

Letter to the president about chemicals disrupting our bodies: Dr. Theo Colborn TED xMiedAtlantic 2012.

Theo Colborn was Founder and President Emeritus of The Endocrine Disruption Exchange (TEDX), based in Paonia, Colorado, and Professor Emeritus of Zoology at the University of Florida. She was an environmental health analyst, and best known for her studies on the health effects of endocrine disrupting chemicals.

She was a true pioneer. Her work is acknowledged and valued around the world. She received many awards and honors for her endeavors. They are as follows: Colborn received many awards and honors for her work, including: The Jonathan Foreman Award, American Academy of Environmental Medicine, October 2014; The Jean and Leslie Douglas Pearl Award, December 2013; Twenty-Seventh International Neurotoxicology Conference, Theo Colborn Award, November 2011; Honorary Doctor of Science Degree, University of Colorado, Boulder, May 2011; French National Museum of Natural History, Medal, April 2011; The Swedish Goteborg Prize for the Environment and Sustainability, November 2008; TIME Global Environmental Heroes Award, October 2007; National Council on Science and the Environment, Lifetime Achievement Award, February 2007; University of California San Francisco Medical School/Collaborative for Health and the Environment 2007 Summit Award: A Woman on the Forefront: Leadership and Integrity in Science, January 2007; Beyond Pesticides, 2006 Dragonfly Award, April 2006; The Center for Science in the Public Interest, Rachel Carson Award, May 2004; Society of Toxicology and Environmental Chemistry, Rachel Carson Award, November 2003; International Blue Planet Award, Asahi Glass Foundation, Japan, October 2000; Norwegian International Rachel Carson Award, June 1999; Audubon Magazine: A Century of Conservation, 100 Champions of Conservation, 1998; State of the World Forum, Mikhail Gorbachev, "Change Makers Award," November 1997; Rachel Carson Leadership Award, Chatham College, June 1997; United Nations Environment Programme (UNEP), Women Leadership in the Environment Award, March 1997; National Conservation Achievement Award in Science, National Wildlife Federation, 1994; Pew Scholars Award in Environment and Conservation, June 1993 – 1996; W. Alton Jones Foundation, Fellowship, June 1990 – 1993; The National Water Alliance Award for Excellence in Protecting the Nation's Aquatic Resources, June 1991; US Congressional Fellowship, Office of Technology Assessment, 1985.

She wrote the following open letter to the President and the First Lady because of her concerns about the destruction of our planet's resources.

Dear Mr. President and First Lady,

Have you ever reflected about what the future looks like today—for young people to fall in love, marry and have children? I was so lucky when I carried each of my four children in my womb back in the 1950s. In those days as soon as those babies were born we counted their fingers and toes and my husband of course checked the gonads of the boys. After that we heaved a sigh of relieve and as grateful parents went blissfully on our lives. We gave no thought to the magic of the chemistry in the womb that has evolved over 4 billion years enabling a single cell to split and keep splitting and splitting and moving

about and miraculously create a baby in the womb. Nor did we give any thought to the numerous disorders inflicting children today.

Think what the statistics tell us about the odds of children developing attention deficit hyperactivity disorder commonly called ADHD or autism or diabetes or obesity. Today one out of every three babies will develop diabetes. And you are an African American or among the minorities that would be every other baby.

One out of every 88 babies born today will develop autism spectrum disorder and if you are a boy that is one out of every 54; and in less than 10 years 80 percent of the population will be overweight. No woman should have to live with knowledge of epidemics like that throughout her pregnancy and then watch every day for any telltale sign that her precious baby might be diabetic or autistic because somehow the chemistry in her womb had become flawed.

Many of these disorders that were once rare are the result of the fossil fuel derived chemicals interfering with our endocrine system the over arching system that integrates all our body's glands, like the pancreas, thyroid, adrenal, sex organs and segments of the brain. And now we know even body fat, the stomach and the intestines are all part of the endocrine system. They all produce hormones and function under hormonal control.

Hormones regulate how we develop in the womb and how our bodies function. They can affect our mood, our capacity for empathy, our sexuality, and our ability to process information so we can reach conclusions about what we are hearing and seeing and doing and most important our ability to look each other in the eye and socialize and solve problems. In essence, hormones humanize us.

Today checking our newborns is not as simple as counting fingers and toes to know if our babies are alright. So how could the delicate endocrine chemistry with hormones operating in the womb at concentration at parts per billion and parts per trillion suddenly be under-minded in just three or four generations?

When my babies were born in the 50s and no one could perceive the impending plethora of epidemics that the chemicals could cause. In those days we believed the mantra that there was a barrier in the placenta and a barrier in the embryo and in the fetal brain that would never let stray chemicals get through. The discovery in 1968 that alcohol consumption could breach those barriers should have opened the door for a flood of new research and intensive testing of other chemicals on fetal development. But it didn't.

Back in the 40s and 50s numerous corporate laboratories were built around the world in order to create more and more chemicals using as feed stock the toxic byproducts from fossil fuels to increase profits. We assault pesticides, plastics detergents cosmetic ingredients food additives and more on the promise that there would be better living through modern chemistry.

And then in the 50s and 60s the US and Russia began to allocate vast sums of money for outer space research. In order to get to outer space, innovative chemicals were designed to make construction material lighter and stronger than steel. These innovations got us to the moon and on Mars and also got us new products for our homes and offices and more new recreational products. If there was ever a need for inner space research on what these chemicals could do in our bodies, it was when outer space exploration began. But no one thought of that then. As a result today the surface of the earth is saturated with manmade chemicals that society and the global economy have become totally dependent upon--chemicals that can interfere in the womb with a delicate endocrine system that makes possible the development and differentiation of that precious single cell in the womb into a healthy baby.

