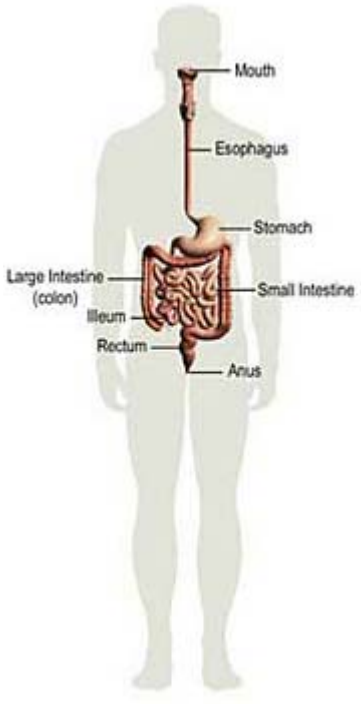
Fluoride and Gastrointestinal Tract



Gastric symptoms from overdose of fluoride usually include:

- nausea
- salvation
- abdominal pain
- vomiting
- diarrhea

http://www.fluoridealert.org/health/gi/index.html

1) Gastrointestinal symptoms (e.g. nausea, abdominal pain, vomiting) are the most common early symptoms of acute fluoride poisoning.

2) Among people hypersensitive to fluoride, gastrointestinal ailments have been produced by 1 mg tablets of fluoride or by consumption of water fluoridated at 1 ppm. (A 1 mg fluoride tablet is more damaging than 1 ppm fluoride in water because a tablet produces a higher fluoride concentration in the stomach.)

3) A review of reports to Poison Control Centers in Utah found that vomiting was induced in children after ingestion of 5 to 9 mg of fluoride. In double-blind experiments, single doses of 6.8 mg of fluoride have induced vomiting, and other gastric symptoms, within 30 minutes.

4) A single ingestion of as little as 3 mg of fluoride, in carefully controlled clinical trials, has been found to produce damage to the gastric mucosa in healthy adult volunteers. No research has yet been conducted to determine the effect of lower doses with repeated exposure.

5) In studies where fluoride has been used (at doses of 18-34 mg/day) as an experimental drug for the treatment of osteoporosis, gastrointestinal disturbances are one of the two main side effects consistently encountered.

6) Among humans suffering from skeletal fluorosis, there is an increased occurrence of gastrointestinal disorders. When fluoride intake is reduced among these patients, the gastrointestinal problems are among the first symptoms to disappear.

Early Symptoms of Acute Fluoride Poisoning - Fluoride & the Gastrointestinal Tract:

"Fluoride has several mechanisms of toxicity. Ingested fluoride initially acts locally on the intestinal mucosa. It can form hydrofluoric acid in the stomach, which leads to GI

irritation or corrosive effects. Following ingestion, the GI tract is the earliest and most commonly affected organ system."
SOURCE: eMedicine.com

"Ingested fluoride is transformed in the stomach to hydrofluoric acid, which has a corrosive effect on the epithelial lining of the gastrointestinal tract. Thirst, abdominal pain, vomiting, and diarrhea are usual symptoms. Hemorrhage in the gastric mucosa, ulceration, erosions, and edema are common signs."
SOURCE: Environmental Protection Agency. (1999). Recognition and Management of Pesticide Poisonings. 5th Edition. (Available online)

"Estimating the incidence of toxic fluoride exposures nationwide also is complicated by the existence of biases. Parents or caregivers may not notice the symptoms associated with mild fluoride toxicity or may attribute them to colic or gastroenteritis, particularly if they did not see the child ingest fluoride. Similarly, because of the nonspecific nature of mild to moderate symptoms, a physician's differential diagnosis is unlikely to include fluoride toxicity without a history of fluoride ingestion."
SOURCE: Shulman JD, Wells LM. (1997). Acute fluoride toxicity from ingesting home-use dental products in children, birth to 6 years of age. Journal of Public Health Dentistry 57: 150-8.

"On 6/10/57 the patient while being kept on a low calcium diet was given a placebo test of 300 cc. of distilled water. It caused no ill effect. On June 12th 2 mg. NaF (0.9 mg. F) in 300 cc. of distilled water was administered. The patient was not aware that the water contained fluoride. She had previously had similar tests (glucose tolerance and urea clearance). Within 20 minutes she developed a generalized urticaria associated with cough and pain in the gastric region followed by marked flatulence in the abdomen. This test was repeated on June 18th, after placing the patient on a high calcium (2 gms.) diet to which 1.3 gms. of calcium lactate had been added. The patient experienced the same symptoms as had occurred subsequent to the above-described test. Urticaria dominated the picture. Since eliminating fluoridated water for drinking and cooking foods all symptoms have subsided."
SOURCE: Waldbott GL. (1958). Allergic Reactions from Fluorides. International Archives of Allergy 12: 347-355.