

TRANSCRIPT: PROFESSIONAL PERSPECTIVES ON WATER FLUORIDATION

Professionals Appearing in the DVD

Earl Baldwin, British House of Lords:

Dr. Arvid Carlsson Nobel Laureate in Medicine:

Dr. Robert Carton, FMR President, EPA Union:

Sir Iain Chalmers, Health Services Researcher:

Dr Paul Connett, Environmental Chemist:

Brent Foster, Oregon Sierra Club:

Dr. William Hirzy, Vice President, EPA Union:

Dr. Vyvyan Howard, Fetal Patho-Toxicologist:

Dr. Robert Isaacson, NRC Panel Member:

Dr. Tim Kropp, Environmental Working Dentist:

Dr. Harvey Limeback, National Research Council Panelist & Dentist:

Dr Phyllis Mullenix, Pharmacologist, Toxicologist:

Dr. Bill Osmunson, Dentist:

Dr. Kathleen Thiesse, Risk Assessment Scientist:

Old Film Track: As a result of fluoridation our children will be healthier and happier.

There is no health hazard that justifies postponing water fluoridation.

Dr Paul Connett, Environmental Chemist: You're not dealing with a benign substance.

There's much too much risk for very little benefit

Old Film track: Fluoride is safe.

Earl Baldwin, British House of Lords: They decided far too early before the science was properly in, that fluoridation was a good thing.

Dr. Harvey Limeback, Environmental Working Dentist: The dental community has no idea of the toxicology behind fluoride.

Dr. Kathleen Thiessen, Risk Assessment Scientist: Fluoride does not just affect your teeth.

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: Fluoride is a neurotoxin

Dr. Tim Kropp, Environmental Working Dentist - so many people throughout the US every day.

Dr. Bill Osmunson, Dentist: So who's responsible? Who's the doctor making sure we're not getting too much

Dr. Vyvyan Howard, Fetal Patho-Toxicologist: The weight of evidence is more about it doing damage than against.

William Hirzy, Vice President, EPA Union: This is against all principles of modern pharmacology. It's really obsolete.

Water fluoridation is the practice of adding fluoride compounds to the public water supply for the purpose of reducing tooth decay.

The policy which began in the United States in the 1940's, has been hailed by the Oral Health Division of the US Centre for Disease Control as one of the top ten public health achievements of the 20th century.

However a growing body of science indicates that fluoridation is neither safe nor effective. In this video we examine why over two thousand health, scientific, medical, dental and environmental professionals are calling for an end to fluoridation worldwide.

FLUORIDATION AND MEDICAL ETHICS

Dr. Bill Osmunson, Dentist: Water fluoridation is a way of dispensing a drug.

Sir Iain Chalmers, Health Services Researcher: Fluoride is a medicine.

Fluoride is being put in specifically to alter you physically. To make a physical change in you.

Brent Foster, Oregon Sierra Club: This is not chlorine. This is not any number of the other chemicals used to treat the water, make the water safe and drinkable.

Sir Iain Chalmers, Health Services Researcher: Not like chlorine used to make the water safe and kill the bugs in the water supply.

Brent Foster, Oregon Sierra Club: This is the only thing anywhere in the world that gets to the drinking supply to actually treat the human, to treat the body.

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: There is absolutely no drug on the market that's given in a one dose fits all situations.

Dr. Arvid Carlsson, Nobel Laureate in Medicine. It's absolutely obsolete. In modern pharmacology it's so clear that even if you have a fixed dose of a drug, different individuals respond very differently to one and the same dose. Now in this case you have it in the water and people are drinking different amounts of water so you have huge variations in the consumption.

Dr. Bill Osmunson, Dentist. You can have an athlete, a labourer who's drinking many, many times as much water. You can have a diabetic whose drinking a ton of water compared to the average.

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: The whole name of the game in toxicology is to give the right dose to the right person at the right time. And that's not what fluoridation does. It can't do it.

Dr. Kathleen Thiessen, Risk Assessment Scientist. I would prefer an individual use of a drug. I would have no problem with a doctor who is then prescribing for a patient that he was keeping in touch with and monitoring for possible side effects and for the efficacy of the drug. That's essentially what's done with any other drug. And that's the way it should be done for fluoride. But we don't put other things in the water to try to keep everybody's blood pressure down or everybody's stroke risk down. And there's no reason we should be trying a 'one size fits all' approach for this either.

