



IMAGE AWARENESS WELLNESS INSTITUTE

Can I Avoid Being Poisoned?

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INTRODUCTION

In 2005 Canadians received a shock. Environmental Defence tested the blood of average Canadians for a wide range of pollutants in the first test of its kind. Testing covered a wide range of chemicals found in individuals from across Canada. Toxic chemicals were found to contaminate Canadians no matter where they lived in the country, how old they were, or what they did for a living. Dr. Rick Smith said, “If you can walk, talk and breathe, you’re contaminated.”

On average 44 chemicals were found in each of the volunteers tested. Most of the volunteers were eating organic foods. Many of the chemicals found in the blood of Canadians are associated with cancer, hormone disruption, respiratory disorders, reproductive and developmental disorders.

Toxin exposure is not unique to Canadians. In 2005 the U.S. Centers for Disease Control and Prevention reported that most American children and adults were carrying in their bodies dozens of pesticides and toxic compounds. Many of the compounds were found at higher levels in children than adults.

REFERENCES:

<http://www.ens-newswire.com/ens/nov2005/2005-11-15-05.asp>

<http://environmentaldefence.ca/reports/pollution-in-people-toxic-chemical-profiles-11-adults-and-5-families-across-canada>

<http://articles.latimes.com/2005/jul/22/nation/>

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DR. ARTHUR FURST

One of my mentors was Dr. Arthur Furst, Ph.D. Dr. Furst was a founding member of the American College of Toxicology, its first secretary, and then President of the organization in 1985. He was awarded its highest honor, Fellow Membership status, in 1986. Dr. Furst was involved in the organization of the *Journal of the American College of Toxicology* and served as Associate editor beginning in 1982. Dr. Furst was involved in cancer research before there was a National Cancer Institute. His research focused on the ability of toxic metals to cause cancer.

Dr. Furst pioneered oral chemotherapy for cancer. He later came to realize that phytonutrients played a role in prevention of cancer and guided the development of a number of GNLD’s phytonutrient products



including Betagard, Carotenoid Complex, Flavonoid Complex, and Cruciferous Plus.

Dr. Furst’s interest in nutrition began as a result of his work on butter yellow. Grass fed cows produce butter with a rich yellow color as a result of the carotenoid content in the grass. Margarine was developed as a substitute for butter in the late 1880’s. The product had a marketing problem, a clear white color which made it look like lard. Butter yellow was an artificial dye developed to make the margarine look like high quality butter. An irony is that today butter is frequently colored yellow because many dairy cattle are not fed a diet high enough in carotenoid content to give the butter an attractive yellow color.

Dr. Furst confirmed that butter yellow was a carcinogen. His research also demonstrated that specific nutrients would *totally* protect laboratory animals from the carcinogenic effects of the yellow dye. Worldwide media reports of Dr. Furst’s work focused on the carcinogenic nature of butter yellow and ignored the importance of nutrients in preventing the carcinogenic effects of ingestion of the dye.

Dr. Furst became preoccupied with the power of nutrients to reduce the risk of cancer. The human environment is permeated with potential carcinogenic agents. Nutritional factors have the ability to reduce risk of developing toxin caused diseases by



enhancing the coping mechanisms the body has developed to deal with potentially harmful substances.

THE DOSE

The chief concern of a toxicologist is the dose of a potential toxin to which a plant, animal or human is exposed. Toxicologists use the term LD50 to refer to the dose of a toxic substance which kills 50% of a test population of animals. Traditional toxicology adopted the principle that a higher dose poses greater risk where toxic compounds are involved (“The Dose Makes the Poison.”)

Toxicological evaluation of many recently developed chemicals has not been conducted. Testing a single chemical can cost millions of dollars and require many years.

Confounding the attempt to evaluate the toxicological nature of different compounds is the discovery that some compounds do not kill but act as endocrine disruptors in minute doses.

Another complicating factor is the proclivity of individuals to accumulate or excrete toxic substances based upon a varying intake of different nutrients. A toxic substance might be harmless to a well-nourished individual but trigger a degenerative disease in a poorly nourished individual.

SYNERGY

The synergistic effects of different toxic substances is the elephant in the toxicological closet. Polluters and regulators have chosen to ignore the possibility of toxic synergies.

Randall Fitzgerald writes, “What makes synergy so scary for scientists and government regulators is how it profoundly challenges all traditional risk analysis calculations of whether chemicals in products, food, water, or medicines pose a threat to human health....Measurement techniques used by science and medicine remain too cumbersome to even begin projecting the risks of multiple chemicals from multiple sources interacting inside the human body. Many scientists and most corporations would rather pretend that synergies don’t exist rather than face the prospect of having to admit that everything they thought they knew about synthetics and health is wrong.”

