

Division of Chronic Disease, Primary Care,
and Rural Health



Childhood Cancer



Indiana
Department
of
Health



Bottom Line

Childhood cancer is rare, only representing approximately 1 percent of all new cancer diagnoses in the US.¹ Although uncommon, cancer is the second leading cause of death among children aged one to 14 years, exceeded only by accidents.² On average, from 2016 to 2020, 309 cases of cancer and 37 cancer deaths occurred each year among Indiana children aged zero to 19 years [Table 7]. In general, childhood cancer trends in Indiana are similar to nationwide trends. For most cases of childhood cancer, the cause is unknown.³

Table 7. Burden of Cancer Among Children Aged Zero to 19 Years* - Indiana, 2016-2020*

	Average number of cases per year	Rate per 100,000 children	Number of cases	Rate per 100,000 children
	(2016-2020)	(2016-2020)	(2020)	(2020)
Indiana Incidence	309	17.5	299	17.1
Indiana Deaths	37	2.1	38	2.2

*Age-adjusted to the US 2000 Standard Population.

Source: Indiana State Cancer Registry

The incidence rate of cancer among Indiana children aged zero to 19 years from 2016-2020 was 17.5 cases per 100,000 children, which was similar to the national rate of 21.2 cases per 100,000 children for 2013-2017.³ In Indiana, the childhood cancer mortality rate was 2.1 deaths per 100,000 children, compared to the U.S. mortality rate of 1.9 deaths per 100,000 children.³

Using the International Classification of Childhood Cancer system, the most common cancer types diagnosed among Indiana children aged zero to 14 years were leukemias and brain tumors. In children aged 15 to 19 years, the most common cancer types were epithelial cancers (cancers that develop from the cellular covering of internal and external body surfaces or related tissues in the skin, hollow viscera, and other organs), brain cancers, and Lymphomas.³

Who Most Often Gets Childhood Cancer?

- **White children** – During 2016 to 2020 in Indiana, white children had a significantly higher incidence rate than Black children (18.4 versus 11.8 per 100,000 children, respectively) [Figure 17]. This difference in rates between races is also seen nationally. The reason for these differences is unknown.^{1,3}
- **Children born with certain genetic disorders or familial syndromes** – Children with a familial cancer predisposition syndrome, inherited immunodeficiency, certain genetic syndromes, and chromosomal abnormalities are at greater risk for developing various types of childhood cancers.⁴

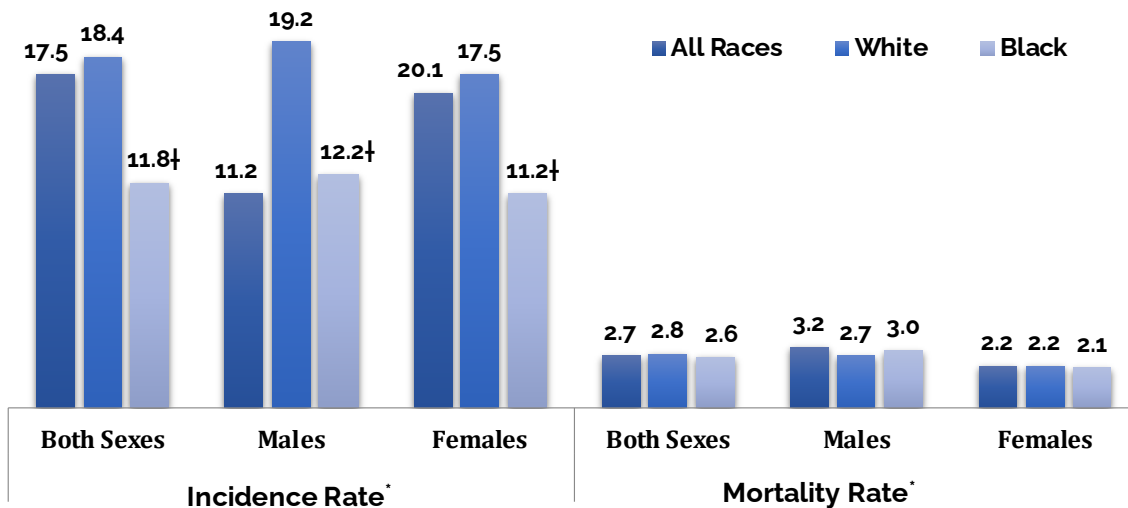


- Males born with undescended testes are at greater risk for testicular cancer.⁴

Additional risk factors include:⁴

- Radiation exposure, especially prenatally (including x-rays)
- Tanning bed or sun exposure increases the risk of melanoma, one of the more common cancers among teenagers
- Prior chemotherapy with certain agents
- Infection with the Epstein-Barr virus is associated with certain types of lymphoma

Figure 17. Incidence and Mortality (death) Rates Among Children Aged Zero to 19 Years by Sex and Race* - Indiana, 2016-2020



†Rate is significantly lower (P<.05) among Blacks than among Whites

Source: Indiana State Cancer Registry

*Age-adjusted to the U.S. 2000 standard population

Can Childhood Cancer Be Detected Early?

Early symptoms are usually nonspecific. Parents should ensure that children have regular medical checkups and should be aware of any unusual symptoms that persist.

