FLUORIDE AND KIDNEYS

FLUORIDATION  OF COMMUNITY WATER/KIDNEY DISEASE  
http://ndt.oxfordjournals.org/cgi/content/full/gfm663v1

FLUORIDE KIDNEY  Fluoride & the Kidneys  
http://www.fluoridealert.org/health/kidney/

FLUORIDE & RENAL OSTEODYSTROPHY  
http://www.fluoridealert.org/health/bone/fluorosis/renal-osteodystrophy.html

A Bibliography of Scientific Literature on Fluoride (includes Fluoride & the Kidneys)  
http://www.slweb.org/bibliography.html

FLUORIDE & ALUMINIUM  IN YOUR WATER  Brain & Kidney Damage  
http://www.frequencyrising.com/water_filters_fluoride_aluminum.html


Brief extract from PULP SCIENCE: When does a scientist become a science fiction writer?  by George Glasser and Jane Jones

2001  The competition by aluminum for fluoride was starkly and repeatedly revealed in three studies by Varner, et al, showing that the action of fluoroaluminum in water results in presenile and kidney damage in laboratory animals.
It was observed that the animals who drank the aluminum/fluoride-laced water developed sparse hair and abnormal, copper-coloured underlying skin which is related to premature aging. 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 presenile dementia. They concluded that the alterations of the blood vessels may be a primary event triggering neurodegenerative diseases.

http://fluoridationfacts.com/ausfnews/mayjun01/pulp_science.htm

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An outbreak of fatal fluoride intoxication in a long-term hemodialysis unit.

Because deionization systems are used widely in hemodialysis and can cause fatal fluoride intoxication, careful design and monitoring are essential.


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High fluoride exposure in hemodialysis patients.

We conclude that the different concentrations of fluoride in our dialysis fluids account for the differences in the plasma fluoride concentrations between our dialysis groups. Since many HD units rely on RO systems to purify fluoridated tap water, it is likely that many HD patients are being exposed inadvertently to increased concentrations of fluoride.


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Excerpt from:


KIDNEYS (p. 153-154)

One of the most striking features in the early stage of fluorosis is the craving for fluids, accompanied by excess production of urine. Indeed, the more water the patient drinks the thirstier
he or she becomes. (26) Polyuric nephropathy (a kidney disease characterized by excess urination) has been established as a major manifestation of fluoride toxicity in its early stage. (27) This fact and the important role of the kidneys in the elimination of fluoride from the body have led to extensive studies of the action of fluoride on kidneys.

**Experimental Data.** For instance, the presence of 500 ppm of sodium fluoride in the diet of rats for 21 to 28 days produced damage to the kidney tubules which regulate homeostasis (the equilibrium of ions) in the blood. (28) Similar levels of fluoride intake resulted in impaired kidney function and accounted for retention of non-protein nitrogen and of creatinine in the blood. (29) Such high intakes of fluoride also affect the glomeruli, the filtering units of the kidneys. (30) Fluoride in amounts of 2 to 7.5 mg given daily to rats for 18 to 48 weeks induced excessive thirst, frequent urination, and increased elimination of nitrogen through the urine. It also lowered the kidney threshold for sugar. Histologic examination showed vascular, glomerular, and tubular degeneration leading finally to interstitial fibrosis. (31)

In contrast to these short-term, relatively large-dose experiments, three Cornell University scientists more closely approached conditions of fluoridation by giving 0, 1, 5, and 10 ppm of fluoride in drinking water to 86 albino rats throughout 520 days or their approximate lifetime. (32) In these prolonged experiments with small amounts of fluoride corresponding to the daily human intake from fluoridated water, they found changes in the tubules which were similar to those from larger doses in short-term experiments; the kidneys of the control rats drinking nonfluoridated water remained normal. In a follow-up study, the same abnormalities were observed, but this time the authors concluded that the changes were due to "old age." (33,34) Such a difference in interpretation of the same results could have been easily resolved had the affected kidneys been analyzed for their fluoride content and compared with those of the control animals. Since no analyses were made, these studies did not rule out the possibility that consuming fluoridated water at the 1 ppm concentration throughout a person's lifetime can damage the kidneys. In fact, electron microscopic examination of the kidneys of monkeys drinking fluoridated water at a concentration of 1 and 5 ppm for 18 months reveals definite cytochemical abnormalities compared to controls on fluoride-free water. (19)

