# Cancer

## About

Cancer is a general term for disease in which abnormal cells in the body divide uncontrollably and invade other tissues. Cancer can occur in any organ and in any cell type within the body. Cancer cells spread throughout the body through the blood and lymph systems. There are over 100 different kinds of cancer, many of which form solid tumors, or masses of tissue. Cancers of the blood, such as leukemias, generally do not form solid tumors.

Although scientists are studying and learning about cancer at a rapid pace, the cause of many cancers is still poorly understood. More science is needed to understand and prevent cancer. About one in three people are diagnosed with cancer at some time in their life, and about one in five dies of cancer. Most cancers develop slowly and can appear any time spanning 5 to 40 years after exposure to a carcinogen. For example, the latency of cancer of the lung could be 30 years after exposure. Although cancer can develop in children and adults, it is most common among middle-aged and elderly persons. The number of cancer cases has risen dramatically over the past 40 years, however much of this increase is a reflection of both the increase in population, and better reporting. According to the American Cancer Society, cancer mortality (death) rates from all causes have been on the decline since 1992, as have incidence rates (the rate of new identified cases), understood to be in large part due to reductions in tobacco use and advances in early detection and treatment.

Genetics play a role in the diagnosis of cancer. A lot is being learned at a rapid pace, which can assist to find out more about hereditary factors as genes and traits are passed down from one generation to the next. About 5-10 percent of cancer diagnoses are attributed to mutations in specific genes. Researchers have identified over 50 hereditary cancer syndromes (disorders that may predispose individuals to developing certain cancers, National Cancer Institute).

Scientists agree that people may also be diagnosed with cancer due to repeated long-term contact with carcinogens in the environment. Carcinogens are any cancer-causing chemical. These include tobacco, sunlight, x-rays and certain chemicals that may be found in the air, water, food, drugs and workplace. Some of the leading associations between chemicals in the environment and cancer have been learned through occupational exposures. Pharmaceuticals and other substances are believed to account for specific cancers as well. In each case, the duration of time exposed, route of exposure (inhalation, dermal, ingestion, etc.) as well as dose, toxicity of the chemical and health factors (age, weight, underlying conditions) are all crucial to understanding the associations between environmental pollutants or contaminants and what causes cancer.

Personal habits and lifestyle may also contribute to cancer. Good nutrition, regular exercise, protection from too much sun or medical radiation sources, being informed of the risks and limiting the use of certain medications or drugs, and not smoking or being around second-hand smoke are all ways which can reduce the risk of cancer.

## About the Measures

The LDH Tracking Program's Health Data Explorer receives cancer data updates in partnership with the

Louisiana State University Health Sciences Center (LSUHSC) Louisiana Tumor Registry (LTR). Cancer data can be explored directly and in more expansive ways via the LTR Louisiana Interactive Data Visualization. To view the data on the Health Data Explorer with environmental, population and exposure data, go to Explore Data.

The following cancer data are available for query of the LDH Tracking Health Data Explorer:

- Age-adjusted Cancer Incidence Rates, by US Census Tract and State, 2005-2015 report, 2008-2017 report.
- Average Annual Rates per 100,000 and Counts, by Parish and State, at 5- and 10-year aggregations

Please visit: https://sph.lsuhsc.edu/louisiana-tumor-registry/ for more information. The LDH Tracking Program tracks the average annual incidence rates and the annual counts of new cases for the following types of cancer for all age groups and, if noted, childhood groups:

- Acute Lymphocytic Leukemia (includes childhood)
- Acute Myeloid Leukemia (includes childhood)
- Bladder
- Brain and Central Nervous System (includes childhood)
- Breast (Female and Male)
- Chronic Lymphocytic Leukemia
- Colorectal
- Esophageal
- Kidney
- Laryngeal
- Leukemia (includes childhood)
- Liver and Hepatic Bile Duct
- Lung
- Melanoma of the Skin
- Mesothelioma
- Non-Hodgkin Lymphoma
- Oral Cavity and Pharyngeal
- Pancreatic
- Prostate
- Stomach
- Thyroid

## About the Data

PARISH AND STATE-LEVEL DATA

- Confidentiality of cancer cases is protected through employment of a numerator suppression rule based on Louisiana Tumor Registry (LTR) guidelines. Cancer rates based on 16 or fewer cases may not be reliable, thus these rates are not released. Counts of under 6 cases are considered confidential data and are not released.
- Cancer case definitions are based on Surveillance Epidemiology and End Results (SEER) Site Recode classifications.
- Parish of residence is based on the address at the time of diagnosis. No information is available

on the location of prior residences or personal exposure history.

- Average Annual Incidence Rates are age-adjusted to the 2000 U.S. standard population. Rates for Louisiana are based on the entire state population combined, rather than an average of all the parish rates.
- Data are reported by tumor type or cancer site. Information is collected for each separate cancer when a person is diagnosed with more than one type of cancer.
- Records with unknown age, gender or parish of residence are not included in these data.
- The data describe invasive cases only with the exception of in situ and invasive cases for bladder cancer.
- Cancer incidence rates are related to periods of time and are calculated based on the exact date of onset of a new case of cancer (i.e. the date of diagnosis).
- In 2005, Hurricanes Katrina and Rita impacted populations and record keeping within the Gulf Coast. Thus, the average annual incidence rates were calculated using the number of cases diagnosed in the first half of 2005 from January – June. Assumptions were made that there was an equal number of cancers during July – December 2005.
- Rates normally vary from one parish to another, and the differences may sometimes be significantly higher or lower than the statewide average. It's important to remember, however, that a parish border is just a line that usually has no meaning in a biological sense. When one crosses that line, the environmental conditions don't change. Nor do residents' family histories or genes. Those differences by parish rates are probably just a chance occurrence. On the other hand, differences by race or by sex are often important, as they reflect biological and genetic differences as well as possible differences in exposures to carcinogens or in access to healthcare. Public health professionals study those variations to target places where screening programs are needed—or where screening programs have led to a decline in incidence.