Brick Township in New Jersey had twice the average incidence of autism found in the rest of the United States in 2000. The well water in the city was contaminated with three toxic substances (bromoform, chloroform, and tetrachloroethylene) as a result of a toxic landfill which was declared a Superfund clean-up site in 1983. Federal scientists determined in 2000 that the levels of contaminants in the well water were too low to harm children’s health.

Carol Reinisch, an expert in chemical-induced toxicity to nerves, wondered if the combination of the three chemicals might be a problem. Her laboratory was using surf clam embryos to study nerve growth and development.

When the toxins were studied alone or in pairs there was no significant impact on nerve development in the embryos even at levels 1,000 times those in the city water. The combination of the three, however, upregulated a key regulator of neuronal growth. Jill Kreiling, co-author of the scientific report, said, “We found something unusual going on neurologically, but we cannot say this is causing autism.”

Nigel Fields, a research program manager at the Environmental Protec-

tion Agency, said, “Most risk assessments look at single chemicals acting on single target organs with single outcomes, but that’s not the way [exposures] work in nature.”

In 2011 researcher Sara Rose Guariglia and associates published a study which reported the induction of gender specific autistic-like behaviors in mice resulting from exposure to the same three chemicals found in the city of Brick. The male mice showed significantly increased anxiety, an increase in perseverance behavior, and a significant reduction in sociability.

One of the things which is so startling about this research is that each of these three chemicals was given a clean bill of health at levels a thousand times those found in the drinking water of the community because of the way toxicological studies are generally designed. It is a mistake to assume that a substance is perfectly safe just because it has passed a toxicological study. One wonders what other modern chemical wonders might act synergistically to contribute to the autism epidemic or other health problems.

The study discussed above is not unique. Karen Lau and associates tested the neurotoxic effects of combinations of non-nutritional food additives. Synergistic toxic effects to nerves were observed when Brilliant Blue color was combined with L-glutamic acid (mono-sodium glutamate) and when Quinoline Yellow was combined with aspartame. The researchers reported, “Inhibition of neurite outgrowth was found at concentrations of additives theoretically achievable in plasma by ingestion of a typical snack and drink.” The researchers noted that “both combinations are potentially more toxic than might be predicted from the sum of their individual compounds.” The researchers noted that humans are routinely exposed to complex mixtures of chemicals, “yet they continue to be tested for toxicity in isolation from each other.” Sadly, “...



cumulative toxic effects have hardly been explored at all.”

During the period of brain growth from the sixth month of pregnancy until several years after birth brain cells are very sensitive to specific disturbances which can be created by combinations of chemicals added to foods and environmental pollutants in food and water. The levels of food additives tested in this study were determined by analysis of foods being consumed by children.

REFERENCES:

- Fitzgerald, Randall, *The Hundred-Year Lie*, London: Plume, 2007, 35.
- Potera, Carol, Neurology: Triple threat activates neurons, *Environmental Health Perspectives*, June 2005; 113(6):A372.
- Kreiling, Jill A., Stephens, Raymond E., and Reinisch, Carol L., A mixture of environmental contaminants increases cAMP-dependent protein kinase in *Spisula* embryos, *Environmental Toxicology and Pharmacology*, January 2005; 19(1):9-18.
- Guariglia, Sara Rose, et al., Chlorination byproducts induce gener specific autistic-like behaviors in CD-1 mice, *Neurotoxicology*, October 2011; 32(5): 545-553.
- Lau, Karen, et al., Synergistic interactions between commonly used food additives in a developmental neurotoxicity test, *Toxicological Sciences*, March 2006; 90(1):178-187.

BIOLOGICAL MAGNIFICATION

Man has a long history of attempting to protect his crops from pests. This is probably one of the reasons for the domestication of the cat. Prior to the 1950's in the United States arsenic based pesticides were commonly used. This is one reason water supplies are often contaminated with this

poison.

In the 1940's synthetic pesticides were developed. Their use became widespread in the 1950's.

Rachel Carson was one of the first to popularize the difference between simple accumulation of toxic substances and biological magnification in her 1962 book *Silent Spring*. One of the more memorable parts of the book is her discussion of the disaster which took place at Clear Lake, California.