**Observations on Humans.** Related observations are also available on humans with skeletal fluorosis, where kidney disease is not uncommon. In persons drinking water containing 5 to 16.2 ppm fluoride (about 7 to 25 mg per day), kidney function was impaired, as indicated by depressed clearance of urea, lowered rate of filtration, and enhanced elimination of amino acids-products of protein metabolism. (35-37)

Unfortunately, it can rarely be determined whether a coexisting kidney dysfunction is actually the result of long-term fluoride intake or whether, on the other hand, the skeletal changes are precipitated by excessive fluoride storage in the body, because of a pre-existing kidney disorder.

References


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FLUORIDATED KIDNEYS - Golda Starr
http://fluoridedetective.com/kidneys/

FLUORIDATION HARMS KIDNEY PATIENT
http://fluoridedangers.blogspot.com/2005/12/fluoridation-harms-kidney-
_113573563709985824.html

TOXIC EFFECTS OF FLUORIDE ON KIDNEY FUNCTION
AND HISTOLOGICAL STRUCTURE IN YOUNG PIGS
Research report Toxic effects of F on kidney function and histology in young pigs  Fluoride 39(1)22–26

Chronic renal failure in NCP and arsenic: Science versus myth
By Prof. Oliver A. Ileperuma

The media recently highlighted the claims by a group of Kelaniya University scientists and others that arsenic in pesticides was the factor responsible for chronic renal failure or chronic kidney disease of unknown origin (CKDU) in the North-Central Province. This disease was first detected by Dr. Tilak Abeyesekera, Consultant Nephrologist who was at that time working at the Anuradhapura general hospital.
Soon there were many media reports highlighting this issue and in February, 2003, the Water Board took the initiative to get stakeholders including scientists to discuss the problem. At that time it was thought that this was an environmental related disease due to some toxic compounds in drinking water. This writer along with Dr. Dharmagunawardane, a geologist was given the task of investigating any possible geo-environmental causes. This initiated a collaborative research programme with medical personnel involved.

We visited the affected villages with the medical team comprising Dr. Tilak Abeyesekera and Dr. Nimmi Athureliye where positive CKDU patients were identified. Our team then visited the people so identified to observe their lifestyles including the water they drank, the food they ate and the utensils used for cooking and storing water. In less than six months we were able to identify one environmental factor which could be the most significant one involved in this disease. The geographic distribution of the disease closely paralleled the fluoride levels of drinking water. Almost all patients who reported to the Anuradhapura hospital with this disease came from high fluoride areas. As early as 2004, I put forward the hypothesis that fluoride in drinking water was the most likely reason for the prevalence of this disease.

Role of fluoride
A chance observation during the examination of the water storage pots and cooking utensils showed they developed holes in them after prolonged use. Chemically this is a well-known fact where aluminium dissolves forming fluoro complexes under high fluoride stress compared to low fluoride water in the wet zone. What is worse is that these holes are often sealed with lead solder and lead is known to be toxic to the kidney. These complexes are easily absorbed by the body and once inside the body, excessive fluoride is released into the different organs.

In experiments conducted in the USA on rats, it was found that the presence of fluoride as low as 1 part per million (ppm) in aluminium resulted in the death of the animals and the postmortem examinations revealed that the rats died due to kidney failure. Fluoride in excessive amounts is particularly toxic to the kidney and hence it is a reasonable theory to explain the occurrence of the disease. The type of aluminium pots used were of inferior quality and are made by melting scrap aluminum and usually contains other heavy metals as impurities such as lead, chromium and nickel. Good quality aluminium
cooking pots are anodized and this gives a protective layer of aluminium oxide to the pot while these inferior quality pots are not anodized.

