NATIONAL CANCER INSTITUTE

A Snapshot of Lymphoma

Incidence and Mortality Rate Trends

Lymphoma, including Hodgkin lymphoma and non-Hodgkin lymphoma (NHL), represents approximately 5 percent of all cancers in the United States. Although Hodgkin lymphoma is the better known form, the incidence of Hodgkin lymphoma is much lower than that of NHL.

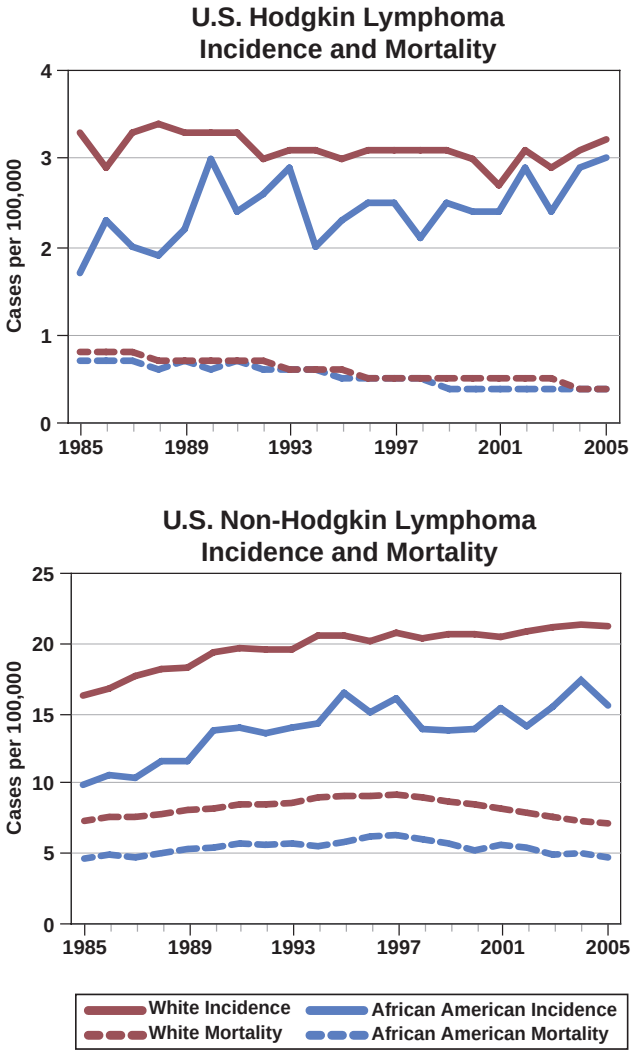
Due to improvements in the treatment of Hodgkin lymphoma, the mortality rate has decreased significantly over the past 25 years. Although the incidence rate for whites has declined slightly during this period, rates for African Americans have increased.

The NHL incidence rate has increased significantly in the past two decades. Incidence and mortality rates for NHL are higher for whites than African Americans and other ethnic groups.

It is estimated that approximately $4.6 billion[1] is spent in the United States each year on treatment for lymphoma.

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/.

[1]Cancer Trends Progress Report (http://progressreport.cancer.gov), in 2004 dollars, based on methods described in *Medical Care* 2002 Aug; 40 (8 Suppl): IV-104–17.

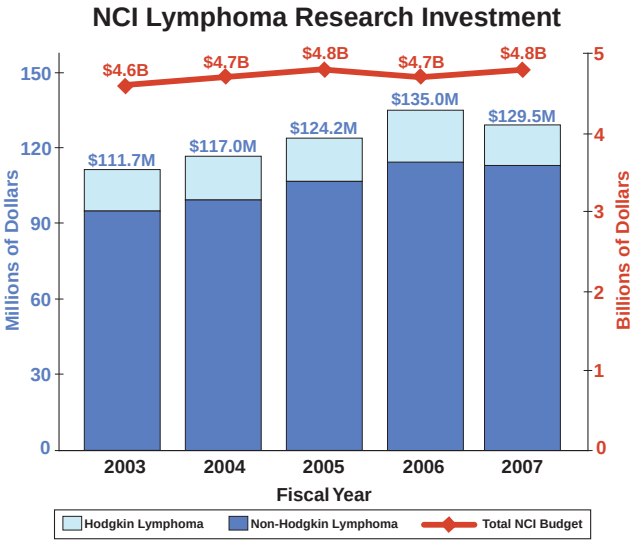


Trends in NCI Funding for Lymphoma Research

The National Cancer Institute's (NCI's) investment[2] in lymphoma research increased from $111.7 million in fiscal year 2003 to $129.5 million in fiscal year 2007.

