

Kaposi Sarcoma

Incidence and Mortality Rate Trends

Kaposi sarcoma (KS) is a soft-tissue sarcoma that affects the skin, oral cavity, esophagus, and anal canal. “Classic” KS is rare and found mainly in older men of Mediterranean or Jewish heritage. Immunosuppressed individuals are also at increased risk for KS. The incidence of KS rose sharply in the 1980s with the emergence of acquired immune deficiency syndrome (AIDS), and it is now the most common tumor associated with human immunodeficiency virus (HIV) infection. Scientists have identified a virus, called Kaposi sarcoma-associated herpes virus (KSHV) or human herpesvirus 8 (HHV-8), as the cause of KS.

The incidence of KS began to drop dramatically in the mid-1990s and has remained relatively stable since 2000. Men are much more likely to develop KS than women, particularly between the ages of 25 and 59. Since 2000, incidence rates have been highest in African Americans and lowest in Asians/Pacific Islanders.

Source for incidence and mortality data: Surveillance, Epidemiology, and End Results (SEER) Program and the National Center for Health Statistics. Additional statistics and charts are available at <http://seer.cancer.gov/>.

Trends in NCI Funding for Kaposi Sarcoma Research

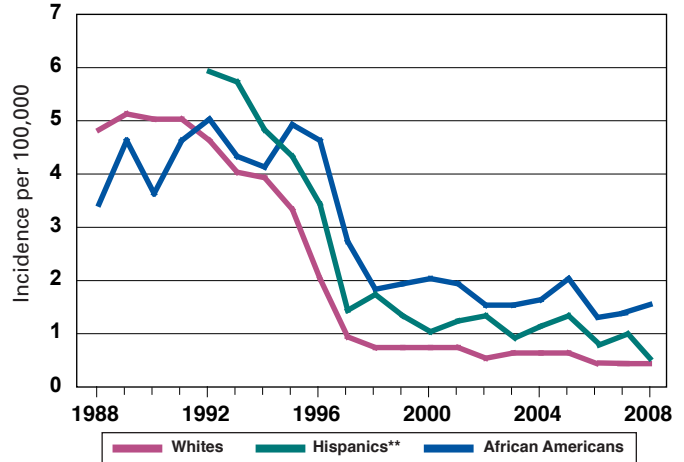
The National Cancer Institute’s (NCI) investment¹ in KS research increased from \$25.8 million to \$27.0 million between fiscal years (FY) 2006 and 2008 before decreasing to \$22.4 million in FY 2010. In addition, NCI supported \$11 million in Kaposi sarcoma research in FY 2009 and 2010 using funding from the American Recovery and Reinvestment Act (ARRA).²

Source: NCI Office of Budget and Finance (<http://obf.cancer.gov>).

¹ The estimated NCI investment is based on funding associated with a broad range of peer-reviewed scientific activities. For additional information on research planning and budgeting at the National Institutes of Health (NIH), see <http://www.nih.gov/about/>.

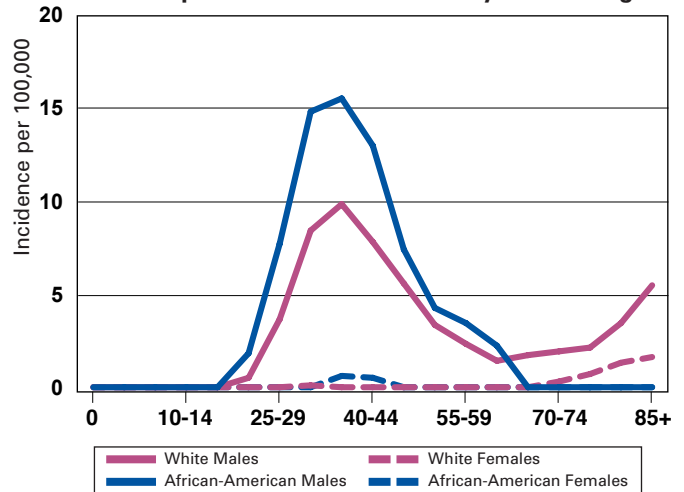
² For more information regarding ARRA funding at NCI, see <http://www.cancer.gov/aboutnci/recovery/recoveryfunding>.

U.S. Kaposi Sarcoma Incidence*

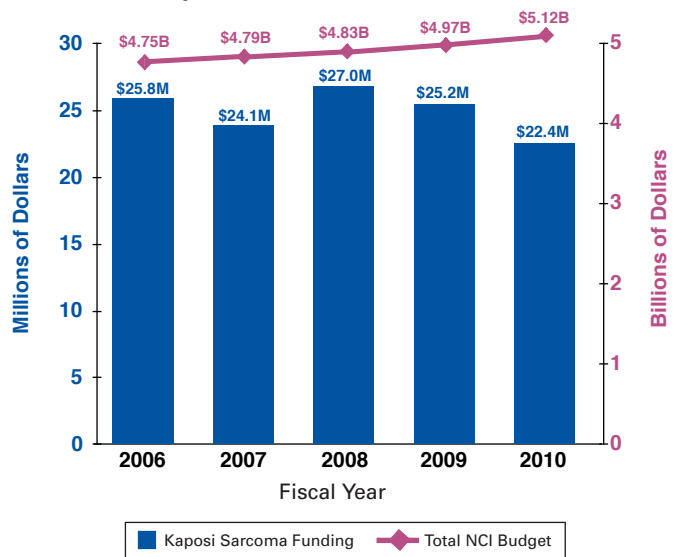


* Insufficient data available for time trend analysis for American Indians/Alaska Natives or Asians/Pacific Islanders.
 ** Incidence data not available before 1992.