Earl Baldwin, British House of Lords: The problem with adding medicine to water is an obvious one of consent. People can't give their informed consent which is a basic of medical ethics.

Dr Paul Connert, Environmental Chemist: We are allowing communities to do to everybody in the community what an individual doctor cannot do to an individual patient and that is prescribe medication regardless of the informed consent of the patient.

Earl Baldwin, British House of Lords: What physician you know, in his right mind, would treat somebody whose medical history he doesn't know, who he's never met, with a substance that's meant to do change in their bodies and just with the advice to have as little or as much as you like but you'll take it for a lifetime because it's meant to help someone else's teeth.

Dr. Bill Osmunson, Dentist: Voters medicate each other whether they like it or not and if 51% of the voters say we're going to medicate everybody in town then they all get medicated.

DO WE NEED FLUORIDE?

Dr. Tim Kropp, Environmental Working Dentist: Fluoride is not an essential element.

Dr. Kathleen Thiessen, Risk Assessment Scientist. There's not a bodily requirement for fluoride.

Earl Baldwin, British House of Lords: Fluoride is not an essential nutrient as far as the UK goes. You look it up in the books to see what our Department of Health says and they say that no essential use has been found for fluoride in the human body. So it is not in the category of vitamins and apart from anything it's miles more toxic than any of the vitamins.

Fluoride is no longer considered an essential factor for human growth and development.

DOES FLUORIDE NEED TO BE SWALLOWED?

Dr. Kathleen Thiessen, Risk Assessment Scientist: Whatever benefit there is from fluoride on teeth is topical rather than systemic.

“[Fluoride’s] actions primarily are topical for both adults and children”

It's been shown that it's really a topical effect principally, rather than a systemic effect.

Dr. Bill Osmunson, Dentist: It's effective topically, not when it's swallowed.

Dr. Robert Carton, FMR President, EPA Union. There's no reason for people to be exposing all their internal organs to fluoride when, if it works, you can do something topically.

Dr William Hirzy, Vice President, EPA Union: If you want to prevent sunburn, you don't drink suntan lotion. You put it on your skin. And so if you want to have the benefits of fluoride in oral health, what you do is put it on the surface of the tooth and not drink it.

Sir Iain Chalmers, Health Services Researcher: The quality of evidence for topical fluoride is in a different league from the evidence on water fluoridation. I mean absolutely no question about that.

Dr. Tim Kropp, Environmental Working Dentist. Adding fluoride to toothpaste, you are going to ingest some of it. And that needs to be taken seriously. But it's not made to be ingested. It's made to be rubbed on to the surface of the tooth which is where you're supposed to have it. It's a much smarter way to go about using fluoride in dentistry.

Old Film Track. As a result of fluoridation our children will be healthier and happier.

Dr. Vyvyan Howard, Fetal Patho-Toxicologist: It's why they accepted the topical application of fluoride to the surface of teeth is beneficial. But I can see absolutely no justification for asking the whole population of a nation to take it systemically, to swallow it, for that benefit because it's available in toothpastes, it's available in dental treatment to the dentist. So I don't think you can justify the fluoridation of drinking water along the lines of a topical treatment of teeth. It's illogical.

Dr. Harvey Limeback, Environmental Working Dentist: One of the recommendations I've made is, because we now know it doesn't need to be swallowed, that the public have to be informed. Again, informed consent. They should be told that it doesn't work by swallowing it.

DO MOST COUNTRIES FLUORIDATE WATER?

Dr. Robert Carton, FMR President, EPA Union: One of the things that the proponents are very careful to stay away from, is to mention how many people don't fluoridate.

Dr. Tim Kropp, Environmental Working Dentist: Most of the western world is not fluoridated. We are definitely in the minority in the fact that we push water fluoridation.

Dr. Bill Osmunson, Dentist:

Many of the countries in the world, the developed countries, no longer fluoridate, never did fluoridate.

Dr Paul Connett, Environmental Chemist: Most European countries do not fluoridate. Austria, Belgium, The Netherlands, France, Germany, Sweden, Norway, Denmark Iceland, Italy, Greece, Portugal. The overwhelming [majority of] countries in the world do not fluoridate and guess what? The teeth are just as good, if not better, than ours.

Is there less tooth decay in fluoridated countries?

Sir Iain Chalmers, Health Services Researcher: One of the most striking things I suppose, was to look at trends in tooth decay over time in various countries.

