

Chemical Pollution

The Toll on America's Health

Childhood Diseases: \$55 billion Chemical pollution is responsible for all lead poisoning cases, 30 percent of asthma cases, 10 percent of neurobehavioral disorders and 5 percent of pediatric cancers, according to an authoritative 2002 study led by pediatrician Philip J. Landrigan at the Mount Sinai School of Medicine. Estimated annual costs: \$55 billion, nearly 3 percent of U.S. health care costs at the time. (Landrigan 2002).

Neurodevelopmental Disease: Up to \$83.5 billion

The cost of neurodevelopmental disease is estimated at \$81 billion to \$167 billion per year. As much as half may be due to exposure to toxic chemicals, according to a 2001 study led by economist Tom Muir of Environment Canada (Muir 2001).

Mercury-linked IQ Loss: \$8.7 billion Low-dose exposure to mercury and other neurotoxic chemical pollution can cause severe and sometimes lifelong behavioral and cognitive problems, the National Institutes for Environmental Health Sciences found (Mendola 2002). Mount Sinai researchers estimated that this loss of intelligence and productivity costs society \$8.7 billion a year (Trasande 2005). Mercury is just one of 201 chemicals known to be neurotoxic in humans (Gran Jean 2006).

Chronic Childhood Disease: 80-90 percent Mount Sinai's Landrigan calculates that genetics account for only 10-20 percent of chronic disease in childhood in the U.S. and other industrialized nations (Landrigan 2001). This includes: birth defects, the leading cause of infant death; developmental disorders such as attention deficit hyperactivity disorder and autism; asthma, which more than doubled in incidence from 1980 to 1996 (Moorman 2007); and childhood leukemia and brain cancer, on the rise since the 1970s (Gurney 1996; Linabery 2008). Landrigan's team and other specialists say many diseases, from respiratory illness to immune, thyroid and neuropsychological deficits, are likely linked to environmental toxins (Etzel 2004; Sly 2008; Wigle 2008).

Developmental Problems: 28 percent The National Academy of Sciences reported in 2000 that a combination of environmental and genetic factors cause 25 percent of American children's developmental problems, including low birth weight, neurobehavioral deficits and pre- and post-natal death. It estimated that another 3 percent are caused by toxic environmental exposures alone (NRC 2000).

Children On Medication: Up to 26 percent In 2007, 26 percent of Americans age 19 and under were taking prescription drugs for chronic health problems. The most commonly dispensed for asthma and allergy, followed by attention deficit/hyperactivity disorder (ADHD) and depression (Medco 2008). A wide range of compounds have been linked to the most common children's health problems, including 82 types of chemicals or pollution linked to asthma (Janssen 2009).

Lifetime Disability: Chemical injury to developing organs can cause lifelong disability (NRC 1993, U.S. EPA 1998). Studies link early exposure to pollutants to later problems, including: asthma and respiratory disorders; thyroid deficits; cardiovascular disease; learning disabilities, intellectual delay, loss of IQ



and earning potential; neurodegenerative conditions such as Parkinson's disease (Boyd 2008; Etzel 2004; Landrigan 2002; Muir 2001; Weiss 2000).

Indirect Costs: The EPA and the European Organization for Economic Cooperation and Development say the true costs of chronic childhood illness include: parents' foregone earnings to care for ill children; value of missed school days; children's foregone earnings; effects of reduced educational attainment on earnings; loss of labor force due to developmental disabilities. (OECD 2006, U.S. EPA 2002).

Diseases Linked to Exposures: 182 Researchers at the University of California/San Francisco and Boston Medical Center documented that 182 diseases and health problems, including birth defects, asthma, and childhood cancers, can be traced to chemical exposures (Janssen 2008).

"Serious Threat to Children": At a 2004 summit on chemicals and health in Paris, 154 prominent scientists, physicians and other experts from the U.S. and 18 other nations signed a statement asserting that chemical exposures are a "serious threat to children" (PA UNESCO 2005).

