

Very high prevalence of chronic health conditions among adult survivors of childhood cancer

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In an analysis that included more than 1,700 adult survivors of childhood cancer, researchers found a very high percentage of survivors with 1 or more chronic health conditions, with an estimated cumulative prevalence of any chronic health condition of 95 percent at age 45 years, according to a study in the June 12 issue of *JAMA*.

"Curative therapy for pediatric malignancies has produced a growing population of adults formerly treated for [childhood cancer](#) who are at risk for health problems that appear to increase with aging. The prevalence of cancer-related toxic effects that are systematically ascertained through formal clinical assessments has not been well studied. Ongoing clinical evaluation of well-characterized cohorts is important to advance knowledge about the influence of aging on cancer-related morbidity and mortality and to guide the development of health [screening recommendations](#) and health-preserving interventions," according to background information in the article.

Melissa M. Hudson, M.D., of St. Jude Children's Research Hospital and the University of Tennessee College of Medicine, Memphis, and colleagues conducted a study to determine, through systematic comprehensive medical assessment, the general health status of long-term survivors of childhood cancer and the prevalence of treatment complications following predisposing [cancer treatment](#)-related exposures. The presence of health outcomes was ascertained using

systematic exposure-based medical assessments among 1,713 adult (median [midpoint] age, 32 years) survivors of childhood cancer (median time from diagnosis, 25 years) enrolled in the St. Jude Lifetime Cohort Study since October 1, 2007, and undergoing follow-up through October 31, 2012. The participants were diagnosed and treated between 1962 and 2001. The primary measured outcomes were the age-specific cumulative prevalence of adverse outcomes by organ system.

The researchers found that impaired pulmonary, auditory, cardiac, endocrine, and nervous system function were most prevalent (detected in 20 percent or more of participants at risk). The crude prevalence of adverse health outcomes was highest for pulmonary (abnormal pulmonary function, 65.2 percent), auditory (hearing loss, 62.1 percent) endocrine or reproductive (any endocrine condition, such as hypothalamic-pituitary axis disorders and male germ cell dysfunction, 62.0 percent), cardiac (any cardiac condition, such as heart valve disorders, 56.4 percent), and neurocognitive (neurocognitive impairment, 48.0 percent) function.

"Among survivors at risk for adverse outcomes following specific cancer treatment modalities, the estimated cumulative prevalence at age 50 years was 21.6 percent for cardiomyopathy, 83.5 percent for heart valve disorder, 81.3 percent for pulmonary dysfunction, 76.8 percent for pituitary dysfunction, 86.5 percent for hearing loss, 31.9 percent for primary ovarian failure, 31.1 percent for Leydig cell failure, and 40.9 percent for breast cancer," the authors write.

Abnormalities involving hepatic, skeletal, renal, and hematopoietic function were less common (less than 20 percent).

"In this clinically evaluated cohort, 98.2 percent of participants had a chronic health condition," the researchers note. "The overall cumulative prevalence of a chronic condition was estimated to be 95.5 percent by

age 45 years and 93.5 percent 35 years after cancer diagnosis." At age 45 years, the estimated cumulative prevalence was 80.5 percent for a serious/disabling or life-threatening chronic condition.

"In summary, this study provides global and age-specific estimates of clinically ascertained morbidity in multiple organ systems in a large systematically evaluated cohort of long-term survivors of childhood cancer. The percentage of survivors with 1 or more [chronic health conditions](#) prevalent in a young adult population was extraordinarily high. These data underscore the need for clinically focused monitoring, both for conditions that have significant morbidity if not detected and treated early, such as second malignancies and heart disease, and also for those that if remediated can improve quality of life, such as hearing loss and vision deficits."

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