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**Water 411**

WATER, WELLNESS AND YOU

VOLUME 1, ISSUE 2

Fluoride. Are We Overexposed?

Fluoride is one of the most common, and one of the most controversial, elements added to North American water supplies. Water fluoridation began in Canada over 50 years ago, as a preventative dentistry program, intent on curbing levels of dental decay, especially in children. But, recent scholarship has questioned the effectiveness of such measures, and their associated risks. Prominent health and dentistry experts are now speaking out about these public programs, claiming them to be outdated, ill informed, and a culprit in public overexposure to fluoride.

The 1984 issue of Clinical Toxicology of Commercial Products lists fluoride as "more poisonous than lead and just slightly less poisonous than arsenic." A high level of ingested fluoride is extremely dangerous. That is why fluoridated products carry warnings advising against ingestion.

Perhaps most distressing, however, is the source of the fluorides used in the treatment of water. Municipalities rely on industrial grade silicofluorides to fluoridate water. Silicofluorides are a by-product of the phosphate industry. They are industrial wastes that often contain trace amounts of other harmful elements, including lead and arsenic, which are known carcinogens.

Dr. Hardy Limeback, head of preventative dentistry at the University of Toronto has publicly challenged the effectiveness of water fluoridation in our communities. He alerts that preventative effects of fluoride use come only from topical applications in the form of toothpastes and rinses. He stresses that ingesting fluoridated substances have resulted in a sharp rise in the condition of dental fluorosis. This is irreversible damage to the enamel coating on our teeth. Ingested fluoride attacks the cells that create enamel, causing the tooth to become discoloured, porous, and susceptible to chipping, pitting, and fracturing.

Dr. Limeback also argues that teeth and bones are not the only collectors of fluoride in our bodies. Soft tissues in the body also retain these additives. Our kidneys are particularly vulnerable to the toxic effects of fluoride, as they process and remove up to 50 percent of the amounts we ingest. Scientific studies have suggested a



link between long-term exposure to elevated fluoride levels and higher incidences of cancers and renal diseases.

Additionally, as the centre of anti-oxidant defense in our bodies, bone marrow is also susceptible to this accumulation. As fluoride becomes stored in our bones, it decreases the efficiency of immune response processes. Fluoride found in bone marrow blocks the release of white blood cells, which are our body's mechanism for attacking infection and foreign cell invasion. In 2006, the National Research Council published a report, which confirmed that high levels of fluoride in our bone marrow could inhibit or impair our ability to fight off disease and illness. Researchers studying fluoride tissue levels in patients living in fluoridated areas have found distortions in the body's proteins resulting in autoimmune or allergic responses. These findings further suggested that immuno-compromised individuals with high levels of fluoride stored in their marrow are at an even greater risk of illness.

Fluoride accumulation also has drastic effects on our neurological functions. Fluoride accumulates in the brain's pineal gland. This small gland stores the largest concentration of the fluoride we consume. Fluoride build up in the pineal gland alters hormonal balances in our bodies, by accelerating this gland's production of melatonin. According to the National Research Council, "Recent information on the role of the pineal organ in humans suggests that any agent that affects pineal function could affect human health in a variety of ways, including effects on sexual maturation, calcium metabolism, parathyroid function, postmenopausal osteoporosis, cancer, and psychiatric disease."

According to a recent study conducted at Harvard Medical School, Eastman Dental Center, Iowa State University and Forsythe Research Institute, fluoride carries the potential for "motor dysfunction, IQ deficits and/or

learning disabilities in humans." This could, in part, be due to the ability of fluoride to interfere with enzyme activity at even moderate doses.

Of further concern is the suspected relationship between fluoride and Alzheimer's Disease. Fluoride readily attaches to aluminium compounds, which are added to water supplies to ensure clarity at the tap. An international study on the neurotoxicity of fluoride stated that individuals exposed to high levels of industrial fluoride, "reported symptoms related to impaired central nervous system functioning with impaired cognition and memory."