All these heavy metals are toxic to the kidney since they are finally filtered by the kidney before they are excreted. Furthermore, the use of sub-standard aluminium pots results in enhancing the fluoride intake since each Al can carry six fluoride ions into the body when it forms aluminofluoro complexes and they have the special ability to travel through biological membranes.

The use of aluminium pots came into practice only in the past two decades. Clay pots used earlier have the ability to absorb fluoride present in water and this explains why the disease was noted only in the last decade. Generally it requires at least 10-15 years of continuous exposure for this type of chronic poisoning to occur and damage the kidney.

There are some areas such as the Hambantota district where there is high fluoride but the salinity of such waters is so high that people generally do not consume such water. Instead they resort to streams, rivers or wells located near these waterways to supply their drinking water. Similarly, although Ampara has some areas of high fluoride containing wells, most people live close to the irrigation canals of the Senanayake samudra and all these have low levels of fluoride. Unlike the Anuradhapura district Ampara is a relatively recently colonized area and there are only a few “purana” villages away from the main irrigation canals.

We were able to establish the role of fluoride owing to the financial support given by the Water Board. We did not receive any funding from the Rs. 400 million committed by the World Bank. This is a problem which needs an interdisciplinary approach where scientists and health professionals have to work in close collaboration. A similar chronic kidney disease in the Balkan states in Eastern Europe is still under investigation. Chemists from the US Geological Survey have worked on this and their work has established the role of polyaromatic compounds leaching out of lignitic rocks which is now generally accepted as the causative factor. My fluoride theory has to be further substantiated by other researchers so that the root causes of this disease can be established. Most scientists and doctors were sceptical about this theory at first but now the link between fluoride and CKDU is generally accepted. Of course there may be other additional factors involved which can be investigated through co-operation with the health sector.

Role of Cadmium
In 2007, some scientists reported that the rice, fish and some vegetables people consume in these areas were contaminated with high levels of cadmium and this was the causative factor for CKDU. However, no other research group has been able to duplicate these high values of cadmium and more recently cadmium analysis carried out in reputed laboratories in Europe and Japan have failed to confirm such high levels of cadmium. My argument is, if indeed cadmium is the causative factor, why is CKDU not prevalent in other rice growing areas such as the Eastern Province, Uda-Walawe and Hambantota. What is even more interesting is that people in Anuradhapura town and those living close to the Padaviya tank are not affected. This supports my hypothesis since these tank waters and even the wells situated close to large tanks have low fluoride levels.

All those afflicted with CKDU have consumed high fluoride sometimes as high as 7 parts per million (ppm). The World Health Organization's standard for fluoride in drinking
water is 1 ppm which assumes that on the average, a person consumes one litre of water a day. Thus, the total intake of fluoride into the body should not exceed 1 milligramme per day. This is not a suitable standard for tropical countries such as ours where people drink several litres of water while working under the hot sun resulting in dangerously high levels of fluoride uptake. For example, if a person drinks four litres of water a day (including tea) from water containing 2.5 ppm of fluoride, then the total intake is 10 mg which is ten times the desirable level! During the use of aluminium pots this can be further amplified by a factor of up to a maximum of 6, thereby enhancing the fluoride intake to extremely toxic levels. This also explains why men are more prone to this disease since they are the ones who work in the paddy fields consuming large quantities of water. There are some unconfirmed reports that Hitler planned to poison the water supplies of some European countries with excessive fluoride in his war plan. Drinking tea also adds to the fluoride intake since tea contains a considerable amount of fluoride. This too gets exacerbated if poor quality aluminium utensils are used for tea preparation.

