

RADIOLOGY INSIGHTS

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Childhood Cancer: Why Does it Happen?

By **LEENA KAMAT, MD**

Interestingly, cancer is the second leading cause of death in children less than age 14 with accidents being number one. Childhood cancers make up less than 1 percent of all cancers diagnosed each year.

So why do cancers develop in young children and how is it different from adults? Childhood cancers are not strongly linked to lifestyle or environmental risk factors, which are often implicated in adult cancers. In adults, lifestyle-related risk factors, such as being overweight, eating an unhealthy diet, not getting enough exercise, and habits like smoking and drinking alcohol play a major role in many types of cancer. But lifestyle factors usually take many years to influence cancer risk, and they are not thought to play much of a role in childhood cancers.

In recent years, scientists have begun to understand how certain changes in the DNA inside our cells can cause them to become cancer cells. There are some genes that control when our cells grow, divide into new cells, and die. Genes that help cells grow, divide, or stay alive are called oncogenes. Genes that slow down cell division or cause cells to die at the right time are called tumor suppressor genes. Cancers can be caused by DNA changes that turn on oncogenes or turn off tumor suppressor genes. Some children inherit DNA mutations from a parent that increase their risk

of certain types of cancer. But most childhood cancers are not caused by inherited DNA changes. They are the result of DNA changes that happen early in the child's life, sometimes even before birth. Every time a cell divides into two new cells, it must copy its DNA. This process isn't perfect, and errors sometimes occur, especially when the cells are growing quickly. This kind of gene mutation can happen at any time in life and is called an acquired mutation.

The most common cancers in children include leukemia, brain and spinal cord tumors, neuroblastoma, Wilms tumor, lymphoma, rhabdomyosarcoma, retinoblastoma, and bone cancer. Many cancers in children are found early, either by a child's doctor or by parents or relatives. But cancers in children can be hard to recognize right away because early symptoms are often like those caused by much more common illnesses. Symptoms may include an unusual lump or swelling, unexplained paleness and loss of energy, easy bruising, an ongoing pain in one area of the body, unexplained fever, frequent headaches, vision changes, or unexplained weight loss.

Childhood cancers are rare, and there are no widely recommended screening tests to look for cancer in children who are not at increased risk. Because of major treatment advances in recent decades, more than 80 percent of children with cancer now survive 5 years or more. Overall, this is a huge increase since the mid-1970s,



when the 5-year survival rate was about 58 percent. Still, survival rates vary depending on the type of cancer and other factors.

The radiologists from Radiology Specialists of Florida at Florida Hospital are very well trained and experienced. We have radiologists specifically trained in pediatric imaging who use imaging techniques to diagnose abnormalities in children and assist with staging of cancer. We keep up to date on the latest technology and information so that we can offer patients the best care. The Florida Hospital Care Network delivers seamlessly connected healthcare services for all ages. For more information visit Somedaystartstoday.com.



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