The Centers for Disease Control and Prevention has ranked fluoridation as one of the top ten health achievements of the 20th century. Fluoride is portrayed as an innocuous mineral

that strengthens teeth and bones. But fluoride is not safe for everyone. In fact, the individuals for whom fluoridation was purportedly established, children under 12, seem to be the most at risk for toxic side effects from this mineral. The Canadian Dental Association, in its revised guidelines, states that there is "...weak scientific evidence supporting the effectiveness of fluoride supplements...The use of fluoride supplements before the eruption of the first permanent tooth is generally not recommended."

In his 1959 broadcast on CBC Radio, Gordon Sinclair, one of Canada's most outspoken, and long-standing opponents to water fluoridation, stated, "If fluoride is useful in protecting some children's teeth, some of the time, why are we adding this medication to the water supply for all of the people, all of the time?" His objection to enforced

consumption of fluoride was based on the fact that as a free citizen of a country that embraces a democratic process, he had a moral objection to being fed a medication, against his will, through the water supply.

Even in light of scientific evidence that we, as a population, are ingesting too much fluoride, Mr. Sinclair's cries still fall on deaf ears. Fluoride has become as much a political issue as it is a health issue. Municipalities that are currently fluoridating water supplies are not likely to cease in the practice at any time soon. Fortunately, even though we cannot stop this practice, we can control the amount of fluoride we ingest by opting for purified water sources. Fluoride can be removed in our own homes by using water filtration systems, designed to eliminate exactly this sort of unwanted and unnecessary additive.

WATER TONICS

Chicken Soup for the Body Too!

For centuries, broths have been revered for their restorative properties, and science has finally caught up with folk wisdom. Laboratory testing has revealed anti-inflammatory properties in chicken broth, explaining why it soothes sore throats and eases the misery of colds and flu. Broths also limit the production of mucus, which causes the discomforts of coughs and stuffy noses.

Good broth is a balance of technique and recipe. It should have flavour, body, and an appealing aroma - signs of a hearty, healing soup.

Ingredients:

Bones from one chicken	2 carrots
2 chicken feet or wings	2 celery stalks
1 large onion	

Special Tips:

- Add wings or feet to the pot to create a healthy, dense broth. Gelatin found in these ingredients is rich in amino acids, and a restorative protein for your bones, skin, digestive tract, immune system, heart, and muscles.
- Use organic vegetables in your broth. Boiling, even for hours, will not remove pesticides.
- Submerge the ingredients completely in purified water to dramatically heighten the flavour and healthiness of your stock. Chlorine and dissolved mineral salts in tap water can impart unwanted flavours to your broth, and do not benefit your body.

Putting It Together:

- Place chicken into a roasting pan with onions and carrots. Roast over high heat (450°F) until browned, and place ingredients into the stockpot. Pour off any fat, but carefully preserve the pan juices. Deglaze the pan by adding one cup of hot water and scraping up any "bits" that remain. Add all of these "juices" to the pot.
- Start stock in 1 - 1.5 litres of cold water and heat gently to a boil to ensure that proteins in the bones and meat will have time to rise to the surface. Skim this, and any large deposits of fat. As water evaporates, replace with fresh cold water.
- Add your flavouring ingredients including celery and aromatic herbs such as peppercorn, bay leaf, parsley and thyme. You may also add ginger, hot peppers or garlic - all well-known curatives for the common cold.
- Allow the stock to simmer for at least three hours. This will release maximum amount of calcium and other nutrients from the bones.

So remember, while Chicken Soup may be good for the soul, it provides much needed nutrients to the body too. A well-fed immune system is your best bet for warding off winter bugs.

YOUR BODY OF WATER

Why Drinking Water Really is the Key to Weight Loss

For many years now, debate has been raging within the scientific community regarding whether dieters should follow a low-carbohydrate or a low-fat regime. Neither approach has proven particularly efficient in weight reduction when used in isolation. The problem stems from the fact that foods low in fat or carbs can still be high in calories. Barbara Rolls is a professor and Guthrie chair in nutrition at Pennsylvania State University with some very innovative ideas. She advocates a diet that is high in water to maximize weight-loss while minimizing hunger.

