Practical Ecological Responses

A Health Advisory

Remove Toxics from the Parish and Home

by Fred Krueger

Human beings produce... the contemporary plagues... of cancer, heart diseases, anxieties and other diseases.

- HAH Ecumenical Patriarch Bartholomew
September 1, 2001

One of the seldom discussed facts about the monks on Mount Athos is that they have no heart disease and cancer occurs only in those monks who have lived extensively outside of the Holy Mountain. Whether that is due to their life of prayer, or their clean food, or low stress is open to discussion, but their experience shows that the modern epidemic of cancer and heart disease are caused by our modern lifestyle.

In 2010 the President's Cancer Panel issued a report deploring the rising number of carcinogens released into the environment. The panel called for more stringent regulation of toxic chemicals and wider awareness of their dangers.

Dr. LaSalle Leffall, MD, the chairman of the panel, said, "The increasing number of known or suspected environmental carcinogens compels us to action...."

The problem is the widespread chemical contamination of the air, water, land and food chain. Nobody will deny that many chemicals bring significant benefits to society. The 21st century depends upon them. But we have failed to distinguish between chemicals that are safe and beneficial, and those that are hazardous.

Hazardous chemicals are now spreading across the world and touching all forms of life. These hazardous substances are found in the tissue of nearly every person. Exposure is linked to cancers, hormone disruptions, reproductive problems, birth defects, asthma, genetic mutations, and a wide range of diseases and health problems. A European study of human contamination found evidence of DDT and PCBs, two dangerous chemicals banned decades ago, in 99 percent of the people tested.

According to the National Cancer Institute, "natural and man-made substances in the environment account for at least two-thirds of all the cases of cancer in the United States." Other public health studies place the figure at over 90 percent.

Autism, attention deficit hyperactivity disorder (ADHD), dyslexia, mental retardation, premature puberty, lowered IQ, plus other learning and behavior disorders

have become common in American children. The incidence of developmental and learning disabilities (LDDs) is rising with between 5 to 15 percent of all children under the age of 18 in the United States now afflicted. These disabilities have increased sharply since 1970 and now affect more than 12 million children.

"We know enough now to take steps to protect our children," said Dr. Martha Herbert, PhD, MD, a professor of neurology at Harvard Medical School and a pediatric neurologist at the Massachusetts General Hospital in Boston.

The unintentional exposure to harmful chemicals has become an unavoidable fact of modern life. Approximately 3,000 chemicals are manufactured in quantities over one million pounds each year. Medical science has little or no information on the large majority of these chemicals about their potential to affect learning and development. According to a 2008 Scientific Consensus Statement on Environmental Agents Associated with Neurodevelopmental Disorder, signed by fifty top health professionals and scientists, "there is good evidence that at least 200 of these chemicals are adult neurotoxicants, and another 1,000 are suspected of affecting the nervous system."

While many factors contribute to learning and developmental problems, chemical contaminants are the least studied, although, ironically, they are largely preventable. Medical science has solid evidence that a variety of environmental agents adversely affect the nervous system, and that a child's developing nervous system is far more sensitive to chemical exposure than the adult nervous system.

A contributing factor is that children who lack a full spectrum of nutrients are more susceptible to toxic chemicals. For instance, iron and calcium deficiencies can affect the absorption and toxicity of heavy metals such as lead and manganese. The role of nutrition in minimizing the effects of exposure is a key health issue.

Dr. Philip Landrigan, MD, at the Children's Environmental Health Center at Mount Sinai School of Medicine, bluntly describes this situation:

> We could cut the health costs of childhood disease and disabilities by billions of dollars every year by minimizing contaminants in the environment.

Accepting the exposure of children to contaminants that cause learning and behavioral disabilities is immoral and irresponsible. Respect for children is violated when they are carelessly exposed to harmful substances.

Dr. Paula Baillie-Hamilton, MD, a medical doctor and researcher at Oxford University, finds what she calls "completely overwhelming evidence" that toxic chemicals are damaging all aspects of our health at current exposure levels:

> Thousands of academic papers link toxic chemical exposure to a wide range of modern health disorders. These disorders include diabetes,

allergies, asthma, eczema, cancer, heart disease, multiple sclerosis, Parkinson's disease, attention deficit disorder, autism, learning difficulties, infertility, depression, chemical sensitivities, chronic fatigue, thyroid disease, inflammatory bowel disease, among others.

The higher the concentration of chemicals, such as pesticides, environmental pollutants, plastics, toxic metals, mercury from dental fillings and vaccines, and aluminum (also from vaccines), chlorine (water), or solvents, the higher the level of disease found in the subject.

With synthetic chemical production doubling approximately every ten years, the problem will only get worse.

"The time has come," she says, "to face up to the problem and tackle it head on.... It is clear that by identifying and avoiding the highest sources of toxic chemicals in our food and environment, and by taking a nutritional based program to enhance our body's natural disposal systems, it is possible to lessen the symptoms of existing diseases, but it is also possible to lower the risk of developing them in the first place."

