

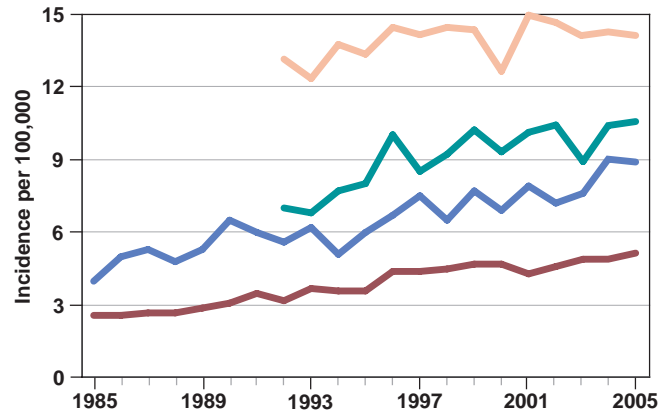
Incidence and Mortality Rate Trends

Primary liver and bile duct cancers are the fifth most common cause of cancer death in men and the ninth most common cause of cancer death in women. More than 90 percent of all cases occur in men and women age 45 or older. Liver cancer is closely associated with hepatitis virus infections, especially hepatitis B.

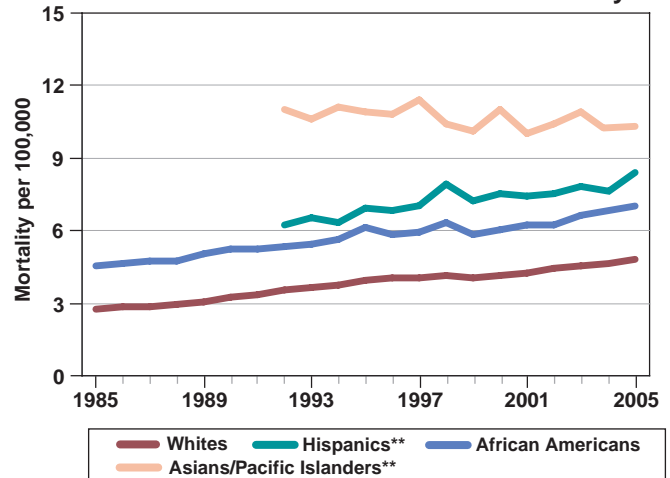
The incidence and mortality rates for these cancers have increased in all races and both sexes in the past two decades. Incidence and mortality rates are more than twice as high in men as in women; they are also about twice as high in African Americans as in whites. Although Hispanics, Asian Americans, and Pacific Islanders have lower incidence rates for cancer in general than whites, they have higher rates of cancers associated with infection, including liver cancer. For example, the incidence rates of liver cancer in Hispanic men and women are twice as high as in whites.

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/>.

U.S. Liver and Bile Duct Cancers Incidence*



U.S. Liver and Bile Duct Cancers Mortality*



*Significant data for American Indians/Alaskan Natives not available.
**Data for Hispanics and Asians/Pacific Islanders not available before 1992.

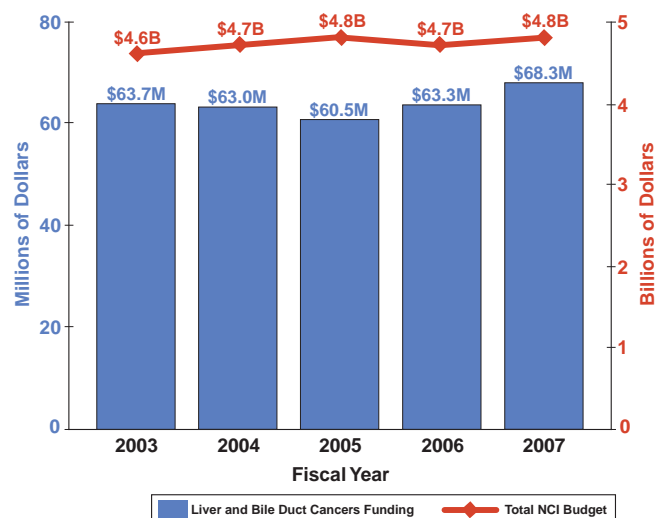
Trends in NCI Funding for Liver and Bile Duct Cancers Research

The National Cancer Institute's (NCI's) investment¹ in liver and bile duct cancers research increased from \$63.7 million in fiscal year 2003 to \$68.3 million in fiscal year 2007.