For nearly three decades, Rolls has researched food choices, portion sizes and the caloric or energy density of foods. Most recently, she has been studying the impact of energy or calorie density (the number of calories in a given weight of food) on satiety and weight control. Her results have been surprising. It seems that humans eat approximately the same volume of food every day. Her theory of dieting is, therefore, called the Volumetrics Eating Plan.

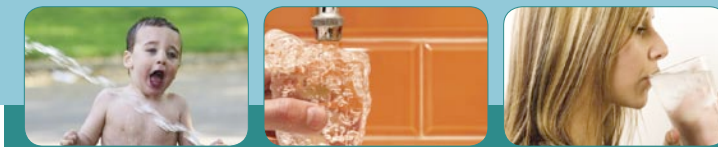
Central to this theory of weight management is her research that indicates that the absence of satiety is one reason most "diets" don't work very well or for very long. Her research also indicates that negative messaging with regard to diet does not seem to encourage weight-loss. She states that, "People need to eat more low-energy-dense food, such as fruits and vegetables, so they get a satisfying amount of food and enough calories." It seems most beneficial

in weight management to encourage individuals to eat sufficient amounts of the right foods rather than to tell dieters to eat less.

The key to losing weight, Rolls contends, is to choose foods with a low "energy density". To determine energy density of a food, divide the number of calories in a serving by its weight in grams. The lower this number, the more of that food can be consumed. Primarily this means that for optimum weight management, individuals should be choosing foods that have a high water content. For instance, one small box of raisins contains about 130 calories, whereas one cup of grapes contains less than 110 calories. Eating the grapes will make you feel more full and still provides fewer calories.

People trying to lose weight should, therefore, eat plenty of fruits, vegetables, soups and low-fat dairy products, which are high in water content and low in energy density (less than 1). Lean meats, which tend to have an energy density of between 1 and 2 are also good choices. Foods high in fat and simple carbohydrates will have a density of greater than 2 and should be eaten in moderation.

So it seems, that water is the key ingredient to healthy weight loss. Not only should we be increasing the amount of water that we drink, we also need to eat more foods with a higher water content.



ALTERNATIVE HEALTH FILE

Dr. Hardy Limeback

Over the last 25 years, Dr. Hardy Limeback has become a prominent member of the Canadian dental profession. More recently, he has also become a controversial figure as an outspoken adversary of water fluoridation in Canada. As a long time consultant to the Canadian Dental Association, former President of the Canadian Association for Dental Research, and an Associate Professor and Head of Preventative Dentistry at prestigious University of Toronto, Limeback has dedicated a large proportion of his professional research to the study of dental fluorosis and public cavity prevention.

After years of teaching and promoting the dental health benefits of public water fluoridation, he caused a flurry of discussion and action when, at a conference in April 1999 he publicly apologized to students, peers, and the community for his failure to adequately assess the effectiveness of these practices. In this challenge to long-held views supporting water fluoridation, he acknowledged the dangers of fluoride ingestion, and has since recalled that, "[s]peaking as the head of preventive dentistry, I told them that I had unintentionally misled my colleagues and my students. For the past 15 years, I had refused to study the toxicology information that is readily available to anyone. Poisoning our children was the furthest thing from my mind."

While Dr. Limeback continues to recognize the positive effects of topically applied fluoride as a preventative measure, he stands firm that the risks deriving from ingested fluoride are great, especially for small children. As a foremost fluoridation expert in Canada, Dr. Limeback has publicly stated that "[c]hildren under three should never use fluoridated toothpaste. Or drink fluoridated water. And baby formula must never be made up using Toronto tap water," as it may cause permanent damage to erupting teeth and dental development.

In a reaction to the media frenzy following his public apology, Limeback advised that, "[i]here is now a better understanding of how fluoride prevents dental decay," and recent toxicological assessments suggest that fluoride ingestion is not only ineffective, but unsafe over the long term. His challenge to water fluoridation sent ripples through the dental community, and public media, adding to the contentious fluoridation issue, and bolstering the efforts of anti-fluoridation campaigns in Canada. Since his public reversal the dental community has been forced to delve into the toxicological effects of common fluoride treatments, including water fluoridation, and previously uninformed communities have taken sharp notice of the potential hazards of this common practice.