluoridation schemes) to reduce levels of tooth decay.

How much fluoride should be in my water?

Drinking water can contain lots of different substances and there are limits on the levels permitted in drinking water. The UK limit for fluoride is 1.5 milligrams of fluoride per litre of water (mg/L). This is the same as the World Health Organization's (WHO) guideline, set to protect health.

How can fluoride affect my health?

Fluoride can help prevent tooth decay but too much fluoride, from all sources including drinking water, may affect health. This includes effects on the bones and teeth. The limit on the allowable amount of fluoride in drinking water takes account of the fact that we may consume fluoride from a variety of sources. Drinking water above this limit may increase the risk of fluoride affecting bones and teeth, though the possible effects will vary between people.

Dental Fluorosis

When fluoride levels are high, teeth can be affected by a condition called dental fluorosis. This may affect the appearance of the teeth.

Dental fluorosis occurs when the teeth are being formed and is apparent when the teeth appear. It does not affect teeth after they have formed. Teeth will not be affected after the age of 8 as all teeth will have been formed (except for wisdom teeth).

Dental fluorosis can vary from mild to severe, though it is uncommon in England for fluorosis to be severe enough to seriously affect the appearance of teeth. Mild dental fluorosis is visible as very fine pearly white lines or flecking on the surface of the teeth. Severe dental fluorosis can cause the surface of the tooth to become pitted or discoloured.

Effects on bones

Exposure to relatively high levels of fluoride over many years can increase the risk of bone fracture in adults. It is difficult to measure the exact amount of fluoride that can cause these effects, not least because of difficulties in estimating total intakes of fluoride from all sources. However, adverse effects on the bone have been reported following exposure to 3 to 4 mg/L fluoride in water, but only later in life after many years of exposure. Individual risk can also vary.

!/my family member have an existing health condition. Are we more at risk?

People with kidney disease may be more prone to bone problems (for example increased risk of bone fracture) from relatively high levels of fluoride because they are less able to remove fluoride from the body in their urine.

What do I need to do now?

- If you have any concerns over the fluoride levels in your water and would like the water tested or re-tested we recommend that you contact your local authority who will advise on this. Local authority sampling charges apply.
- We would not recommend the use of drinking water containing fluoride above the regulatory limit of 1.5 mg/L for drinking or cooking for young children under the age of 8 years old. This is because there would be an increased risk of developing dental fluorosis. This water can be used for bathing and washing.
- For bottle-fed infants we would not recommend the use of drinking water containing fluoride above the regulatory limit of 1.5mg/L for making up infant formula. Use bottled water which has been boiled (to sterilise) and then cooled for infant feed. The label should be checked to ensure that it does not contain more than 200 mg/L of sodium or 250 mg/L of sulphate. Appropriate advice can be obtained from the NHS website (<https://www.nhs.uk/common-health-questions/childrens-health/can-i-use-bottled-water-to-make-up-baby-formula-infant-formula/>).
- To reduce the risk of bone problems, it is recommended that all children and adults do not regularly drink water containing fluoride above the regulatory limit of 1.5 mg/L over the long-term (i.e. many years). This is particularly important for higher concentrations where the risk would be greater (e.g. where the fluoride level in water is 3 to 4 mg/L).

Do I need to seek medical advice if my water supply has high levels of fluoride?

- If you are concerned about your general health, then please speak to your doctor.
- If you are concerned about the appearance of your teeth, then please speak to your dentist.

Where can I get further information?

NHS website: <https://www.nhs.uk/conditions/fluoride/>

Dentist finder: <https://www.nhs.uk/Service-Search/Dentists/LocationSearch/3>

World Health Organization's Guidelines for drinking-water quality, fourth edition, 2017. Chapter 12, Chemical Fact Sheets - Fluoride:

https://www.who.int/water_sanitation_health/publications/gdwq4-with-add1-chap12.pdf?ua=1

US Agency for Toxic Substances and Disease (ATSDR) Toxic Substances Portal, Fluoride frequently asked questions:

<http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=211&tid=38>