



## Environmental Toxins, Your Weight, Your Health

When it comes to your health and your weight, it appears that watching out for environmental toxins is even more important than watching calories. In 2005, Dr. Blumberg, a professor at the University of California, Irvine, submitted a grant application for money to explore the connection between environmental toxins and the global obesity epidemic. The response from the grant review board was, “*How dare you waste our time with such a ridiculous idea!*” However, two years later, Dr. Blumberg and his colleague, Dr. Grun, proved them wrong by publishing their work and giving the name **obesogens** to a variety of environmental toxins connected with causing obesity in rats and mice.

Dr. Bloomberg's first studies looked at a contaminant often found in drinking water and seafood called Tributyltin (TBT). TBT is a fungicide that was commonly used to treat boat hulls, docks, and fishing nets and also used in water cooling systems at paper, textile, and leather mills. When Dr. Bloomberg's team fed pregnant mice a single dose of TBT, their offspring were born fatter than the control groups and by 10 weeks of age, the baby mice were 15% fatter than the mice from mothers who had not been exposed. Even more troubling, the next two generations of mice were fatter as well, even though their mothers had not been exposed to TBT during gestation. According to Dr. Bloomberg, “*Once it's in the great-grandchildren — it's permanent.*” The effect, known as *epigenetic*, refers to the damage done by toxins to maternal DNA that is then passed from one generation to the next long after the original exposure has passed.

Dr. Skinner, a reproductive biologist at Washington State University, documented similar results with the pesticide, DDT. [In Dr. Skinner's study, female rats exposed prenatally to DDT did not grow up to be obese, but 50% of their great-grandchildren did, even though they had no direct DDT exposure. Although DDT has been banned in the United States since 1972, it can still be detected in the urine of pregnant woman in many parts of the country.](#)

One of the most troubling obesogens is BPA or biphenyl A. **Hundreds of studies have shown that exposure to low doses of the chemical Biphenyl A (BPA) has been linked to obesity, cancer, abnormal behavior, diabetes and heart disease, infertility, developmental and reproductive harm.** Until 2012 BPA was used in making plastics used for water bottles, baby bottles, and pacifiers. Most manufacturers voluntarily stopped using BPA in children's items when it became clear it was harmful, however it is still used in making the linings of most canned goods, medical devices, catheters, IV equipment, plastic wraps for food, and cash register receipts.

Surprisingly high levels of BPA can be found right in our kitchens. The National Workgroup for Safe Markets recently published a review called *No Silver Lining*. One of the reviewed studies measured BPA levels in canned goods that were collected from American pantries across 19 states. They found that 92 percent of the canned foods they collected contained harmful amounts of BPA. The highest level (1,140 parts per billion, believed to be the highest ever found in the U.S.) was detected in Del Monte French Style Green Beans from a pantry in Wisconsin. According to Bobbi Chase Wilding, organizing director of Clean New York, "It takes as little as one serving of canned foods to expose a person to levels of BPA that have been shown to cause harm and increased body fat in laboratory animals."

Unfortunately there are many other documented obesogens. Some of the better known include: phthalates, Teflon®, dioxins, and PCB. Tragically these obesogens are found in all kinds of common household items; wall paper, hand sanitizers, vacuum cleaner dust, non-stick cookware, stain-proof carpet, compressed wood flooring and blinds, vinyl flooring, handbags, water-proof clothing, artificial fragrances used in shampoos, body lotions, scented candles, air fresheners, nail polish, and fire-retardant fabrics used in making furniture and children's pajamas.

*Since most of the studies on obesogens have been done using animals, one has to ask, "Does this connection between obesogenic toxins and obesity apply to humans, as well?"* Dr. Robert Lustig, a professor at the University of California, answers that question by reviewing population studies that find a connection between obesogens and body weight.

One study conducted at New York University, looked at BPA levels in more than 2,800 people ages 6 to 19 years of age. Those with the highest levels of BPA in their urine were 11% heavier than those with lower amounts. Other human evidence includes increasing newborn birth weights of 200 grams per baby over the past 25 years. DEXA scans, which determine body composition, show that these are not bigger babies, but rather, the 200 grams of extra weight is all fat. *"These babies are laying down more fat cells even before they are born and, once you make a fat cell, it wants to be filled,"* says Dr. Lustig, *"These bigger, fatter babies are more likely to struggle with weight their entire adult lives."* In addition to humans, birth weights for laboratory animals (mice to monkeys) have also increased over the last 25 years, indicating these toxins most likely prevalent in the air, water supply, and soil.

Obesogens are believed to alter body fat in three ways. One, exposure during stages of rapid growth like a developing child in the womb, an infant, or during puberty causes more fat cells to be made and, therefore, increases the amount of fat that each fat cell can hold. Two, obesogens alter metabolism, causing a reduction in the number of calories burned at rest and promote more calories to be stored as fat. Lastly, obesogens may alter the effect of natural hormones that regulate hunger and fullness, causing appetite to be unregulated.

Unfortunately, there isn't one of us who hasn't already been exposed. But there are things we can all do to help decrease continued exposure which is especially important for pregnant woman, children, and young adults.

### **Strategies for Avoiding Obesogens**

- **Eat a predominately plant-based diet (some research suggests that these foods can positively alter gut bacteria and help us resist the effects of environmental toxins).**
- **Choose organic fruits and vegetables, when possible.**
- **Avoid animal fats (they tend to exacerbate the obesogenic effects of various chemicals.)**
- **Avoid canned, prepackaged, and processed foods.**
- **Purchase BPA-free brand canned foods like Eden, Muir Glenn, and some brands of Trader Joe's canned foods — check labels for BPA-free cans.**
- **Purge chemicals from households. Use natural cleaners like vinegar and baking soda.**
- **Refrain from burning anything in your home such as artificially scented candles.**
- **Use your kitchen exhaust fan when cooking — especially when frying.**
- **Ventilate your home with clean air whenever possible.**
- **Remove plastic from your lives as much as possible. Use glass, stainless steel, or ceramic containers.**
- **Minimize your exposure to carbonless paper (i.e., cash register receipts.)**
- **Purchase shampoos and cosmetics made with natural ingredients (Whole Foods, Trader Joe's, Boney's, Sprouts.)**
- **Avoid air fresheners, scented candles, etc.**
- **Use natural building materials as much as possible.**
- **Avoid flame-retardant clothing and fabrics.**
- **Avoid using aerosol products.**
- **If possible, avoid purchasing furniture or foam products that are labeled to conform to *California Technical Bulletin 117 (TB 117)* as they likely contain toxic flame retardants.**
- **Minimize or avoid the use of nonstick cookware.**
- **Dust your home with a damp rag frequently to reduce dust. A dry rag pushes dust into the air where it will be more easily inhaled.**
- **Vacuum regularly, preferably with a HEPA filtered vacuum cleaner.**