

# **CHILDHOOD CANCER AND THE ENVIRONMENT**

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# CHILDHOOD CANCER IN THE UNITED STATES

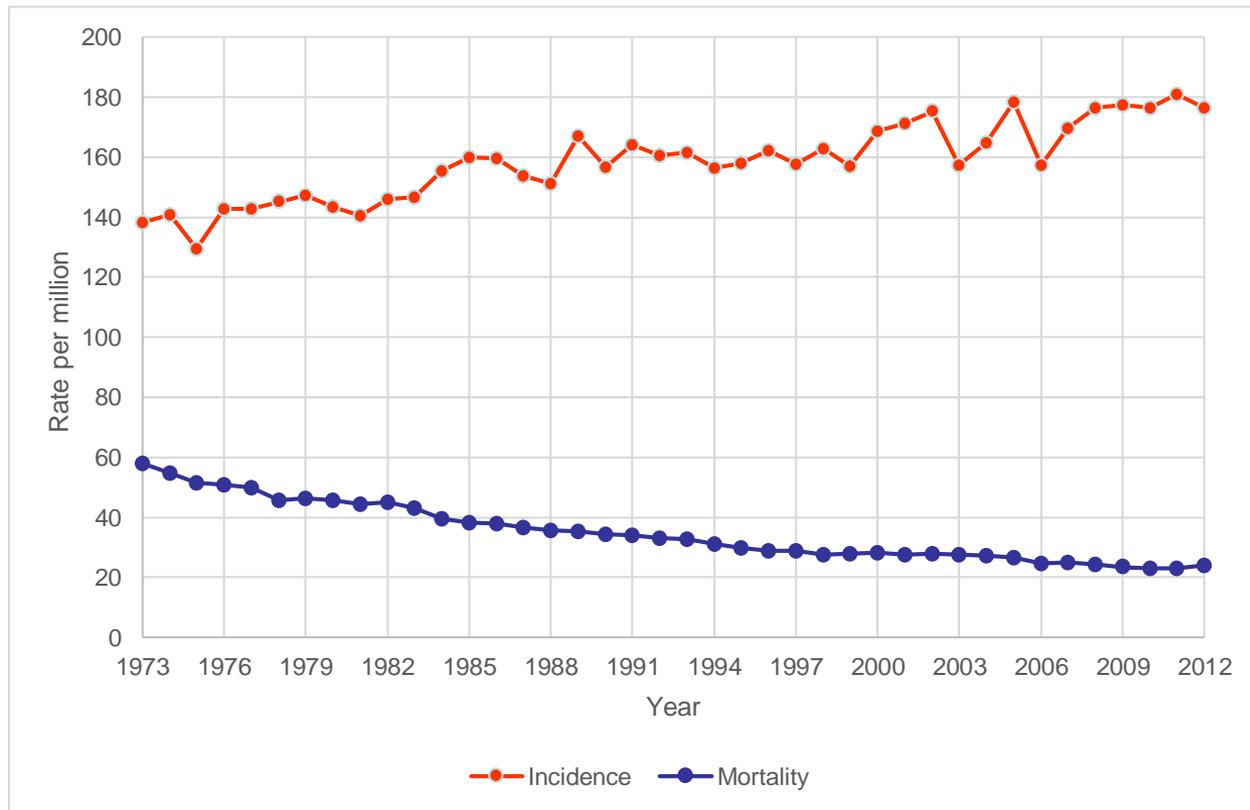
Each year, more than 16,000 children in the United States are diagnosed with cancer

Cancer is the second leading cause of death in American children - surpassed only by injuries

The Good News: Cancer deaths among American children are down because of greatly improved treatments

The Bad News: Cancer incidence is increasing for all forms of pediatric cancer and for testicular cancer in adolescents and young adults

# CHILDHOOD CANCER, UNITED STATES - AGE-ADJUSTED INCIDENCE AND MORTALITY



# CUMULATIVE PERCENT INCREASE IN CHILDHOOD CANCER INCIDENCE 1976-77 vs. 2011-12

Type of cancer	Rate per million 1976-77	Rate per million 2011-12	Total Percent Increase
All cancer types combined	139.1	187.8	<b>+35%</b>
Leukemias	37.7	45.7	<b>+21%</b>
Lymphomas	24.2	29.6	<b>+22%</b>
Brain and other CNS	22.9	33.2	<b>+45%</b>

Source of data: New York State Cancer Registry.

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# POSSIBLE CAUSES OF INCREASING INCIDENCE OF CHILDHOOD CANCER

- Genetics – too rapid
- Improved diagnosis – could have explained a one-time “bump”, but not a consistent rise of several different cancers over several decades
- “Bad luck” – not very plausible
- Environmental exposures. Most likely.

# CHILDREN TODAY ARE EXPOSED TO THOUSANDS OF MANUFACTURED CHEMICALS

- 85,000 + manufactured chemicals in commerce
- Most invented in the past 40-50 years. Never before existed
- Manufactured chemicals now found in millions of products and widely distributed in the environment
- Several hundred manufactured chemicals are now routinely detected by CDC in the bodies of most Americans, including newborn infants
- **No basic information on carcinogenicity or other toxicity is available for more than half of manufactured chemicals in current use. Most chemicals are introduced to market with no screening.**

# GROWING EVIDENCE FOR ENVIRONMENTAL CAUSATION OF CHILDHOOD CANCER

- Ionizing Radiation. X-rays in pregnancy are especially dangerous
- Prenatal DES and adenocarcinoma of vagina in young adult women
- UV radiation and skin cancer
- Solvents, especially benzene. Leukemia and lymphoma
- 1,3-Butadiene. Leukemia and lymphoma
- Pesticide exposure, especially prenatal. Childhood leukemia
- Herbicides such as glyphosate. Lymphoma (probable)
- Nitrosamine and liver cancer
- Arsenic. multiple cancers, especially lung and skin. Prenatal exposures especially dangerous
- Aspartame. Leukemia and lymphoma in animal studies. Prenatal exposures are especially dangerous
  
- **Protective effects of folic acid and breast feeding**

# NEED FOR A NATIONAL CANCER PREVENTION PLAN

- Require testing of all consumer chemicals for carcinogenicity and other toxicity before they come to market – No Data, No Market
- Conduct research to discover the environmental causes of cancer in children. Research is essential for evidence-based prevention
- Deploy a risk assessment paradigm for cancer prevention that explicitly recognizes the unique vulnerability of fetuses, infants and children.
- Act on what we know - Reduce exposures immediately to known carcinogens, including X-rays and UV radiation

**WE NEED A SECOND FRONT IN THE WAR ON  
CANCER**



**THANK YOU!**