

Stomach (Gastric) Cancer

Incidence and Mortality Rate Trends

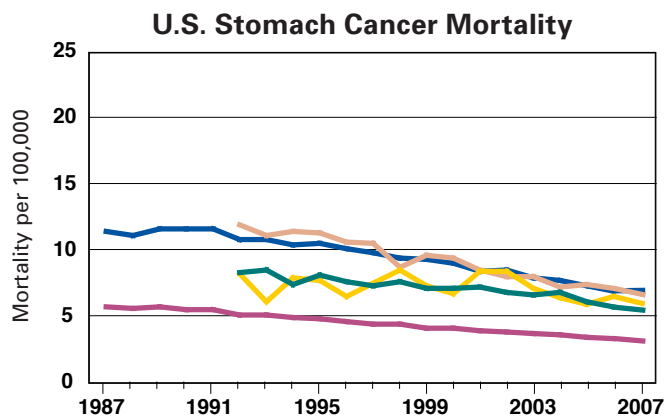
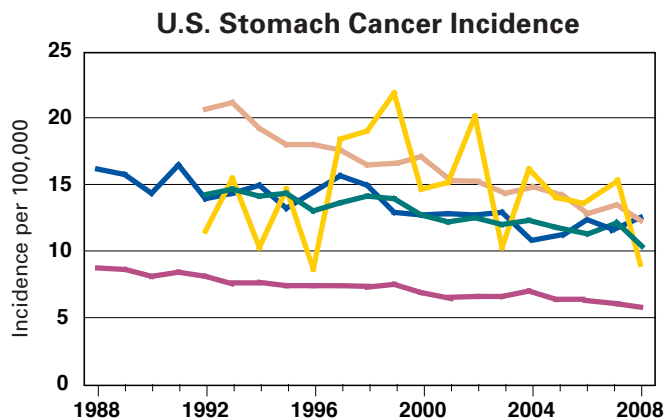
The overall incidence of stomach cancer in the United States has declined in the past 75 years. It is estimated that in 2011, 21,520 Americans will be diagnosed with stomach cancer and 10,340 will die of this disease. Approximately 1 in 114 men and women will be diagnosed with cancer of the stomach during their lifetime; most people diagnosed with stomach cancer are over 65 years of age.

In the United States, the incidence and mortality rates of stomach cancer vary by race and ethnicity. Incidence rates are highest in American Indians/Alaska Natives and Asians/Pacific Islanders, followed by Hispanics and African Americans, and whites. Mortality rates are highest in Asians/Pacific Islanders and African Americans, followed by American Indians/Alaska Natives, Hispanics, and whites. Men have higher stomach cancer incidence and mortality rates than women.

It is estimated that approximately \$1.6 billion¹ is spent in the United States each year on stomach cancer treatment.

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 2006 dollars.



Whites, Hispanics*, African Americans, Asians/Pacific Islanders*, American Indians/Alaska Natives*

* Incidence and mortality data not available before 1992.

Trends in NCI Funding for Stomach Cancer Research

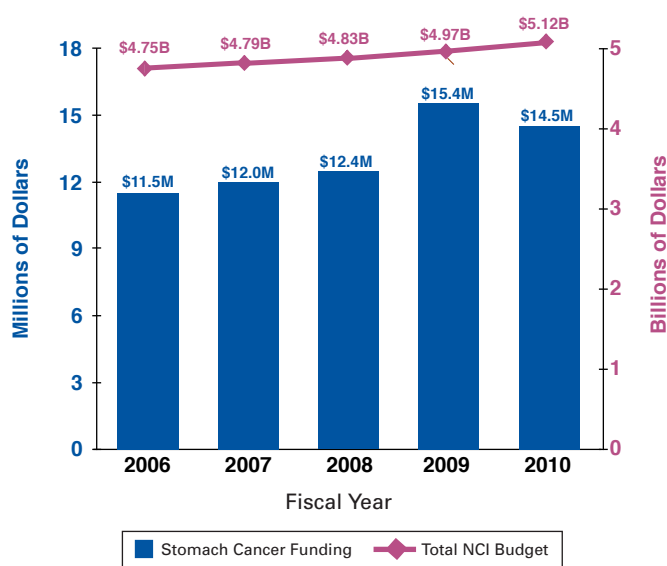
The National Cancer Institute's (NCI) investment² in stomach cancer research increased from \$11.5 million in fiscal year (FY) 2006 to \$14.5 million in FY 2010. In addition, NCI supported \$2.2 million in stomach cancer research in FY 2009 and 2010 using funding from the American Recovery and Reinvestment Act (ARRA).³

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 (NIH), see <http://www.nih.gov/about/>.

³ For more information regarding ARRA funding at NCI, see <http://www.cancer.gov/aboutnci/recovery/recoveryfunding>.