Earl Baldwin, British House of Lords: The comparison between fluoridated countries like America and unfluoridated ones like most of Europe and indeed most of the world are very interesting.

Dr Paul Connett: Environmental Chemist. If you look at the World Health Organization data base for 12 year olds, the tooth decay has been coming down as rapidly in these non fluoridated countries, as it's been coming down in the United States and other fluoridated countries.

Dr. Tim Kropp: Environmental Working Dentist. Countries which don't fluoridate have seen the same decrease in tooth decay that we have seen over the same time span.

Sir Iain Chalmers: Health Services Researcher. If you ask someone to pick out the lines [on the graph] which are in countries that are fluoridated and countries that aren't fluoridated, actually you can't pick them out. So I found that very surprising against the background as I say of having being a default fluoridationist.

HOW MUCH FLUORIDE ARE WE INGESTING?

Brent Foster, Oregon Sierra Club. What you really need to look at and what matters in the end, is what's your total body load?

Dr. Tim Kropp, Environmental Working Dentist: Some people are getting a lot of different fluoride from a lot of different sources.

Dr. Bill Osmunson, Dentist: We've had a tremendous increase in fluoride from many sources. Water is one source. When we drink that water, when it's made into soda pops, when it's made into beverages, when it's made into soups, when it's made into other products, we get fluoride from that source also.

Dr. Tim Kropp, Environmental Working Dentist: And we also have a lot of pesticides that have come on the market, that leave fluoride residues on fruit and vegetables.

Brent Foster, Oregon Sierra Club: Fluoride is a very common component in pesticides. So, you know if you drink a glass of grape juice that's non organic grape juice and it's got skins on it you're going to get a very high level of fluoride just from your grape juice.

Dr. Tim Kropp, Environmental Working Dentist: And you're also getting it from toothpaste. Children swallow quite a bit of toothpaste. Even if they're told not to swallow it, it just happens by accident. They don't rinse as well and sometimes they don't have a good swallowing action and therefore they're getting a lot of fluoride from that.

“Virtually all authors have noted that some children could ingest more fluoride from [toothpaste] alone than is recommended as a total daily intake of fluoride ingestion”

Journal of Public Health Dentistry

Dr. Bill Osmunson, Dentist: So who's monitoring this exposure? When are we getting too much? No one's monitoring it. Nobody's looking at the total exposure to ensure that we're not getting too much and certain sub groups are not getting too much.

Brent Foster, Oregon Sierra Club. The reality is we need to reduce our fluoride intake.

ARE KIDS BEING OVERDOSED?

Dr Paul Connett, Environmental Chemist: In 2005, the Centre for Disease Control admitted that 32% of our children in the United States including children in non-fluoridated areas have dental fluorosis.

Dr. Kathleen Thiessen, Risk Assessment Scientist: About a third of the children in this country have some form of dental fluorosis meaning that they had too much fluoride exposure during their early childhood.

Dr. Bill Osmunson, Dentist: Dental fluorosis is damage to the tooth because of too much fluoride exposure. We've swallowed too much fluoride and it shows up as white spots or brown spots on the teeth.

Dr. Harvey Limeback, Environmental Working Dentist: You see these white spots or splotches or lines or in more severe fluorosis you actually see the surface layers flaking off, you see brown spots

And in severe cases there's actual chipping, pitting and erosion of the tooth.

Dr Paul Connett, Environmental Chemist: Dental fluorosis is a bio marker your child has been over exposed to fluoride during the development of their teeth.

Dr. Harvey Limeback, Environmental Working Dentist: We now believe that there is several mechanisms involved. Fluoride could be inhibiting the enzymes the seroproteanases that are degrading the final traces of proteins that are left behind in the teeth.

Dr. Kathleen Thiessen, Risk Assessment Scientist: The mechanisms have something to do with the enamel forming proteins or inhibition of some enzymes during that critical period.

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: To do that - impacting the enamel cells of the teeth - means that it can also impact cells elsewhere in the body.

Dr Paul Connett, Environmental Chemist: The promoters have always had this faith that you could damage the growing tooth enamel, the enzymes, the G proteins or however that happens without damaging any other tissue in the body at the same time and I think that's very unlikely.

Dr. William Hirzy, Vice President, EPA Union: Not only is it a threat - what's happening in the teeth is very likely happening in the bones as well because you have a similar type of structure as epoxy hepatite neural structure in the bone and the tooth.