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

[2]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, see http://www.nih.gov/about/.

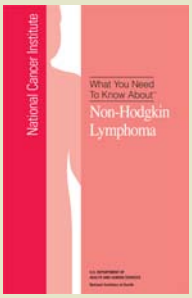


Developed by NCI's Office of Science Planning and Assessment (OSPA) with assistance from SAIC. Snapshots can be found online at: http://planning.cancer.gov/disease/snapshots.shtml.

Examples of NCI Activities Relevant to Lymphoma

- Four lymphoma-specific **Specialized Programs of Research Excellence (SPOREs)** are moving results from the laboratory to the clinical setting. SPORE researchers are evaluating novel lymphoma therapies (including immunotherapies), studying leukemia biology and epidemiology, and identifying lymphoma biomarkers. http://spores.nci.nih.gov/current/lymphoma/lymphoma.html
- Members of the **International Lymphoma Epidemiology (InterLymph) Consortium**, an international group of epidemiologists researching the cause of NHL, share data and biological samples for the analysis of gene-environment interactions. http://epi.grants.cancer.gov/InterLymph/
- The U.S. Food and Drug Administration (FDA), NCI, and the Centers for Medicare and Medicaid Services (CMS) jointly support the **Oncology Biomarker Qualification Initiative (OBQI)** to improve cancer therapy development and cancer outcomes through biomarker development and evaluation. The first OBQI project will assess whether fluorodeoxyglucose-positron emission tomography (FDG-PET) scanning predicts tumor response in patients with NHL. This trial is active and currently recruiting participants. http://www.cancer.gov/newscenter/pressreleases/OBQI
- NCI's **Cutaneous T Cell Lymphoma (CTCL) Working Group** promotes the dissemination of new CTCL research and provides advice on the treatment of patients referred to NCI with complex or advanced CTCL. http://ccr.cancer.gov/faculties/faculty.asp?facid=456

What You Need to Know About™ Hodgkin and Non-Hodgkin Lymphoma



NCI publishes the following booklets on possible causes, symptoms, diagnosis, treatment, and rehabilitation: *What You Need to Know About™ Hodgkin Lymphoma* and *What You Need to Know About™ Non-Hodgkin Lymphoma*. These booklets also have information to help patients cope with these cancers. Risk factors for Hodgkin and non-Hodgkin lymphoma include certain viral infections, a weakened immune system, age, and family history.

http://www.cancer.gov/cancertopics/wyntk/hodgkin
http://www.cancer.gov/cancertopics/wyntk/non-hodgkin-lymphoma

Information specialists can also answer questions about cancer at 1-800-4-CANCER.

- The **Lymphoma/Leukemia Molecular Profiling Project (LLMPP)** is using molecular biology to classify lymphomas and guide patient prognosis and therapy. LLMPP investigators are applying their findings in a clinical trial to determine whether gene chip technology can be used to group patients into appropriate treatment regimens. http://llmpp.nih.gov/
- The **Lymphoma and Hodgkin Disease Home Pages** direct visitors to up-to-date information on lymphoma treatment, prevention, genetics, causes, screening, testing, and other topics. http://cancer.gov/cancerinfo/types/non-hodgkins-lymphoma and http://cancer.gov/cancerinfo/types/hodgkinslymphoma

Selected Advances in Lymphoma Research

- A large, retrospective cohort study found that U.S. veterans infected with the hepatitis C virus have a higher risk of developing certain lymphomas. http://www.cancer.gov/ncicancerbulletin/NCI_Cancer_Bulletin_051507/page4#c
- NCI researchers found that mutations in the signaling pathway gene CARD11 can cause diffuse large B-cell lymphoma (DLBCL). http://www.cancer.gov/newscenter/pressreleases/CARD11Staudt
- The ATM kinase protein, which plays a crucial role in repairing double-strand DNA breaks, also helps prevent cells with this type of DNA damage from dividing. This blocks the passage of persistent DNA damage to daughter cells, which could otherwise lead to the development of lymphoma. http://www.cancer.gov/newscenter/pressreleases/ATMlymphoma
- NCI researchers successfully used genomic technology to reliably distinguish Burkitt lymphoma from DLBCL. http://plan.cancer.gov/Connecting_Science_and_Clinical_Practice_Lymphoma.htm