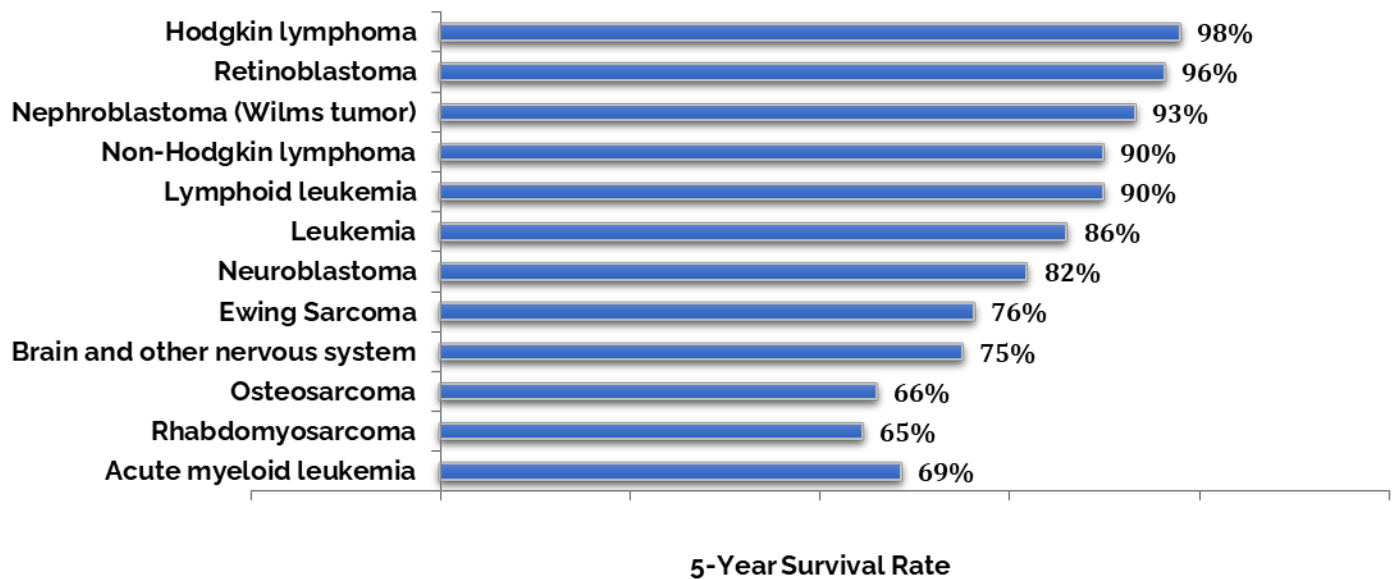
What Factors Influence Childhood Cancer Survival?

According to the National Cancer Institute, overall, U.S. childhood deaths due to cancer have dropped more than 50 percent since 1975 due to improved treatment options and participation in clinical trials.⁵ The five-year survival rate for childhood cancers is now 84



percent.² Rates vary considerably depending on cancer type, patient age, and other factors. Within the major categories, cancer subtypes might vary in response to treatment or survival characteristics [Figure 18].

Figure 18. Five-Year Survival Rates for the Most Common Childhood Cancers- United States, 2013-2019*



The earlier a cancer is diagnosed and treated, the better. Childhood cancers can be treated by a combination of therapies (surgery, radiation, and chemotherapy) chosen based on the type and stage of cancer. Treatment is coordinated by a team of experts, including pediatric oncologists, pediatric surgeons, radiation oncologists, pediatric nurses, social workers, psychologists, and others. Because these cancers are uncommon, outcomes are more successful when treatment is managed by a children’s cancer center.¹

Survivors of childhood cancer might experience treatment-related side effects. Information for survivors of childhood cancer is available at [Children’s Oncology Group](#).

Be aware and take charge!

Childhood cancer is rare, but your child should be examined by a healthcare provider if you notice any of these potential cancer-related signs and symptoms:

- C**ontinued, unexplained weight loss
- H**eadaches, often with early morning vomiting
- I**ncreased swelling or persistent pain in bones, joints, back, or legs
- L**ump or mass, especially in the abdomen, neck, chest, pelvis, or armpits



Development of excessive bruising, bleeding, or rash

Constant infections

A whitish color behind the pupil

Nausea that persists or vomiting without nausea

Constant tiredness or noticeable paleness

Eye or vision changes that occur suddenly and persist

Recurrent or persistent fevers of unknown origin



References

1. American Cancer Society. Key Statistics for Childhood Cancers. Accessed at <https://www.cancer.org/cancer/types/cancer-in-children/key-statistics.html> April 10, 2024.
2. American Cancer Society. Cancer Facts & Figures 2024. Atlanta, GA: American Cancer Society; 2024.
3. Indiana State Cancer Registry, 2024.
4. McLaughlin, CC.(2008). Childhood cancer. In Fundamentals of Cancer Epidemiology, 2nd ed, Nasca, PC, and Pastides, H. editors. Jones and Bartlet Publishers, Sudbury, MA.
5. National Cancer Institute. Cancer in Children and Adolescents. Accessed at <https://www.cancer.org/cancer/types/cancer-in-children/key-statistics.html> April 10, 2024.

