

A SMALL REVIEW ON FLUORIDE'S MYTHS & FACTS

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Fluorine is a highly reactive gas usually occurs in nature in elemental form. Groundwater with high fluoride concentration occurs in large parts of the world, including India. Although drinking water is usually the largest contributor to the daily fluoride intake, it is also found in atmosphere emerging from the dusts of fluoride containing soils. Fluoride can reduce or prevent dental decay and strengthen bones, so that it prevents bone fractures in older people. While excessive ingestion of fluoride during the early childhood years can damage the tooth-forming cells, known as dental fluorosis. Fluoride ingestion consists of various myths in our society, which averts people to take beneficial amount for good health as actual facts are still hidden about this dual end weapon.

KEYWORDS: Fluoride, water, ingestion, tooth.**INTRODUCTION**

Fluoride is an ion originating from the element fluorine. It is a constituent of earth's crust and consequently found in nature. About 96% of the total fluoride in human body is found in the bones and teeth. Fluoride is one of the important elements and is essential for man as well for animals. Most adult ingest between 1.0 to 3.0 mg of fluoride daily. The main source is usually drinking water which, if it contains 1.0 ppm of fluoride, will supply 1.0-2.0 mg /day, and compared to drinking water fluoride in food is of low importance. Fluoride is present in small amounts in human bones and teeth and its influence on the prevention of dental caries made it included as an element of importance in human life.^[1] Fluoride has several different health benefits like strengthen bone density, and it is most importantly known for its use in protecting teeth from decay. Fluoride is added to a wide variety of dental products, such as toothpaste or mouthwash for the use in community.^[2] Every element useful to human body

also have side effects which can be harmful too. Use of fluoride in human community has certain misconceptions which make fluoride ingestion to be avoided inside the body especially through water supply which leads to ill effects on health.³ Myths related to fluoride are there deep rooted in communities without the knowledge of facts related to it, and we should make people aware about actual benefits of fluoride.

Myths and Facts

Unfortunately, there are many myths regarding fluoride use in communities, particularly in relation of the water supply. Although much of this information is not based on fact, it has caused concern regarding the effectiveness and safety of fluoride use. With the help of social sites and the internet as a way to both research and spread information, it is easy to find negative and often disconcerting information regarding fluoride.⁴ Various myths and facts about fluoride are as follows,^[5,6,7,8,9,10,11]

Myth: People who drink fluoridated water will develop fluorosis.

Fact: Fluorosis occurs when a person takes in very high amounts of fluoride. Drinking water usually contains 1.0 ppm of fluoride, which will supply 1.0-2.0 mg /day.

Myth: Fluoride is dangerous for children.

Fact: Fluoride is not considered a danger to children when used as intended. Drinking fluoridated water not only helps to strengthen teeth as they grow, but it can also help prevent future tooth decay and loss.

Myth: Fluoride is extremely expensive for communities to fluoridate water.

Fact: Adding fluoride to the water is considered one of the less expensive ways to prevent tooth decay. It is cheaper in general than treating tooth decay.

Myth: Drinking fluoridated water will cause cancer.

Fact: As per various studies the addition of fluoride does not increase the risk of cancer or other serious health problems such as diabetes, heart disease, or kidney problems

Myth: Fluoridated water does not have an impact on tooth decay.

Fact: There have been numerous studies conducted in the various part of world that show that fluoridation helps reduce tooth decay among both adults and children.

Myth: Europe does not allow fluoridated water, which means the U.S. shouldn't, either.

Fact: European countries do have water fluoridation systems in place. Salt fluoridation is the common method that is used in Europe and also in Latin America.

Myth: Fluoride is medication that is forced on communities.

Fact: The fluoride that is used to fluoridate water is not a medicine.

Myth: The risk of autism is increased by fluoride use.

Fact: No evidence from research or study indicates that the risk of autism is elevated because of fluoride or fluoridated water.

Myth: Fluoridated water is not necessary because of the fluoride in toothpaste.

Fact: According to the Centers for Disease Control and Prevention, the amount of fluoride in toothpaste doesn't provide the level of protection needed to fight tooth decay. Together, fluoridated water and toothpaste work to provide maximum protection.

Myth: Fluoride is unnatural.

Fact: Certain levels of fluoride can be found naturally in water and other sources. Fluoridation only increases the level of fluoride to one that helps decrease decay.

Myth: Fluoride causes cancer.

Fact: Scientific studies from around the world have failed to demonstrate a link between water fluoridation and any type of cancer.

Myth: Fluoride causes allergies.

Fact: Fluoride is found naturally in most foods and water, various reviews by peak health bodies around the world show no connection between water fluoridation and allergies, hypersensitivity or other immunological effects.

Myth: Fluoride causes arthritis.

Fact: The incidence of arthritis is no different in fluoridated and non-fluoridated communities, and there has never been any evidence from doctors, let alone published studies, suggesting this.

Myth: Fluoride causes bone fractures.

