

Cancers Affecting Adolescents and Young Adults (AYAs)

Nearly 65,600 adolescents and young adults (AYAs) aged 15–39 were diagnosed with cancer in 2005.¹ The incidence of specific cancer types varies dramatically across the AYA age continuum. For example, leukemias, lymphomas, and central nervous system (CNS) tumors are prevalent in younger AYAs; in those aged 20–39, these cancers decline in frequency while other cancers such as cervical, colorectal, and particularly breast cancer, comprise a growing share of AYA cancers.²

Mortality and Survival

Cancer is the leading cause of disease-related deaths in the AYA population; it is the most common disease-related cause of death among females and is second only to heart disease among males.³ In the AYA age group, only homicide, suicide, and unintentional injury claim more lives than cancer.

AYA survival varies by race and ethnicity. White, non-Hispanic AYAs have the highest cancer incidence and the highest overall 5-year survival rates. American Indian and Alaskan Native AYAs have the lowest cancer incidence rates, but they also have poor survival rates. African Americans have intermediate incidence rates and the lowest 5-year survival rates across the age range.

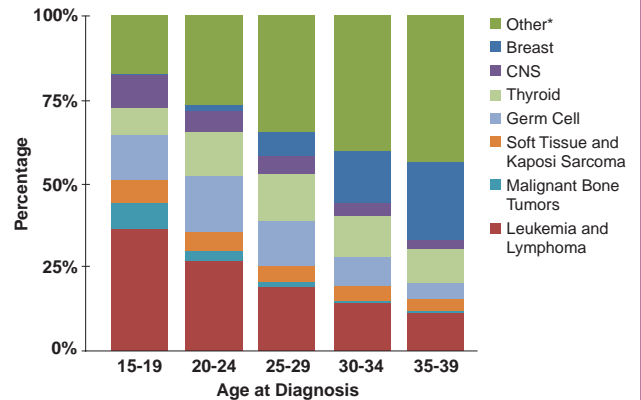
Compared with younger and older age groups, AYAs have experienced little or no improvement in cancer survival rates in more than two decades. Several factors might account for the lack of improved outcomes in AYAs with cancer, including limited access to care and insurance coverage, delayed diagnosis of primary cancers, inadequate treatment practices and settings, poor understanding of the biology and etiology distinguishing the cancers in this population, inadequate collection of patients and patient data, low numbers of clinical trials and poor participation, unique psychosocial and supportive care needs, inconsistent treatment and follow-up care guidelines, and limited emphasis on prevention and early detection.

¹American Cancer Society.

²Data from the Surveillance, Epidemiology, and End Results (SEER) Program (<http://seer.cancer.gov>).

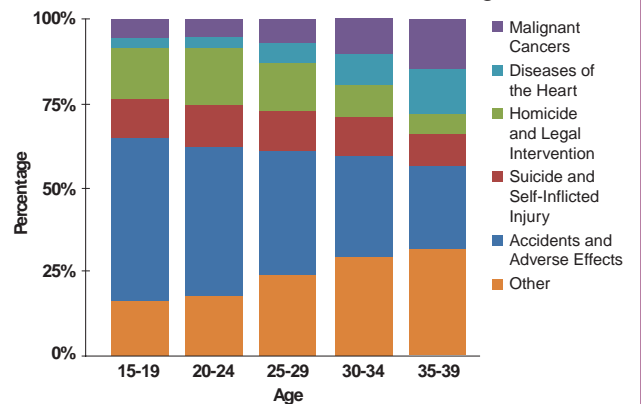
³Total U.S. deaths in 2005, ages 15–39, from the SEER Program and the National Center for Health Statistics.