U.S. Kaposi Sarcoma Incidence by Sex and Age



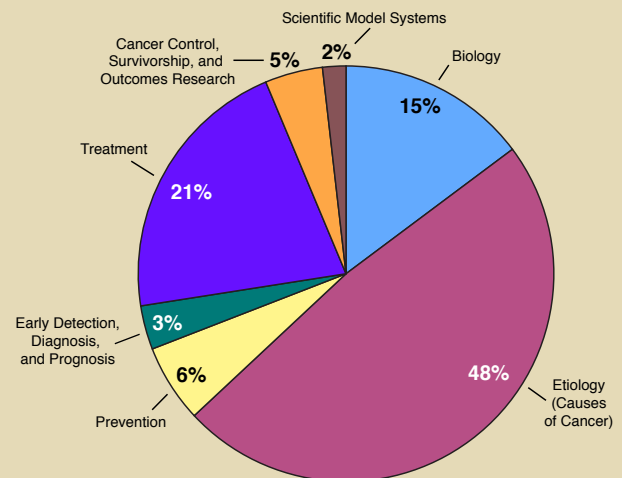
NCI Kaposi Sarcoma Research Investment



Examples of NCI Activities Relevant to Kaposi Sarcoma

- The **Kaposi Sarcoma Working Group**, part of the **AIDS Malignancy Consortium**, supports studies on new treatment options for KS and develops comprehensive procedures for evaluation of KS response data. <http://pub.emmes.com/study/amc/public/ResearchAreas/kaposisarcoma/Kaposisarcoma.html>
- The **Office of HIV and AIDS Malignancy** coordinates and oversees HIV/AIDS-related research throughout NCI and oversees several programs in HIV/AIDS and AIDS-related cancer. <http://oham.cancer.gov/>
- NCI's **Infections and Immunoepidemiology Branch** conducts epidemiologic research on infectious agents and cancer, including KS and other HIV/AIDS-associated malignancies. Projects include the assessment of the effects of smoking, other environmental exposures, and immunity- and inflammation-related genes on the risk of KSHV infection and the exploration of the genomic integrity of KS. <http://dceg.cancer.gov/iib/research/ks>
- The **Cancer Etiology Branch** supports research programs dealing with biological, chemical, and physical agents that are known or possible carcinogens. The research program in HIV- and AIDS-associated malignancies supports investigations of the role of HIV and other viruses as etiologic agents of AIDS-associated cancers and how their interactions affect carcinogenesis and progression. <https://dcb.nci.nih.gov/branches/ceb/Pages/Home.aspx>
- The **Center of Excellence in HIV/AIDS and Cancer Virology** facilitates and communicates advances in antiviral and immunologic approaches for preventing and treating HIV infection, AIDS-related malignancies, and cancer-associated viral diseases. <http://ccr.ncifcrf.gov/initiatives/CEHIV/>
- NCI's **Research on Malignancies in the Context of AIDS** program funds studies on advancing the understanding of

NCI Kaposi Sarcoma Research Portfolio



Percentage of Total Dollars by Scientific Area
Fiscal Year 2010

Data source: The NCI Funded Research Portfolio. Only projects with assigned scientific area codes are included. A description of relevant research projects can be found on the NCI Funded Research Portfolio Web site at <http://fundedresearch.cancer.gov>

the risk, development, progression, diagnosis, and treatment of malignancies observed in patients with HIV or AIDS. <http://grants.nih.gov/grants/guide/pa-files/PA-10-291.html> and <http://grants.nih.gov/grants/guide/pa-files/PA-10-290.html>

- NCI supports studies that explore **Biomarkers of Infection-Associated Cancers**, including KS. <http://grants.nih.gov/grants/guide/pa-files/PA-11-158.html>
- The **NCI AIDS-Related Cancers Home Page** provides up-to-date information on treatment options for AIDS-related cancers such as KS. <http://www.cancer.gov/cancertopics/types/AIDS/>

Selected Advances in Kaposi Sarcoma Research

- NCI scientists have uncovered a **new inflammatory condition** that occurs in some people infected with HIV and KSHV. <http://www.cancer.gov/newscenter/pressreleases/2010/InflammatorySyndromeAIDS> and <http://www.ncbi.nlm.nih.gov/pubmed/20583924>
- High incidence of KS in equatorial Africa corresponds with **prevalence of HHV-8 infection** in that region. <http://www.ncbi.nlm.nih.gov/pubmed/20143397>
- A study has shown in a cell model that a **natural plant compound called celastrol** may have potential therapeutic activity against KSHV. <http://www.ncbi.nlm.nih.gov/pubmed/21159881>
- Researchers have demonstrated in a cell model that **triggering oxidative stress** could be a new strategy for destroying KSHV-infected tumor cells. <http://www.ncbi.nlm.nih.gov/pubmed/21068240>