**Arsenic and its role**

The latest discovery is that arsenic in pesticides combined with the hardness in water which results in calcium arsenate is the causative factor. This contradicts the well-known chemistry of arsenic since lime is sometimes even added to remove dissolved arsenic from waste water as it is insoluble calcium arsenate. What is more potent is soluble arsenic and this theory does not explain why the insoluble form is more toxic than the soluble form. For example, people in Anuradhapura town may be getting loads of arsenic from the tank water which gets contaminated with these pesticides. Also, it does not explain why this disease is not found in other hard water areas such as Dambulla, Jaffna and Matale districts where there is extensive use of pesticides. Calcium arsenate was extensively used in a lot of countries as a pesticide prior to the 1970's and its main health effects on humans do not tally with those symptoms found in the CKDU patients here.

This arsenic hypothesis cannot explain why this disease is not found in other agricultural areas of the country where pesticide use is widespread. More importantly, this cannot explain why people in Anuradhapura town or Padaviya town are not affected by this disease. Do they eat only imported rice? This was similar to the cadmium theory when it was claimed that people in the town eat sea fish and not tilapia. It is inconceivable as a theory because it cannot explain simple scientific facts. According to the doctors at both the Kandy Nephrology Unit and the Anuradhapura hospital, no clinical symptoms of arsenic poisoning have been observed in any of the patients numbering over 300, they have treated at these two hospitals.

Arsenic poisoning is common in Bangladesh where people show clinical symptoms such as skin lesions, pigmentation, etc. There is no independent confirmation of this hypothesis and also no clear details of their analytical techniques are given. Reporting arsenic levels at the parts per billion range (ppb) requires extremely careful instrumentation, supervision of the experiments by a trained analytical chemist and eliminating interferences. This needs a sophisticated atomic absorption spectrophotometer with a hydride generation apparatus to detect such low levels of arsenic. It is not clear whether the Kelaniya University’s hydride generator was indeed used during this analysis.

Prof. Janitha Liyanage who has experience with this instrument has refuted these claims in one of her articles to the newspapers. Very recently, the Minister of Agriculture explained that out of the 60 samples of rice analyzed at the Industrial Technology Institute, none were found to contain arsenic. Similarly out of the 16 pesticide
formulations analysed, except for two, none had detectable levels of arsenic. These two samples too had quite low levels of arsenic probably originating from the dolomite used in their formulations. Even if traces of arsenic are found, they are excreted by the body causing no harm and only prolonged exposure to relatively higher concentrations can cause arsenic poisoning.

Giving wide publicity that arsenic has invaded all our agricultural products can create unnecessary fear amongst people who consume our rice and vegetables. A more serious problem would be that now exporters of fresh produce from Sri Lanka will have to test each batch of produce to confirm that they are free from arsenic to satisfy their buyers abroad. This is costly and only a few laboratories are available to produce such reports. Therefore, this will create a multitude of problems for our export sector which is unwarranted. Also discontinued application of pesticides may seriously affect our agricultural productivity.

The role of arsenic has to be tested by other laboratories and it is not just enough to analyse rice samples from the affected areas. Those scientists involved in proposing the arsenic theory should get together with the other scientists and commence a healthy discussion on the validity of their proposition. To claim that they have discovered the cause of the Rajarata disease without general acceptance can only result in similar fracas like that of the cadmium theory. They should take the proactive step to get their result independently verified by reputed laboratories with ISO certification to carry out such analysis such as the ITI, Government Analyst's Department, other Universities and the Institute of Fundamental Studies where appropriate instrumentation is available. Then only can they be confident of stating their results with confidence. The media also has a role to play by first verifying facts with other researchers who have worked on this problem for the past eight years so that giving a wrong message to the general public can be averted.

The writer is attached to the University of Peradeniya

Source: [http://sundaytimes.lk/110731/Plus/plus_11.html](http://sundaytimes.lk/110731/Plus/plus_11.html)

In this regard I shall include the item directly hereunder, to show as well as the fluorosilicic acid/silicofluorides there are co-contaminants of lead, mercury, arsenic, cadmium et al :-

Raw Fluoridation Chemical Analyses - Freedom of Information - South Australia Water Corp.