Common Types of Cancer Afflicting AYAs (% cases/disease)



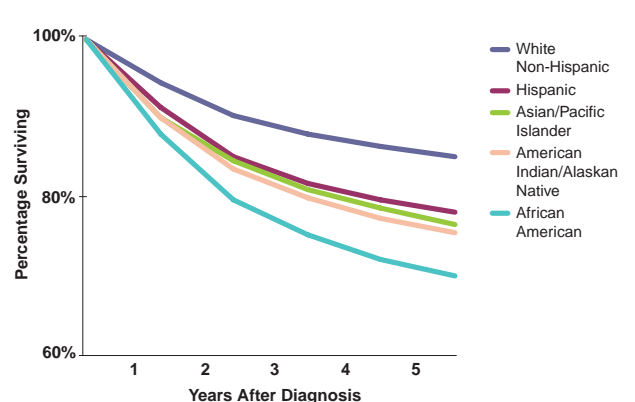
*Includes melanoma, colorectal, cervical, and other less prevalent cancers. Data source: SEER 17, 2001–2005, ages 15–39.

Common Causes of Death* Among AYAs



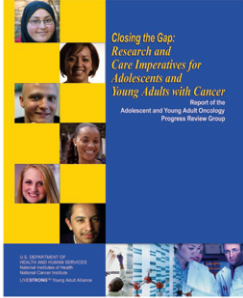
*U.S. deaths, 2005. Underlying mortality data provided by the National Center for Health Statistics.

5-Year Survival of AYAs with Cancer



Hispanics can overlap with African Americans, Asians/Pacific Islanders, or American Indians/Alaskan Natives. Analysis was based on any death from any cancer site in both sexes and all races.

Planning for the Future and Moving Forward



In 2005–2006, the National Cancer Institute (NCI) partnered with the Lance Armstrong Foundation (LAF) to address the special research and cancer care needs of AYAs and solicit recommendations for a national agenda to improve cancer prevention, early detection, diagnosis, treatment (including survivorship care), and outcomes among these patients.

The group's report, *Closing the Gap: Research and Care Imperatives for Adolescents and Young Adults with Cancer*, can be found at: http://planning.cancer.gov/disease/AYAO_PRG_Report_2006_FINAL.pdf

In November 2006, representatives from NCI and the LAF's LIVESTRONG Young Adult Alliance met to develop strategies for transitioning the above recommendations into reality. These strategies, detailed in the 2007 report *Closing the Gap: A Strategic Plan*¹, include:

- Establish a strong scientific foundation to support the biological differences in tumors found in AYAs.
- Leverage completed, ongoing, and new clinical trials to obtain knowledge about cancer in AYAs.
- Increase health care provider awareness of AYA issues by working with professional societies and advocacy organizations.
- Facilitate the development of AYA standards for, and availability of, patient navigators and health coaches.

¹ <http://www.livestrong.org/atf/cf/%7BD0794917-422C-499C-9C48-9ED3DDC42947%7D/LAF%20YAA%20Report.pdf>

Examples of NCI Activities Relevant to AYA Cancer

- The International Ewing Sarcoma Study is testing a promising new agent, an investigational monoclonal antibody called R1507, against Ewing sarcoma. This rare cancer is common in children and AYAs. http://www.cancer.gov/ncicancerbulletin/NCI_Cancer_Bulletin_031808/page3
- The Phase II Study of Combination Chemotherapy in Adolescents and Young Adults with Newly Diagnosed Acute Lymphoblastic Leukemia (ALL) is studying the responses of AYAs with newly diagnosed ALL to a pediatric chemotherapy regimen administered by adult hematologists and oncologists. <http://www.cancer.gov/clinicaltrials/CALGB-10403>
- The Chronic Illness Self-Management in Children and Adolescents program supports research to improve disease management behaviors and quality of life in children and adolescents with chronic illnesses, including cancer. <http://grants.nih.gov/grants/guide/pa-files/PA-07-097.html>

Selected Advances in AYA Cancer Research

- A recent study that compared the molecular, epidemiological, and therapeutic outcomes in AYAs to those of younger and older people showed that AYAs' malignant disease biology might be distinct. <http://www.ncbi.nlm.nih.gov/pubmed/18354417>
- A combination of the experimental drug mifamurtide and chemotherapy was more effective than chemotherapy alone in patients with osteosarcoma, which is common in AYAs. <http://www.cancer.gov/clinicaltrials/results/osteosarcoma0308>
- Leisure-time physical activity is associated with a reduced risk of breast cancer in AYAs, especially in premenopausal women who regularly participated in high amounts of physical activity both as adolescents and young adults. <http://www.ncbi.nlm.nih.gov/pubmed/18477801>