Dr. Tim Kropp, Environmental Working Dentist: Your teeth are sort of a window into your bone, a window into your scalp?

Dr. William Hirzy, Vice President, EPA Union: So if there are these adverse effects going on in your teeth there are very likely to be adverse effects going on in the bone

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: It's a sign of toxicity. It's not just to be taken or dismissed as merely a cosmetic effect.

DOES FLUORIDE HAVE SIDE EFFECTS?

Dr Paul Connert, Environmental Chemist: This whole debate has been captured for over fifty years by the dental lobby. By dentists whose preoccupation is teeth. Well, teeth are not the only issue in the body.

Dr. Bill Osmunson, Dentist: As dentists we diagnose pathology of the mouth, diseases of the mouth and tend to disregard or not involve ourselves with diseases of the rest of the body because it's not within our purview; it's not within our licence to diagnose other parts of the body.

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: Most definitely the dental community has a monopoly if you will, on the study of fluoride and they have absolutely used tunnel vision to look at fluoride as a dental concern. However it is not just a dental concern. It's a toxicity concern.

Dr. Bill Osmunson, Dentist: National Research Council has a research report which just came out in 2006 which is one of the best sources of finding out what fluoride is doing to the rest of the body.

Dr. Robert Isaacson, NRC Panel Member: One of the most interesting things in the report is the diversity of the number of organs that are being affected by the fluoride beyond either the teeth or the bones.

Dr. Kathleen Thiessen, Risk Assessment Scientist: We do need to get away from looking only at fluoride in connection with teeth. We need to be considering its effect on a whole bunch of other systems in the body, on people's general health in a whole lot of respects.

SHOULD INFANTS DRINK FLUORIDATED WATER?

Dr. Robert Carton, FMR President, EPA Union: I think the ADA's recent statement forewarning against adding fluoridated water to baby formula is I think a watershed decision.

Dr Paul Connert, Environmental Chemist: The American Dental Association has finally done what it should have done years ago and that is to tell parents not to use fluoridated tap water to make up baby formula.

Dr. Bill Osmunson, Dentist: The dental association recommends that we not have fluoridated water be used for making infant formula or for infants to drink.

Dr Paul Connert, Environmental Chemist: One of the messages that I think is extraordinary in this issue is that the level of fluoride in mother's milk is so extremely low. It's .004 parts per million which is 250 times less than we put in drinking water.

Dr. Bill Osmunson, Dentist: There've been a couple of men who've said well maybe mothers' milk is flawed but most scientists don't go that route. They say that mothers' milk seems to be the best we have the best we know of, so if it's low in fluoride maybe that's what we should have for infants is low fluoride.

Dr. Vyvyan Howard, Fetal Patho-Toxicologist: Nature has devised a system for keeping fluoride away from the infant and we're circumventing that by putting fluoride into drinking water and I think there are consequences.

Dr Paul Connert, Environmental Chemist: I think parents should know that fluoride is an extremely active chemical when it gets into our body. It can interfere with the pineal gland. It can interfere with the thyroid gland. The thyroid gland and the pineal gland are both intimately involved with brain development, mental development.

Dr. William Hirzy, Vice President, EPA Union: A real concern with young kids especially with new born infants is that the blood brain barrier's not fully developed at that point and when children are drinking a formula made with fluoridated drinking water they're getting a huge inappropriate dose of fluoride in the developing brain. This may be part of the reason for instance of the depression of IQ that we've seen in these Chinese studies.

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: You do not want to create a fluoride exposure during a period of brain vulnerability.

Dr Paul Connett, Environmental Chemist: All of these things are indicators, serious indicators that you shouldn't expose young babies to fluoride and of course that's what exactly happens when you put fluoride in the water.

Brent Foster, Oregon Sierra Club: How are low income kids or low income families supposed to avoid giving their kids fluoridated water?

Dr Phyllis Mullenix, Pharmacologist, Toxicologist; They can't afford to avoid it. They can't avoid to seek sources of drinking water that has no fluoride in it.

Dr. Kathleen Thiessen, Risk Assessment Scientist: They think that the low income communities could be a high risk for adverse effects from fluoride exposure from water fluoridation.

FLUORIDE AND THE BRAIN

Dr. Robert Isaacson, NRC Panel Member: As far as I can see there is no doubt that that the intake of fluoridated water is going to interrupt basic functions of nerve cells in the brain.