CENSUS TRACT-LEVEL DATA. For specific information and metadata, please reference the full reports provided by the Louisiana Tumor Registry. Reports are provided at the following website: https://sph.lsuhsc.edu/louisiana-tumor-registry/data-usestatistics/. Features include an interactive "How to Identify Your Census Tract" within the report introduction.

- Census Tract Identifiers: An eleven-digit number identifies the census tract. Digits 1 and 2 are the state code. For Louisiana, this is "22." Digits 3-5 are the parish code. For example, Acadia Parish is "001." Digits 6-11 are the census tract code. See report introduction for further clarification on census tract codes.
- Background: In 2017, during the Louisiana Regular Session, legislators passed House Bill 483 (Act No. 373), authorizing the LTR to publish cancer incidence counts and rates for individual census tracts, unless such data would disclose the identity of any person to whom the data was related, thus violating the requirements of the Health Insurance Portability and Accountability Act (HIPAA), which governs the use and disclosure of protected health information (45 CFR 164.514). Public cancer incidence data below the parish level in Louisiana first became available through LTR reports in 2018.
- These reports contain the cancer incidence data for diagnosis years (1) 2005 through 2015 and (2) 2008 through 2017 for all cancers combined, as well as for the specific cancer types (i.e., prostate, lung & bronchus, female breast, colon & rectum, kidney & renal pelvis, non-Hodgkin lymphoma, urinary bladder, melanoma of the skin, pancreas, oral cavity & pharynx, leukemia, thyroid, corpus uterus, liver & intrahepatic bile duct, myeloma, and stomach). Incidence rates and counts for other cancers are not provided because even after combining ten years of data together, the case counts

are too low and/or the population size is too small to meet the publication criteria. The LTR only collects data on reportable cancers as defined by national standard setters.

- Publication Criteria: To comply with legislative restrictions pertaining to HIPAA rules for protecting cancer patient privacy and USCS standards for generating reliable cancer incidence rates, the LTR combined cancer data from multiple years to increase the number of census tracts meeting the publication criteria (population >20,000 and case count ≥16) so that their cancer incidence could be presented in this report.
- Cancer incidence rates in this report are presented as age-adjusted rates, which is a standard way to report cancer rates. The age adjustment allows for meaningful comparisons of cancer incidence rates across different census tracts by controlling for differences in age distributions of the populations. This control is important because cancer is diagnosed more frequently among the elderly. Age-adjusted rates are the weighted average of the age-specific rates, where the weights represent the age distribution of a standard population. The 2000 U.S. Standard Population was used in this report, which is consistent with current publications of cancer incidence rates in the U.S.
- Please refer to individual reports for more information on cancer incidence calculations, the population data used and data summary/discussion.

## Disclaimer

Data are intended to spur further research and should be used only as a starting point to understanding how the environment and other contributing factors may be connected to disease. Datasets presented on this site are intended to answer some basic questions, but should ultimately lead to further inquiry and more detailed study.

Data limitations should be noted if conducting exploratory ecological studies with these data. Limitations may include data gaps, reporting discrepancies (for example, a disruption of reporting or instrument recording following hurricanes) and insufficient data on all potentially confounding factors. There are numerous additional factors which may contribute to disease onset. These include genetics, access to health care, existing health conditions, medicines, other chemical substances we come into contact with or ingest, nutrition, route and duration of exposure, level of activity, level of stress, and many others.

Responsible use of this data therefore requires exercising caution when drawing conclusions based solely on views of the limited available data. Any perceived relationship, trend, or pattern apparent in the data should not be interpreted to imply causation; may in fact be unrelated; and should be regarded as preliminary, and potentially erroneous, until more in-depth study and if applicable, statistical evaluation, can be applied. The LDH Bureau of Health Informatics and Environmental Public Health Tracking Program cannot guarantee the completeness of the information contained in these datasets and expressly disclaim liability for errors and omissions in their content.

## Data Sources

- Louisiana Tumor Registry

## Additional Information

- Louisiana Tumor Registry

- Louisiana Cancer Prevention & Control Programs
- Louisiana Interactive Data Visualizations
- Annual LTR monographs, Cancer in Louisiana
- LTR Cancer Facts & Figures online publication, which includes downloadable Adobe documents
- State Cancer Profiles website, developed by the CDC and the National Cancer Institute: http://statecancerprofiles.cancer.gov/
- NAACCR Fast Stats website, created by the North American Association of Central Cancer Registries: http://faststats.naaccr.org/
- CDC Cancer Prevention and Control
- National Cancer Institute - What is Cancer?
- Agency for Toxic Substances and Disease Registry – Health Effects of Exposure to Substances and Carcinogens
- Agency for Toxic Substances and Disease Registry - Chemicals, Cancer, and You Fact Sheet
- National Institute of Environmental Health Sciences - Cancer
- American Cancer Society

## Questions

- Email: healthdata@la.gov