Raw fluoridation chemical analyses of South Australia's drinking water, listed below. This data has been scanned from original documents provided to Sapphire Eyes Productions by Dr. Andrew Harms and Ann Bressington. These documents show the toxic, heavy metal contaminants contained in the chemicals used to fluoridate your drinking water. These include lead, arsenic, mercury, uranium, and more. 'FIRE WATER' FILM SOURCE: [http://tiny.cc/9oj4g](http://tiny.cc/9oj4g)

Source: [http://sapphireeyesproductions.blogspot.com/](http://sapphireeyesproductions.blogspot.com/)
Check out this article I wrote for a web page. The part I’d like you to read is under the subsection: Why Doctors are Clueless on Fluoride.
There are several articles cited dealing with kidney damage caused by fluoride, esp the one by Xiong X, et al.

I was also reading recently about the HUGE business that kidney dialysis is - Fortune 500 type of huge business. Try checking out Anya Martin's article in the Wall Street Journal on this:
"Dialysis treatment costs Medicare almost $72,000 per patient per year; total outlays for patients in kidney failure were $23 billion in 2006, 6.4% of Medicare's total budget. Overall chronic kidney disease and its complications account for over $49 billion, or about 25%, of all annual Medicare expenditures."

"Dialysis also is big business. The vast majority of dialysis centers are for-profit, and DaVita Inc. (DVA 87.65, +0.70, +0.81%), the nation's largest provider with 1,400 centers, ranks No. 433 on the 2009 Fortune 500 list with reported 2008 revenues of $5.7 billion and profits of $374.2 million."

Disturbed yet?

"So is fluoride part of an end stage downward spiral?" My opinion is a resounding YES. Though I have not seen that in writing stated in explicit terms. Both nephrologists told me that there was nothing they could do for me at that time - but when my functioning decreased further and I needed kidney dialysis, they could help. Nothing. Well, reduce protein intake. That made no sense though since my protein levels were LOW. The answer to this question arises through deductive reasoning after reading tons of studies. That's what I think. No one could come out and say that in just so many words - well maybe a researcher in another country could do so - a country without fluoridated water.

Regarding "Is there less kidney disease and less kidney dialysis done in non-fluoridated areas?" See the links in my article. They have research data. The following links are anecdotal articles regarding the high fluoride water in India and it's consequences. I have more similar links to articles discussing kidney problems in India from their naturally fluoridated water if you're interested.
http://www.soschildrensvillages.org.uk/charity-news/the-dangers-of-contaminated-water-in-pakistan
"In 1999, EPA convened a group of experts to carefully consider the results of the Varner et al. (1998) study," USEPA spokesman, Charles Fox wrote in a September 5, 2000 letter to US Congressman Ken Calvert, Chairman, House Subcommittee on Energy and the Environment. Fox continued, "As a result of that conference, EPA has requested that the National Toxicology Program consider the possibility of conducting additional studies of the neurotoxicity of aluminum that include verification of the results observed in the Varner et al. Study."

Fox carefully avoided mentioning the fact that the reviewed study he cited was replicated in two previous studies by Dr. Julie Varner. All three studies found that aluminum-fluoride interactions are associated with brain and kidney damage in laboratory animals. Aside from brain and kidney damage, there was an 80% mortality rate in the animals fed doses of sodium fluoride and aluminum similar to those found in artificially fluoridated drinking water.

Alum (aluminum sulfate) is most frequently used by water companies to improve the appearance of drinking water, to make it clear. For many years, aluminum has been known to be neurotoxic to humans and animals.

The original Varner, et al, study published in Neuroprotective Agents, 1997, was designed to determine whether aluminum and fluoride (aluminum fluoride) in drinking water play a role in age-related neurological damage similar to Alzheimer’s disease. It was the first scientific study to deal with fluoride/aluminum interaction.