Dr. Kathleen Thiessen, Risk Assessment Scientist: The RAS committee did review the available information on fluoride effects on the brain, on neurological function and we concluded that there does seem to be evidence for some effects. There needs to be more study in several areas. There certainly seem to be effects on the developing brain but there may also be effects on the brain in older individuals as well.

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: The research on the brain since our study was published has absolutely confirmed what we predicted and what we recorded in 1995.

Dr Paul Connett, Environmental Chemist: There are now thirty animal studies which indicate that fluoride could damage the brain and this comes on top on a number of studies from China which indicates that fluoride lowers IQ in children.

Dr. Vyvyan Howard, Fetal Patho-Toxicologist: I mean there's lots of epidemiological evidence now that for example it might affect the intelligence of the child, coming out of China and that's been reviewed by the national Academy of Sciences. They say that you can't be absolutely certain about it but it's quite a strong indication they need further research.

Dr Paul Connett, Environmental Chemist: In my view fluoride today, as far as intelligence and the brain is concerned, is where lead was in the early seventies. In the early seventies scientists knew that high levels of lead could cause brain damage in children and other health effects. But they felt that subclinical levels of lead were OK. I think the same thing is happening now with fluoride. That it's only a function of getting more and more sensitive tests to show that even lower levels of fluoride can cause lowering of IQ and other subtle effects.

Dr. Vyvyan Howard, Fetal Patho-Toxicologist: And while these bits of further research are going on to elucidate what the absolute truth is, we should be taking a more precautionary stance and saying OK for the time being we don't fluoridate.

FLUORIDE AND THE THYROID GLAND

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: A concern about fluoride and effect on the thyroid is multiple.

Dr. William Hirzy, Vice President, EPA Union: Fluoride was used to suppress hyper active thyroid especially in Europe back in the 1940s and 50s and the doses that were used to suppress thyroid activity are in the range people are getting in the US from this vast over exposure to fluoride.

Dr. Kathleen Thiessen, Risk Assessment Scientist: There is a consistent body of literature that indicates that thyroid exposure does reduce thyroid function in humans and experimental

animals. And that the exposure in humans associated with these effects, are in the range of exposures that are expected with people who drink fluoridated water.

Dr. Robert Isaacson, NRC Panel Member: A large percentage of the population in the United States does have some problem with the thyroid gland.

Dr. William Hirzy, Vice President, EPA Union: The large number of people whose hypothyroid – under active thyroid - now may very well be related to the fact that there's so much fluoride in the environment.

Dr. Robert Isaacson, NRC Panel Member: The ingestion of fluoride does affect the actions of the thyroid gland

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: A hyperthyroid individual should definitely be concerned about drinking fluoridated water because it would take a very serious clinical condition and it could make it even worse.

Dr. Kathleen Thiessen, Risk Assessment Scientist: The effects of hypothyroidism, even probably borderline hypothyroidism are things like depression, lethargy, when a person just doesn't feel like getting up and doing anything. There are obviously a lot of things that can cause that but low thyroid function is among them and low thyroid function is a contributor to depression in perhaps many people.

Several lines of information indicate fluoride does have an effect on the thyroid gland.

FLUORIDE AND BONE STRENGTH

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: We have several studies as a matter of fact in the United States that have shown that fluoride can increase bone fracture rates.

Dr. William Hirzy, Vice President, EPA Union: A number of studies in prestigious journals such as the Journal of the American Medical Association that show increased risk of bone fracture based on the amount of fluoride a person consumes, in consuming it in the level that people get from fluoridated drinking water.

Dr. Harvey Limeback, Environmental Working Dentist: We do know from animal studies that the strength of the bone actually starts to decline, the more fluoride you have in the bone. The fluoride makes the bone more brittle.

Dr. Kathleen Thiessen, Risk Assessment Scientist: A sufficient accumulation of fluoride in the bone seems to make them weaker. It makes them more dense on X ray film but this is associated with a more brittle structure.

Dr. Harvey Limeback, Environmental Working Dentist: Of course we're concerned with hip fractures because that's a huge cost to the health care system.

Dr. Kathleen Thiessen, Risk Assessment Scientist: Hip fractures in the elderly in all too many cases means that that person is not going to walk again or will even die.