Fact: As per literature available there have been no case of an increase in bone fractures or other ill effects due to use of fluoride.

Myth: Water fluoridation is bad for babies

Fact: Water fluoridation has been endorsed by the World Health Organization, Australian Medical Association and American Academy of Pediatrics, and poses no known health risks for babies and young children.

Myth: Infant formula contains high levels of fluoride when mixed with fluoridated water

Fact: Recent studies show no link between the use of infant formulas and dental fluorosis. Fluoridated water can be safely used to reconstitute infant formula.

Myth: Community Water fluoridation causes excessive dental fluorosis

Fact The only known side effect of optimal water fluoridation is a slight increase in dental fluorosis levels. Most fluorosis is barely detectable and does not damage the teeth, whereas tooth decay is painful, unsightly and expensive to repair.

Myth: Water fluoridation is mass medication

Fact: The Department of Health does not consider the addition of fluoride to drinking water to be 'mass medication', but simply adjusting the level of a substance already found naturally in the water to provide a substantial public health benefit

Myth: Fluoride doesn't belong in drinking water.

Fact: Fluoride exists naturally in virtually all water supplies and even in various brands of bottled water.

Myth: Much of the fluoride in water is never consumed. And the fluoride that is released into the environment harms fish, wildlife and water quality.

Fact: Various studies have determined that the amount of fluoride released into the environment from water fluoridation is insignificant.

Myth: The FDA has never approved fluoride additives, so there are no standards ensuring the safety and purity of these additives.

Fact: The FDA was not intended to regulate the quality of fluoride in drinking water. The quality and safety of fluoride additives are ensured by Standard 60, a program commissioned by the Environmental Protection Agency (EPA).

Myth: The pharmaceutical-grade fluoride (sodium fluoride) used in dentists' offices is the same kind that is used to fluoridate city drinking water.

Fact: Pharmaceutical-grade fluoride compounds are not appropriate for water fluoridation. The forms of fluoride used to fluoridate municipal water are fluorosilicates – hydrofluorosilicic acid (HFSA) or sodium silicofluoride.

Myth: Fluoridation additives are byproducts of the phosphate fertilizer industry.

Fact: Byproducts are simply materials produced as a result of producing something else – they are not necessarily bad, harmful or waste products. Fluoride additives are valuable byproducts produced as a result of producing phosphate fertilizer. .

Myth: Because of their origins, industrial-grade fluorides are contaminated with heavy metals such as arsenic, lead, mercury, cadmium, barium and radium, which are harmful to humans, animals and the environment.

Fact: It is recognized that heavy metals in certain quantities can be harmful to humans, animals and the environment. However, there are only minute traces of metals in fluoride additives and the levels are well below all current environmental protection standards.

CONCLUSION

Fluorine is an easily available element and present in human body from sources like food, air, soil, supplements and drinking water. In small amount fluoride is good for humans. Excess of fluoride is is not always very beneficial. Fluoride can prevent or reduce dental decay and strengthen bones, it prevents bone fractures in older people but in excess amount it is cause of dental fluorosis, skeletal fluorosis, affects kidneys, brain, thyroid glands and the gastrointestinal gland. Fluoride is purposely added to toothpastes, mouthwash and sometimes. For the betterment of community we should promote the use of fluoride in advisable amount. In the present advanced technology era, with the help of latest information people should understand the benefits as well ill effects of fluoride and it is important that people educate themselves to better separate myth from actual fact for the health of their teeth.

REFERENCES

1. Deswal A, Deswal S. Fluoride: A two edged sword. Association Annual Journal, 2003; 2(1-2): 34-42.
2. Sachan S, Singh A, Prakash J, Awasthi G. Fluoride: A double edged sword. WJPR, 2014; 3(7): 241-254.
3. Roemer R. Water fluoridation: Public health responsibility and the democratic process. American Journal of Public Health, 1965; 55: 1337-1348.
4. <https://dentalsolutionscreatingsmiles.com/the-truth-about-fluoride-facts-vs-myths/>
5. <http://theconversation.com/four-myths-about-water-fluoridation-and-why-theyre-wrong-80669>
6. https://www.health.qld.gov.au/__data/assets/pdf_file/0020/145730/fl_myths.pdf
7. <https://ilikemyteeth.org/wp-content/uploads/2018/07/Fluoride-Myths-Facts.pdf>
8. <https://americanfluoridationsociety.org/wp-content/uploads/2017/05/h-Fluoride-and-the-Environment-PEW-Campaign-for-Dental-Health-2013.pdf>
9. <https://publichealth.nc.gov/oralhealth/library/includes/CWFResources/ilikemyteeth%20-%20Myths%20and%20Facts.pdf>
10. http://www.simcoemuskokahealth.org/docs/default-source/topic-oralhealth/oda_myths_and_facts_of_fluoride
11. <https://www.leg.state.nv.us/Session/79th2017/Exhibits/Assembly/NRAM/ANRAM378J.pdf>