NCI Stomach Cancer Research Investment



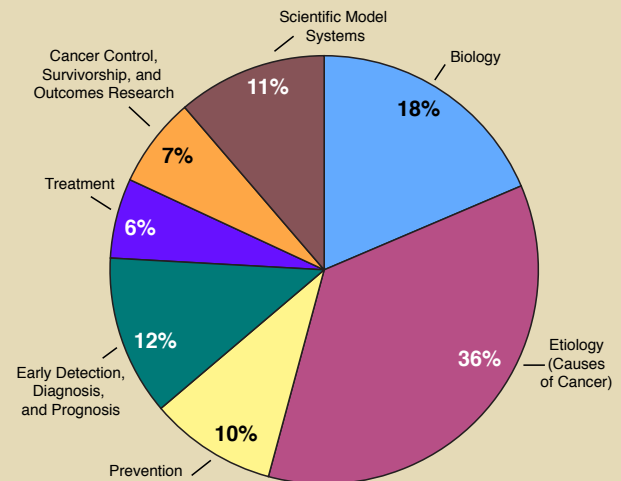
Examples of NCI Activities Relevant to Stomach Cancer

- NCI's **Infections and Immunoepidemiology Branch** conducts epidemiological research on infectious agents and cancer. Researchers are investigating why stomach cancer risk is low in Africa despite high rates of *Helicobacter pylori* (*H. pylori*) infection, a major risk factor for stomach cancer, and how genetic factors and Epstein-Barr virus infection affect stomach cancer risk. <http://dceg.cancer.gov/iib/research/gastric>
- The **Community Clinical Oncology Program (CCOP)** and the **Minority-Based Community Clinical Oncology Program (MB-CCOP)** are comprehensive clinical trial mechanisms that disseminate the latest cancer prevention and treatment research findings to the community. Several CCOP and MB-CCOP groups currently participate in stomach cancer clinical trials. <http://prevention.cancer.gov/programs-resources/programs/ccop>
- The interdisciplinary scientists of the **Network for Translational Research (NTR): Optical Imaging in Multimodality Platforms** are accelerating translational research in optical imaging. Current efforts include the development of techniques to identify molecular probes for detecting neoplasia in the digestive tract and multimodal imaging of gastrointestinal cancers. <http://imaging.cancer.gov/programsandresources/specializedinitiatives/ntroi>
- **The Cancer Genome Atlas (TCGA)** is assessing the feasibility of systematically identifying the major genomic changes involved in 20 cancers using state-of-the-art genomic analysis technologies. TCGA researchers are hoping to identify specific gene changes linked to *H. pylori* infection, early and late stages of stomach cancer, and distinct subtypes of stomach cancer. <http://cancergenome.nih.gov/>
- NCI supports studies that explore **Biomarkers of Infection-Associated Cancers**, including stomach cancer. <http://grants.nih.gov/grants/guide/pa-files/PA-11-158.html>
- Six gastrointestinal-cancer-specific **Specialized Programs of Research Excellence (SPOREs)** are moving results from the

Selected Advances in Stomach Cancer Research

- A genome-wide association study in ethnic Chinese subjects has identified **multiple variants within a single gene that are associated with increased risks** of both cancer in the upper region of the stomach (gastric cardia cancer) and esophageal cancer. http://dceg.cancer.gov/newsletter/nov10/1110_scientifichighlights.shtml and <http://www.ncbi.nlm.nih.gov/pubmed/20729852>
- A **risk score based on a six-gene expression signature**, validated in a small cohort of 52 patients, may be able to identify patients with a poor prognosis after gastric cancer surgery. <http://www.ncbi.nlm.nih.gov/pubmed/21447720>
- An analysis of data from NCI's Surveillance, Epidemiology, and End Results (SEER) Program indicates that **from 1977 through 2006, incidence of noncardia gastric cancer increased among whites** between 25 and 39 years of age, but declined or were stable in all other age and race groups. http://dceg.cancer.gov/newsletter/jul10/710_scientifichighlights.shtml and <http://www.ncbi.nlm.nih.gov/pubmed/20442388>
- Using animal tumor models, researchers have discovered a potential mechanism by which the **hormone gastrin may suppress stomach cancer** development. <http://www.ncbi.nlm.nih.gov/pubmed/21111741>

NCI Stomach Cancer 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>

laboratory to the clinical setting. <http://trp.cancer.gov/spores/gi.htm>

- The **What You Need to Know About™ Stomach Cancer** booklet contains information about possible causes of stomach cancer, diagnosis, and treatment. Information specialists can also answer questions about cancer at 1-800-4-CANCER. <http://www.cancer.gov/cancertopics/wyntk/stomach>
- The **NCI Stomach (Gastric) Cancer Home Page** provides up-to-date information on stomach cancer treatment, prevention, genetics, causes, screening, testing, and other related topics. <http://www.cancer.gov/cancertopics/types/stomach>