The researchers considered that fluoride and aluminum could combine in the stomach and be more readily transported to the brain. The combination, they believed, could enhance neurological damage and cause conditions such as presenile dementia or Alzheimer’s like dementia (ALD). During the first experiment, the researchers had noted and were perplexed by the alarmingly high death rate in the group of animals receiving aluminum and fluoride in their drinking water (80% of the animals in the low-dose group died before completion of the experiment).

They also noted that the amounts of aluminum and fluoride fed to the animals was about the same as the amounts people are exposed to in artificially fluoridated public water supplies. The reasons for the high number of animal deaths is still unexplained as was the fact that the greatest number of mental impairments appeared in the low-dose group of animals.

It was also observed that the animals who drank the aluminum/fluoride-laced water developed sparse hair and abnormal, copper-colored underlying skin which is related to premature aging. Researchers said that most often this condition is the result of several diseases including 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 presenile dementia. They concluded that the alterations of the blood vessels may be a primary event triggering neuro-degenerative diseases.
Astounded, the researchers went on to say: "Not only did the rats in the lowest dose groups die more often during the experiment, they looked poorly well before their deaths. Even the rats in the lowest dose group that managed to survive the 45 weeks looked to be in poor health."

Subsequently, the researchers reported that the results of the "THIRD" animal study confirmed the findings of the previous studies. This red flag alarmed the USEPA panel of experts because the same physical and neurological damage can also be occurring in humans in areas where both aluminum sulfate and fluorides are added to the public drinking water.

Based on the conclusions drawn from the third Varner study, the USEPA experts requested further research be commissioned by the National Toxicology Program. In spite of the disturbing Varner team revelations it will take two to three years for the National Toxicology to review the request.

Almost 60% of the United States is fluoridated, and the odds of an American developing some form of dementia by the age of 65 is estimated at 1 in every 10 people, and at the age of 85, the odds are 3 in every 10 people.

In the United Kingdom, which is 10% fluoridated, 7% of the population over 65 years will develop some form of dementia.

Recent USEPA concerns over arsenic, a Group 1 (a) carcinogen, caused the government-contracted water treatment chemical certification laboratory, National Sanitation Foundation International, to say that there will be "increased product failures" due to high arsenic levels in fluorosilicic acid. USEPA has asked the US Government to dramatically reduce arsenic levels in drinking water from 50 parts per billion to 5 parts per billion. The EPA is keen to change the regulations because arsenic is known to cause a wide range of cancers in humans.

More recently, the primary component of fluorosilicic acid and sodium fluorosilicate - silicon - has also been discovered in the brain plaque of Alzheimer’s and Alzheimer’s-like dementia (ALD) victims. Silica has also been found in the brain tissue of people with primary brain tumors, which is considered a terminal condition. Although aware of these new developments, no responsible government agency including the USEPA will request that any research be done with the actual toxic waste "product" used to fluoridate public drinking water.

*Microvascular abnormalities are associated with strokes resulting in forms of memory loss.

More to come on the effects of Aluminum on our bodies.

Resources:
Contact Scott Master, National Toxicology Program for status of the USEPA
Nomination:
NTP Nominations Faculty
National Toxicology Program/NIEHS
Ph. Phone: 919-541-5710

Joyce Donohue, USEPA Office of Water Ph. 202-260-1318

Research resources:

2. Links to USEPA responses to Congressional inquiry on drinking water fluoridation

4. UK statistics: www.ums.ac.uk/physiology/daveb/brain.day/stats.htm

See also See Health effects: Fluoride & Liver Tumors in NTP Fluoride/Cancer Study: http://www.fluoridealert.org/health/cancer/ntp/battelle.html

Diane Drayton Buckland
Independent Chemical Researcher/Activist
FIA website | MCS website | Profile

Fluoride Dr John Yiamouyiannis - CANCER
http://www.youtube.com/watch?NR=1&feature=endscreen&v=SYxLRtudYM4

Fluoride Causes Cancer - Dr. Dean Burk
http://www.youtube.com/watch?v=ClqK7XvFLg0