The following list of toxic hazards is just a beginning. A key lesson from this review of chemicals frequently present in the parish or home is that clergy and parents should know the products that they use and take the necessary steps to ensure that they are clean and benign. If we respect life, we will not endanger those in our care with dangerous substances that should be banned. The reason that they are not banned is that commercialism is often stronger than morality and respect for life. Nevertheless, as Christians, we have a moral responsibility to be informed and ensure that children have a healthy future and that adults are not exposed to dangerous substances.

The following chemicals are believed or have been "conclusively shown" to cause a range of serious health problems. Parish officials and parents should remove these sources of toxic exposure from their premises.

Ammonia
This causes irritation to eyes and mucous membranes, breathing difficulty, wheezing, chest pains, pulmonary edema, and skin burns. High exposure can lead to blindness, lung damage, heart attack, and possibly death.

Arsenic
Arsenic is frequently found in drinking water in the U.S. and around the world. Recent studies have discovered a relationship between exposure to arsenic and mental impairment. While additional studies about low levels of arsenic in drinking water are needed, it is clear that arsenic adversely affects the neurodevelopment of children.

Bisphenol-A (BPA)
BPA is a common ingredient in consumer plastics, particularly polycarbonate plastic items such as reusable bottles, food packaging, and baby bottles. It also coats the inside

of food cans. Adults with high levels of BPA are twice as likely to suffer from heart disease than those with low concentrations of BPA. BPA also mimics estrogen. BPA's ability to mimic estrogen — and spur reproductive mutations — is well documented. Canada and European countries have recently banned products containing BPA.

Bleach (Sodium hypochlorite)
When bleach is mixed with acids (typically found in toilet bowl cleaners), it forms chlorine gas. The chlorine in bleach can bind with organic material in the marine environment to form toxic compounds that persist in the environment. There may be some circumstances where bleach use is necessary for disease control, but there is little need for it on a regular basis. Washing counters and other surfaces with soap and water removes most bacteria; many alternatives are available for laundry uses of bleach.

Dichlorobenzene (1,4 DCB)

DCB is found in deodorizing products, such as room fresheners, urinal cakes, toilet bowl fresheners, and cleaning products. It is also used as an insecticide for moth control. DCB is linked to a reduction in pulmonary function.

Endocrine disruptors
Animal studies show that a wide range of chemicals disrupt endocrine and cognitive function. Endocrine disrupting chemicals include phthalates, PCBs and polychlorinated dibenzodioxins, brominated flame retardants, dioxins, DDT, perfluorinated compounds (PFCs), pesticides, and some metals.

Ethoxylated nonyl phenols (NPEs)
Also known as “gender-benders,” NPEs can induce female characteristics in male fish. The threat posed to the environment by nonyl phenols in industrial soaps and floor cleaning products has prompted the European Union to ban them from all products manufactured or used in the countries of the EU. It is still widely used across the U.S.

Ethylene glycol butyl ether,
This chemical is sometimes called 2-butoxyethanol. It is used as a solvent in carpet cleaners and specialty cleaners. It can be inhaled or absorbed through the skin and may cause blood disorders, as well as liver and kidney damage. With long term exposure, it may also cause reproductive damage.

Formaldehyde
This carcinogenic substance is found in a wide range of products from plastics, synthetic fibers to hair products, furniture, plywood, cosmetics, styrofoam cups and textile finishes. In high concentrations it can trigger asthma attacks. Other health effects include eye, nose, and throat irritation; fatigue; skin rash; allergic reactions, even cancer. Avoid it.

Fluoride
Fluoride is commonly added to drinking water to reduce dental decay. It is frequently found in toothpastes and mouthwashes. Excessive fluoride lowers thyroid hormone levels. One study reported decreased child IQ levels from fluoride in drinking water. A concern is that multiple sources of exposure may result in a cumulative exposure to fluoride which can cause developmental effects.

Food additives
Artificial food colors and additives are found in many processed foods and are believed to cause conduct disorders. Studies confirm that artificial food colorings as well as the preservative sodium benzoate cause behavioral disorders. If you see the following on foods, consider passing: Propyl Gallate, BHA, BHT, and sodium nitrite – preservatives; Potassium bromate in baked goods – causes cancer in animals; Monosodium glutamate (MSG) – a flavor enhancer and excitotoxin; Aspartame – causes brain tumors and rat leukemia; Hydrogenated Vegetable Oil – creates trans fats, which promote heart disease and diabetes; Food colorings Blue 1, Blue 2, Red 3, Yellow 6 – cause brain tumors in mice. Artificial food colors and additives cause hyperactivity in three-year-old children. This is a serious issue given the large number of children with ADHD.

Manganese
Manganese is a trace element which is essential in small quantities for normal growth and development. High levels of manganese exposure, however, either from inhalation or through drinking water, can damage developing nervous systems.

