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The full report is titled “A Model-Based Estimate of Cumulative Excess Mortality in Survivors of Childhood Cancer.” It is in the 6 April 2010 issue of *Annals of Internal Medicine* (volume 152, pages 409-417). The authors are J.M. Yeh, L. Nekhlyudov, S.J. Goldie, A.C. Mertens, and L. Diller.

Decreased Life Expectancy of Childhood Cancer Survivors

What is the problem and what is known about it so far?

In the United States, more than 10 000 children each year receive a diagnosis of cancer. Fortunately, cancer treatments have improved. More than 80% of children who receive a diagnosis of cancer survive at least 5 years after the diagnosis, and many live to adulthood. However, cancer treatments have side effects that cause serious health problems, such as heart conditions or secondary cancer. As more children survive cancer, more information is needed about their health over their lifetimes.

Why did the researchers do this particular study?

To estimate the life expectancy of childhood cancer survivors.

Who was studied?

The researchers studied a hypothetical group of patients aged 15 years who were still alive after receiving a diagnosis of cancer and treatment when they were aged 10 years. They used hypothetical patients because information on real long-term childhood cancer survivors is limited.

How was the study done?

The researchers developed a computer model to estimate what would happen over the lifetimes of this hypothetical group of patients. They based the computer model on information from real patients who were followed for shorter periods to predict what would happen over the survivors' lifetimes. They looked at health outcomes, such as the likelihood of dying of the original cancer, secondary cancer, or other health conditions related to treatment of the original cancer. They compared the life expectancy of childhood cancer survivors with those in the general population (persons without childhood cancer).

What did the researchers find?

The researchers estimated that patients aged 15 years who had survived cancer diagnosed at aged 10 years lived, on average, about 10 years less than the general population. The loss in life expectancy was different for different types of cancer. Survivors of kidney cancer died about 4 years earlier than the general population, whereas survivors of bone and brain cancer died about 18 years earlier.

What were the limitations of the study?

The computer model was based on information from patients who were treated 20 to 40 years ago. The results may not apply to people who receive more modern childhood cancer treatments.

What are the implications of the study?

People who have survived childhood cancer have a shorter life expectancy than the general population. We need to develop better treatments for both the original cancer and for treatment-related health problems.