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

¹The 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/>.

NCI Liver and Bile Duct Cancers Research Investment



Examples of NCI Activities Relevant to Liver and Bile Duct Cancers

- NCI's **Patterns of Care/Quality of Care Studies** are evaluating the dissemination of state-of-the-art cancer therapy into community practice and working with professional organizations to develop educational or training opportunities to improve the use of state-of-the-art cancer therapy in community practice. The cancers covered by these studies include cancers of the liver. <http://healthservices.cancer.gov/surveys/poc/>
- A clinical trial, **Hepatic Arterial Infusion of Melphalan with Hepatic Perfusion in Treating Patients with Unresectable Liver Cancer**, is evaluating the effectiveness of hepatic arterial infusion (delivering chemotherapy directly to the liver) of the drug melphalan combined with hepatic perfusion (delivering chemotherapy to a blood vessel) in patients with liver cancer. <http://www.cancer.gov/search/ViewClinicalTrials.aspx?cdrid=391827&protocolsearchid=2993091&version=patient>
- The **Etiology, Prevention, and Treatment of Hepatocellular Carcinoma** program supports research on the etiology of liver cancer, development of animal models, novel prevention approaches, identification of reliable predictors of disease progression, and ways to minimize the morbidity and mortality associated with this disease. <http://grants.nih.gov/grants/guide/pa-files/PA-07-258.html>

What You Need to Know About™ Liver Cancer



This booklet discusses possible causes, symptoms, diagnosis, treatment, and rehabilitation. It also has information to help patients cope with liver cancer.

Risk factors for liver cancer include: chronic liver infection (hepatitis), cirrhosis, aflatoxin, gender, family history of liver

cancer, and age.

<http://www.cancer.gov/cancertopics/wyntk/liver>

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

- The **Tumor Microenvironment Network (TMEN)** is exploring the role of the microenvironment, the cells and blood vessels that feed a tumor cell, in tumor initiation and progression. Network investigators are examining the role of inflammation and the microenvironment in the development of liver cancer. <http://tmen.nci.nih.gov/>
- The **Liver Cancer Home Page** provides up-to-date information on liver cancer treatment, prevention, genetics, causes, screening, testing, and other topics. <http://www.cancer.gov/cancertopics/types/liver/>

Selected Advances in Liver and Bile Duct Cancers Research

- Researchers have shown that a single nucleotide polymorphism (SNP)—a change in a unit of DNA—in the epidermal growth factor (EGF) gene may significantly increase the likelihood that a patient with cirrhosis will develop liver cancer. http://www.cancer.gov/ncicancerbulletin/NCI_Cancer_Bulletin_010808/page2
- A recent study found that the risk of bile duct cancer is higher in people with both gallstones and cholecystitis, or swelling and irritation of the gallbladder. <http://dceg.cancer.gov/newsletter/Linkage0308.html#article12>
- New research has shown that a unique pattern of microRNAs, small molecules that regulate gene activity, can accurately predict whether liver cancer will spread and whether liver cancer patients will have shorter- or longer-term survival. <http://www.cancer.gov/newscenter/pressreleases/MicroRNALiverCancers>
- A liver cancer chemoprevention trial found that combinations of retinol and zinc and of riboflavin and niacin reduced the risk of death from liver cancer in people younger than 55. <http://dceg.cancer.gov/newsletter/Linkage0308.html#article12>