1. **Feb 23, 2007** (date)
   Dockets Management Branch, Food and Drug Administration, Department of Health and Human Services, Room 1-23, 12420 Parklawn Dr., Rockville, MD 20857.

2. **A. CITIZEN PETITION**
   The undersigned submits this petition under Federal Food, Drug, and Cosmetic Act, the Public Health Service Act, or any other statutory provision for which authority has been delegated to the Commissioner of Food and Drugs (under 21 CFR, Part 5.10) to request the Commissioner of Food and Drugs to make fluoride a prescription drug for use in tooth application, tooth paste, and in bottled water.

   **B. STATEMENT OF GROUNDS**

   Fluoride is used both internally and as an application under the supposition that it poisons tooth cavity bacteria and decreases enamel solubility. However it is only marginally useful for that purpose, decreasing cavities less than 50%. At the same time fluoride adversely affects health. Fluoride interferes with collagen formation, damages the kidneys, causes irreversible bone deformation [Reddy] [Susheela and Mohan], increases bone fractures [Orcel], causes teeth to mottle [Pendrys], causes lower intelligence in children [Lu], has been found to inhibit the immune system’s white blood cell’s ability to destroy pathogens [Weisman], and, synergistically with aluminum, causes nerve degeneration similar to Alzheimers disease. It has been found that behaviors associated with lead neurotoxicity are more frequent in communities using silicofluorides than in comparable localities that do not use these chemicals [Masters]. Rats fed amounts of fluoride similar and also slightly higher to that found in
artificially fluoridated drinking water, suffered from impaired central nervous system functioning and poorer memory. There was more malaise and fatigue and significant alteration of enzyme functioning. Some researchers have concluded that there is a mechanism by which fluoride can contribute to so many neurological problems in children. Thus, links of fluoridated water to decreased intelligence, increased incidence of ADD and ADHD, lower cognitive ability, poorer memory and other related problems, may be correct.

Three studies were done on rats by Varner, all of which showed fluoride to be a significant neurotoxin. This was especially true in the presence of aluminum. What Verner found was that when fluoride with just 1 ppm fluoride, (the amounts used for artificially fluoridated water), was used in the presence of aluminum sulfate (frequently used to improve the appearance of drinking water), the results were disastrous. Aside from brain and kidney damage, there was an eighty percent mortality rate in the animals fed doses of sodium fluoride and aluminum similar to those found in artificially fluoridated water. The original Varner, et al. study was designed to determine whether aluminum and fluoride (AlF₃) in drinking water plays a role in age-related neurological damage similar to Alzheimer’s disease. Although claims of fluoride increasing the uptake of aluminum have been made before, this was the first scientific study designed to look at this specific interaction.

Animals fed the aluminum/fluoride laced water developed sparse hair and abnormal, copper-colored underlying skin which is related to premature aging. Mostly the researchers related these effects to chronic kidney failure. Further autopsy results showed serious kidney abnormalities in animals that drank water containing both sodium fluoride and aluminum fluoride. The Varner team said that “Striking parallels were
seen between aluminum-induced alterations" in cerebral blood vessels that are associated with Alzheimer’s disease and other forms of pre-senile dementia. They concluded that the alterations of the blood vessels may be a primary event triggering neuro-degenerative diseases. [Varner].

Fluoride interferes with the hydroxylation of proline to hydroxyproline. Fluoride exposure disrupts the synthesis of collagen and leads to the breakdown of collagen in bone, tendon, muscle, skin, cartilage, lungs, kidney, trachea and arteries. [Susheela and Sharma] [Sharma] [Susheela and Mukerjee] [Marian Drozdz et al].

Proteins are kept in their three dimensional structure by weak bonds between adjacent proteins called hydrogen bonds. Emsley, et al found that fluoride disrupts this hydrogen bonding within proteins by virtue of an unusually strong bond between fluoride ion and the NH group of amides [Emsley]. In other words, it changes some associated proteins and enzymes from the exact shape they’re suppose to be in.

At the same time there are substances that give far more protection to teeth than fluoride, especially while children are growing, such as vitamin D, copper and magnesium with no adverse effects in reasonable amounts and at the same time they and vitamin D strengthen bone [Holick]. There is also a substance present in cashew nuts [Weber]. and mango fruit, anacardic acid, which is far more lethal to cavity gram positive bacteria than fluoride [Eichbaum]. Fluoride is not more lethal to cavity bacteria than conventional mouth wash [Bibby].
In addition to the above circumstances mildly adversely affecting health ("mildly", that is, if applied properly in minute amounts), fluoride enters the bodies of people in wildly varying amounts. Fluoride is applied largely for the purpose of protecting children. But to expect small children to apply this tooth paste poison correctly without medical instruction, or for that matter even with instruction, is inane. There is also the danger that some parts of the adult population will have more than small intakes. Many municipal water supplies have fluoride added, so that people who must drink large amounts of water, such as people with damaged kidneys, or who do drink large amounts of water because of recommendations of health purists, will receive large amounts. Richmond says that fluorinating water has no perceptible affect on kidneys in children, but that fluoride in water for dialysis should be controlled [Richmond]. Another group at risk are people who eat large amounts of dried food that must be reconstituted with water such as babies and maybe soldiers. All this with no or little reduction of tooth caries from water fluoridation [Seppa].

This increased fluoride intake is also true for people who drink much tea [Gulati], since tea leaves pick up large amounts from some soils, and probably other plants do also [Xie]. Coffee has high amounts of fluoride from insecticides. Fluoride compounds are applied to plants as insecticides. Most of these fluorides end up in the soil, and therefore probably in many plants.

Fluoride is an unessential poisonous mineral so there is no disadvantage to making it difficult to obtain. There is no financial disadvantage because it is added to tooth paste, etc. and so there is no removal cost. It conveys no advantage in color or taste from it. The only problem is
that there might be strong political pressure from vested interests [Bryson].

C. ENVIRONMENTAL IMPACT STATEMENT

Fluoride will eventually end up in the soil in the form of processed sewage, so this is another reason for using this poison sparingly. It will also end up in the soil in massive amounts when city water is used as irrigation, as I have been doing. In the course of a million years the soil will be badly contaminated, probably especially alkaline soil. How fluoride affects will include poisoning the soil’s microorganisms [Dhruva]. It will also probably make aluminum poison more available to the plant [Arnesen].

C. ECONOMIC IMPACT STATEMENT

None required.

D. REFERENCES

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Xie ZM Ye ZH Wong MH 2001 Distribution characteristics of fluoride and aluminum in soil profiles of an abandoned tea plantation and their uptake by six woody species. Environmental International 26; (5-6) 341-346

CERTIFICATION
The undersigned certifies that, to the best knowledge and belief of the undersigned, this petition includes all information and views on which the petition relies, and that it includes representative data and information known to the petitioner which are unfavorable to the petition.

Charles E. Weber (Signature)
Charles E. Weber Name of Petitioner