Clear Lake is the ideal habitat for a small gnat. Spraying with DDT began in 1949 with one part of the pesticide to 70 million parts of water. By 1954 there had been a resurgence of the gnats and the lake was sprayed at one part per 50 million parts of water. A third spraying took place in 1959.

At this point the beautiful western grebe (or swan grebes) began to perish in great numbers. Before spraying began more than 1,000 pairs of nesting grebes were found around the lake. By 1960 only 30 pairs of nesting grebes could be found and no young grebes were observed.

No pesticide could be found in the water. It had all been taken up by the web of life. Plankton contained about 5 parts per million, 25 times the maximum concentration in the water. Plant eating fishes accumulated 40 to 300 parts per million. Carnivorous fish were found to have 2,500 parts per million. The fatty tissue of the grebes had concentrated 1,600 parts per million.

Carson wrote, “The fact that the insecticide was applied in very low concentrations is meaningless, as its explosive progress through the natural food chain in the lake demonstrates. Yet Clear Lake is typical of a large and growing number of situations where solution of an obvious and often trivial problem creates a far more serious but conveniently less tangible one. Here the problem was resolved

in favor of those annoyed by gnats, and at the expense of an unstated, and probably not even clearly understood, risk to all who took food or water from the lake.”

REFERENCE:

- Carson, Rachel, *Silent Spring*, Boston: Houghton Mifflin Co., 1962, 47-50.

ENDOCRINE DISRUPTION

Thalidomide was the first pharmaceutical drug to be used on a global scale to treat morning sickness. It was later shown to cause limb deformity in male offspring. This drug was followed by the use of DES (diethylstilbesterol) for prevention of premature labor and miscarriage. It was later shown to increase the risk of adenocarcinoma, a vaginal cancer, in female offspring. DES had lifelong negative effects on both male and female offspring.

Exposure to endocrine disruptors appears to be a contributing factor to the epidemic of obesity among young people today. These substances appear to be able to epigenetically alter the way the body is sculpted. Secondly, environmental pollutants may alter the ability to burn calories.

In 2002 Paula Baillie-Hamilton, a doctor at Stirling University in Scotland noted a correlation between the use of pesticides and plasticides over a 40 year period and an increase in obesity rates.

In 2003 Jerrold Heindel reviewed earlier toxicological studies of environmental chemicals and showed that a number of these chemicals caused





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weight gain rather than weight loss which was previously considered an indication of toxicity. He also showed that these things caused weight gain at the small doses to which fetuses and newborns are exposed routinely.

Meanwhile, scientists in Japan noted that pre-fibroblasts that normally become connective tissue were altered by bisphenol A, a chemical involved in the production of plastic. Bisphenol A and some other environmental chemicals programmed these cells that normally become connective tissue to become fat cells.

In 2007 Newbold and associates wrote, "Our experimental data support the idea that adipocytes (fat cells) and the mechanisms involved in weight homeostasis are novel targets of abnormal programming of environmental estrogens, some of which are found in our foods as naturally occurring substances or inadvertently as contaminants." These researchers also noted the same compounds can increase risk of cancer and reproductive difficulties. Molecules that promote weight gain do not necessarily increase food consumption.

The developing fetus and newborn infants are particularly suscep-

tible to damage from environmental pollutants. In 2009 Newbold and associates wrote, "The developing fetus and neonate are uniquely sensitive and can be easily disturbed by exposure to chemicals with hormone-like activity. The protective mechanisms that are available to the adult...are not fully functional in the fetus or neonate....Numerous examples document that developmental exposure to certain chemicals during critical periods of differentiation can cause adverse effects; some of these effects may not be apparent until much later in life." In one study Newbold exposed newborn mice to low doses of hormone-mimicking pollutants people are routinely exposed to. In six months the mice were 20% heavier and had 36% more body fat than unexposed mice.

It is virtually impossible to avoid being exposed to toxic substances in the world in which we find ourselves. Sound nutrition can not totally eliminate risk, but it can reduce the likelihood that toxins will cause serious damage.

REFERENCES:

Begley, Sharon, Born to be big, *The Daily Beast*, September 10, 2009.

Baillie-Hamilton P.F., Chemical toxins: a hypothesis to explain the global obesity epidemic, *J*

Altern Complement Med., 2002; 8(2):185-192.

Newbold, R.R., et al., Perinatal exposure to environmental estrogens and the development of obesity, *Mol Nutr Food Res*, Jul 2007; 51(7):912-7.

Newbold, Retha R., et al., Environmental estrogens and obesity, *Mol Cell Endocrinol*, May 25 2009; 304(1-2):84-89.

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