



# Childhood Cancer Research

Finding Answers. Finding Cures.



## Relentlessly Pursuing Answers

Cancer doesn't fight fair at any age, but perhaps no cancer is more emotionally devastating than those that occur in children. The fear and uncertainty these young patients and their families face can hardly be measured, but the progress the **American Cancer Society** has made in seeking new cures for childhood cancer can. Today, a child's chance of dying from cancer is 55% less than it was in 1975. **The substantial progress in childhood cancer** is largely attributable to improvements in treatment and the high proportion of pediatric patients participating in clinical trials. The Society is deeply committed to finding new answers that will benefit every child with cancer.

An estimated 15,780 children under the age of 15 are expected to be diagnosed with cancer in 2014. Following are some of the top scientists funded by the American Cancer Society who are working to find the answers that will save more lives from pediatric cancer.

- **Patrick Brown, MD**, at Johns Hopkins University in Baltimore, Maryland, is working to identify the genetic change in one type of childhood leukemia that continues to have a very low cure rate. Those whose leukemia cells have a mutation in a specific gene called MLL would benefit from improved therapy.
- **Rene L. Galindo, MD, PhD**, at the University of Texas Southwestern Medical Center, Dallas is studying the cause of the muscle-type tumor rhabdomyosarcoma, an aggressive tumor that strikes children. By correcting the defective behavior of the genes identified in a model system, cells lose their tumor behavior. The goal is to inform the development of a new drug treatment for this tumor.
- **Rani E. George, MD, PhD**, at the Dana-Farber Cancer Institute in Boston is exploring a genetic abnormality in the cells of neuroblastoma associated with resistance to treatment with crizotinib. The ultimate goal of this study is to develop treatment strategies for this pediatric tumor.
- **Maciej Lesniak, MD**, at the University of Chicago (Illinois), is working to re-engineer a virus that causes the common cold, empowering it to attack the cells within fast-growing brain tumors.
- **Steve Lessnick, MD, PhD**, at the Huntsman Cancer Center in Salt Lake City, Utah, is exploring specific cell processes involved in Ewing's sarcoma, seeking better treatments for this disease.
- **Mollie Meffert, MD, PhD**, at Johns Hopkins University School of Medicine in Baltimore, Maryland, is studying a signaling pathway involved in brain cancer that explores how focused treatments can destroy tumor cells while minimizing negative effects on brain function.
- **Kevin Shannon, MD**, at the University of California at San Francisco, is exploring genetic changes in cells that occur in leukemia patients, re-creating these genetic reactions in the lab to seek out newly targeted therapies.

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## The Facts

An estimated **15,780** children will develop cancer and some **1,960** will lose their lives to the disease in 2014.

Approximately **1 in 285** children will be diagnosed with cancer before age 20.

Today, about **1 in 530** young adults between the ages of 20 and 39 is a childhood cancer survivor.

## Putting Answers into Action

With support from American Cancer Society funding during their careers, these pioneers laid the foundation for pediatric cancer treatments that have saved countless lives.

**1947** – Sidney Farber, MD, documented the remission of leukemia in 10 children who received the new drug aminopterin.

**1950s** – Joseph Burchenal, MD, revealed the therapeutic benefit of mercaptopurine in one-third of his young cancer patients.

**1960s** – Donald Pinkel, MD, a founding member of St. Jude Children's Research Hospital and Society grantee, introduced the concept of "total care" to combat childhood leukemia.

**1980s** – Carlo Croce, MD, pioneered the identification of chromosomal abnormalities found in childhood leukemias and lymphomas.

**1980s** – Bart Kamen, MD, PhD, developed novel drug combinations to overcome drug resistance in childhood cancers.

**2003** – Ronald DePinho, MD, unveiled the first animal model for childhood rhabdomyosarcoma, which is now being used to test powerful new drug combinations for childhood cancers.

**2013** - Joanne Wolfe, MD, PhD, earned the American Cancer Society Pathfinder in Palliative Care Award for her work to address the physical and emotional symptoms so that the care team can deal with any problem areas and improve the lives of children with serious diseases.

**AND OUR PROGRESS CONTINUES ... As of August 1, 2014, The American Cancer Society is currently supporting 49 grants, totaling nearly \$23.6 million, to find the answers that will help save more lives from pediatric cancer.**

## Other Ways the Society Fights Childhood Cancer

In addition to conducting and funding childhood cancer research, the American Cancer Society helps fight childhood cancer through education, support services, and advocacy.

The American Cancer Society Cancer Action Network<sup>SM</sup> (ACS CAN), the nonprofit, nonpartisan advocacy affiliate of the Society, advocates for childhood cancer through public policy, including pushing for increased federal funding for research, legislation to promote palliative care, and the inclusion of

patient protection provisions in the Affordable Care Act that are vitally important in the context of childhood cancer and survivorship.

The Society helps patients and their families understand their diagnosis, treatment options, how to live with the effects of cancer, and how to stay well after treatment, through our online resources, including the Cancer in Children Section, and printed publications.



We **save lives** and create more birthdays by helping you stay well, helping you get well, by finding cures, and by fighting back.

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