Yes, a small number of the nearly 100,000 new chemicals produced up through 2011 were tested but in high occupational level doses for the probability that they could cause immediate probable harm, obvious birth defects and cancer. And governments set standards using risk assessment and cost benefit analysis to determine whether a chemical is safe based on the odds of getting cancer. But the odds of a baby that is born today will become compromised with one or more endocrine disorder are far greater than the odds of getting a malignant cancer.

This has happened because of the old chemical safety standards that predominantly focus on cancer. Those standards are deeply embedded in the language of federal health regulations allowing corporations to continue to put dangerous chemicals into their products, into the food we eat and into the air we breathe.

Chemicals are now in wide use that were never tested using assays that were never tested in the womb that evidently lead to diseases that might not appear until puberty or even later in life such as obesity and fertility, dementia, Parkinson's and Alzheimer's. Our laws have let this happen. We should have caught on. When back in the 1980s it was discovered that animals top of the food chains in the Great Lakes had been put at great risk by PCBs. Remember PCBs made possible the electrification of the rural in the US in the 1930s. They are made from benzene, a toxic byproduct of oil and natural gas and chlorine, a highly reactive gas and persistent in the environment for many years. These chemicals use these heat resisters and fire retardants had bioaccumulated 10 to 250 times or more at each level of the food web. A large number of the adult animals were unable to reproduce while the offspring of others were so compromised they never made it to maturity. And in addition, many of the mature birds had lost their parenting instincts displaying all forms of indifference in attending to the nest and the nestling.

Another chilling warning came about ten years later when it was discovered that mothers eating fish from the Great Lakes had given birth to children who had symptoms of ADHD and reduced resistance to infection. And that the intensity of the brain damage was correlated with the level of PCBs in the mother's blood that just like the birds they shared with their babies before they were born.

Well everyone thought that the PCBs were being phased out. The chemical industry had already started using bromine as a substitute for chlorine on the benzene and selling the compounds to replace the

PCBs. These brominated compounds were so universally sold and dispersed as fire retardants before the technology was developed to detect them in the environment. And then again like the PCBs were found in the animals and humans from the Arctic to the Antarctic because they too are persistent. And like the PCBs affect the brain, the immune and thyroid system, sperm count and the sperm quality.

It is incomprehensible that any corporation would go ahead after the mistakes made with chlorine and bromine and take fluorine, one of the most highly reactive chemicals in the world and a sister chemical to chlorine and bromine and begin selling tons of fluorinated compounds that persist over geological time to make fabric water proof and soil resistant and to prevent scrambled from sticking to the frying pan. These chemicals are in very personal products next to our bodies in toiletries and clothing in furniture and chair seat fabrics and in our cookware.

However, in just the past two years a cadre of independent pioneering scientists incorporating the principles of endocrinology in their research found that these fluorinated chemicals affect prenatal development, the adrenals, the pancreas, the thyroid system, the male and female gonads, and even the liver, kidney and immune systems. Yet current public health policy prevents regulators from using this information to protect us because of the way our laws are structured. Chemicals like these raise all kinds of questions about how decisions are being made within corporations and what is wrong with our toxic substance control laws.

Nonetheless there is hope. I believe that our salvations lies with the pioneers coming from the disciplines of endocrinology , immunology, biochemistry developmental and molecular biology, neurodevelopment, electron microscopy and more. Unlike toxicology their research was not designed for regulatory purpose but solely to better understand the mysteries of how we develop, reproduce, function and behave--in order words what makes us human.

They now have thousand of peer reviewed papers written about hundreds of chemicals interfering with the endocrine system , many at doses thousand of times lower than they were ever tested before.

Now back in 2003, 2 years after 911 my college age grandson after a few hours at my computer reading some of the new research findings turned to me and said that this is nothing more than industrial terrorism in the womb.

Mr. President, if you really want to go after the terrorist that pose the most imminent threat to our nation and our economy, you need to make these stealth chemicals your number one priority. Keep in mind that there is no safe level of exposure for many of these chemicals. They penetrate the body and the womb at levels so low that they have to be radio labeled so that each atom can be counted and then weight extrapolated from that to get the count

Mr. President, the best way to get out of the hole is to stop digging it deeper. And it is here where you as the head of our nation can step in and help. Keep in mind that both the ravages of climate change and the increasing endocrine related epidemics are intimately connected with the increasing use of fossil fuel and their by products. By drilling deep into the bowels of the earth, for coal, oil and natural

gas we have unwittingly and catastrophically altered the chemistry of the biosphere and the human womb. And something must be done immediately.

You are in an excellent position to change the course of this tragedy and get right to the source of the problem. Remember the Manhattan Project? The US built an atomic bomb in two years and ten months. The United States could again could bring together some of the most brilliant minds in the world , this time for peaceful purposes to provide renewable energy for the globe and significantly remove the fossil sources of chemicals that are the cause of so many disorders. And that would be a giant step to world peace! Let's face it. Human kind is in the midst of a dire health crisis that requires immediate intensive care to survive and sadly the current health related policies have failed to help to protect us.

A new level of discourse is needed immediately between science and policy. And again, Mr. President, you can fill this need from the oval office by bringing together leaders from our nation and around the world who have records of independence and integrity and those articulate scientists who understand the endocrine system and its vulnerability. Appoint them to stand on a council dedicated solely to inner space research with the platform that embodies the principles of endocrinology, the principles that encompass the very essence of life.

Charge this inner space research council to create an entirely new set of twentyfirst century of rules and policies to address the chemistry induced disorders that are dehumanizing us on a global scale.. And you must do this Mr. President to save our children's future and indeed all of our futures.

Thank you for reading this letter

Signed,

Theo Colborn