FLUORIDE AND ARTHRITIS

Dr. Harvey Limeback, Environmental Working Dentist: It's well known in the endemic fluorosis areas that the first sign of skeletal fluorosis is aching joints.

Dr. Kathleen Thiessen, Risk Assessment Scientist: The early (symptoms) of skeletal fluorosis are associated with bone and joint pain.

Dr. Robert Isaacson, NRC Panel Member: Fluoride causes symptoms identical to arthritis.

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: You cannot distinguish the fluorosis or early fluoride poisoning from rheumatoid or osteoarthritis. It's very much the same.

Dr. Harvey Limeback, Environmental Working Dentist: Nobody to my knowledge has yet looked carefully at fluoridated cities or fluoridated populations and looked at the symptoms or arthritis to determine whether or not fluoride is contributing to this endemic or possibly epidemic of arthritis that we have in North America.

Dr Paul Connert, Environmental Chemist: I think there's every reason to be concerned that today fluoride is one of the factors contributing to the epidemic of arthritis in this country. According to the CDC one in three Americans have some form of arthritis. That's 68 million Americans.

Dr. Kathleen Thiessen, Risk Assessment Scientist: Supposedly the fluoride exposures in this country are not usually high enough to get to skeletal fluorosis. But again that's an area that's not been studied too well. I think it's likely – it's not a given – but I think it's likely that a lot of early stage skeletal fluorosis does show up as joint and bone pain but it's never recognised as being skeletal fluorosis.

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: If I was an arthritic individual, I would be eliminating every possible source of fluoride exposure that I could think of.

Early cases of rheumatoid arthritis may be fluorosis

WHERE DO THE FLUORIDE CHEMICALS COME FROM?

Dr Paul Connett, Environmental Chemist: If you ask most dentists, ask them what they're putting in the water, most dentists would say sodium fluoride. Pharmaceutical sodium fluoride. The same stuff that is in toothpaste

Dr. Robert Isaacson, NRC Panel Member: They have absolutely no idea that in nine out of ten cases it's hydrofluorosilicic acid and hydrofluorosilicic acid is a waste phosphate for the phosphate industry.

Dr Paul Connett, Environmental Chemist: This has come about because for maybe a hundred years, the phosphate industry put out two very very poisonous gases into the environment – hydrogen fluoride and silicon-tetrafluoride. Eventually they were required to capture those and they did it with a wet spray – water – and that water converts these two very toxic gases into hexafluorosilicic acid. And it's this scrubbing liquor that is about 25% strong that's put into tanker trucks, driven around the country and added to our drinking water.

Dr. William Hirzy, Vice President, EPA Union: If this stuff blows out the stack it's an air pollutant, if goes directly into the water supply if they take that scrubber liquor and dump it into the local river it's a water pollutant, but if they put it into a tank wagon and sell it to someone, a water authority, like magic, it's not a pollutant and they can take that then to your drinking water supply, not discharge it into the river they discharge it directly into your drinking water supply. Slowly bleed it in and it's magic! It's no longer a toxic pollutant. It's now able to be called a product.

Dr. Robert Carton, FMR President, EPA Union: It's never purified. It's not a pharmaceutical grade compound. It's a mixture of whatever collects in the stack gases. It contains lots of contaminants, a lot of heavy metals.

Brent Foster, Oregon Sierra Club: When you're talking about adding fluoride to drinking water, you're not just talking about adding fluoridation chemicals. You're talking about adding all of the industrial waste byproducts that come along with it. In Oregon where we've got 135 communities that already exceed the drinking water standards for arsenic, the idea of adding any more arsenic to drinking water, even if it's a small amount doesn't make a lot of sense.

Brent Foster, Oregon Sierra Club: When you're talking about adding fluoride to drinking I find very few people who with an open mind read through the science, understand the significance of the questions and the direction that all of the new science is pointing in terms of the risks of fluoride who still go on to say we ought to put this in everyone's drinking water.

Dr Phyllis Mullenix, Pharmacologist, Toxicologist: We have better ways of improving dental health today than using fluoridation. And let's be sensible about it.

Dr. Tim Kropp, Environmental Working Dentist: It doesn't work systemically. It works topically.

Dr Paul Connett, Environmental Chemist: It's unethical it's unnecessary, it's dangerous.

Dr. Arvid Carlsson, Nobel Laureate in Medicine: I mean this is so obvious. It's really very far fetched. You have the toothpaste which are available for you. Why drink the stuff?