Mercury
After radioactive plutonium, mercury is the most toxic substance known to science. Mercury causes a variety of health and developmental disorders. Most fish now contain trace levels of mercury because of the increased use of coal-fired power plants which release air-born mercury that settles on the land, streams, and lakes. Larger predatory fish bioaccumulate mercury which concentrates it. Early symptoms of mercury toxicity typically include sensory impairment, momentary forgetfulness, disturbed sensations, and a lack of coordination. The type and degree of symptoms depend upon the extent and duration of exposure. Do everything possible to avoid mercury toxicity. This should include a sharp reduction in the amount of fish consumed, especially large fish.

Methylene chloride
Methylene chloride is a solvent found in paint strippers, polyurethane foam, and cleaning supplies. Exposure leaves users at increased risk of developing cancer, adverse effects on the heart, central nervous system and liver, and skin or eye irritation

Naphthalene
Naphthalene and sometimes paradichlorobenzene are used in mothballs and moth crystals. Naphthalene is listed by the California Office of Environmental Health Hazards Assessment as a substance “know to cause cancer,” while paradichlorobenzene

is listed as a possible human carcinogen. Avoid moth control products that contain these ingredients.

Nicotine and tobacco smoke
Studies link smoking to behavior disorders in children. The developmental delays caused by tobacco smoke are costly and preventable. Childhood exposure to tobacco smoke often causes neuro-behavioral effects. Smokers are vulnerable to lung cancer.

Pesticides
Pesticides are everywhere in our environment. Agricultural and residential application of pesticides totals more than 1 billion pounds each year in the U.S. alone – about three pounds per person. Evidence shows that childhood exposure to pesticides increases the risk for birth defects, developmental disorders including memory problems, cancer, poorer motor performance, asthma, cleft palate, and many other conditions.

Polycyclic aromatic hydrocarbons (PAHs)
PAHs are air pollutants and well-recognized mutagens and carcinogens. They are generated during combustion of fuels from motor vehicles, coal-fired power plants, residential heating and cooking, and tobacco smoke. Elevated exposure to PAHs causes lower birth weight and cognitive development.

Polybrominated diphenyl ethers (PBDEs)
PBDEs are often used as flame-retardant chemicals in pajamas and bed clothes. Recent studies leave little doubt that PBDEs are developmental neurotoxicants and lead to changes in motor activity and reduced performance on learning and memory tests.

Polychlorinated biphenyls (PCBs)
PCBs are chlorinated compounds that were once used as cooling and insulating fluids in electrical transformers. Numerous studies document that exposure to PCBs causes cancer and lymphoma; it adversely affects motor skills, depresses the immune system, retards learning and memory as well as verbal IQ scores and reading ability.

Silica
Silica is produced from finely ground quartz. As a fine respirable (breathable) dust, it is carcinogenic. Silica is found in some abrasive cleansers, which are often used on a regular basis around the home.

Solvents
Solvents include a broad array of compounds including benzene, turpentine, acetone, and tetrachloroethylene. Several reports document adverse developmental effects from exposure, including neurobehavioral disorders, especially for women of child bearing age. Short term exposure to benzene can lead to depression of the central nervous system, drowsiness, dizziness, headache, nausea, loss of coordination, confusion and unconsciousness. Long term exposure can lead to memory loss, anemia, and leukemia.

Toluene
Toluene is used as a solvent in numerous products, including nail polish, paints, and cleaning products. It is a potent reproductive toxin and is listed by the State of California as a reproductive toxin that may cause harm to a developing fetus. It causes hallucinations, bone marrow changes, liver and kidney damage, birth defects, plus it is a carcinogen linked to brain cancer. Pregnant women should especially avoid toluene.

Trisodium nitrilotriacetate (NTA)
NTA is used in laundry detergents and can impede the elimination of metals in wastewater treatment plants. NTA's action can cause metals that have already settled out of sewage to be re-mobilized back into the liquid waste stream. NTA is listed as a possible human carcinogen by the International Agency for Research on Cancer.

Xylene
This extremely toxic ingredient is often found in spray paints, graffiti, and scuff removers, as well as some glues and adhesives. Xylene is a suspected reproductive toxin that has shown reproductive harm in laboratory experiments; it is also a neurotoxicant that can cause memory loss on repeated exposure.

* * *

For your health, the health of your parishioners, and the health of the world, please avoid buying or using these substances – and anything else that destroys the integrity and vitality of God's creation.

The lesson for the Orthodox parish from numerous studies on toxic chemicals is that thoughtful action to remove these harmful substances will prevent many of the health problems associated with hazardous chemicals.

It is not possible to list all of the chemicals associated with cancer, heart disease, immunological and neurological disorders, and learning and developmental disabilities (LLD). However the chemicals listed above are the more prominent culprits. Please make a special effort to ensure that parishes and households are free of these noxious ingredients even if there are inconveniences. The health and safety of parishioners is at stake.

For humans to injure other humans with disease… for humans to contaminate the Earth's waters, its land, its air, and its life, with poisonous substances… these are sins.

- HAH Ecumenical Patriarch Bartholomew
Georgetown University, Washington, DC
November 3, 2009