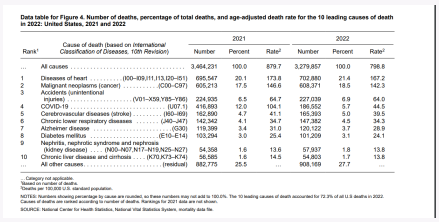
Chronic Disease Epidemiology

Chronic Disease Epidemiology is the study of the distribution and determinants of chronic diseases.

Latency period is the time of exposure to the clinical signs of a chronic disease.

Risk factor are behaviors that lead to chronic diseases.

Top leading causes of Death



Data table for Figure 4. Number of deaths, percentage of total deaths, and age-adjusted death rate for the 10 leading causes of death in 2022: United States, 2021 and 2022

Rank[1]	Cause of death (based on International Classification of Diseases, 10th Revision)	2021 Number	2021 Percent	2021 Rate[2]	2022 Number	2022 Percent	2022 Rate[2]
…	All causes	3,464,231	100.0	879.7	3,279,857	100.0	798.8
1	Diseases of heart (I00–I09,I11,I13,I20–I51)	695,547	20.1	173.8	702,880	21.4	167.2
2	Malignant neoplasms (cancer) (C00–C97)	605,213	17.5	146.6	608,371	18.5	142.3
3	Accidents (unintentional injuries) (V01–X59,Y85–Y86)	224,935	6.5	64.7	227,039	6.9	64.0
4	COVID-19 (U07.1)	416,893	12.0	104.1	186,552	5.7	44.5
5	Cerebrovascular diseases (stroke) (I60–I69)	162,890	4.7	41.1	165,393	5.0	39.5
6	Chronic lower respiratory diseases (J40–J47)	142,342	4.1	34.7	147,382	4.5	34.3
7	Alzheimer disease (G30)	119,399	3.4	31.0	120,122	3.7	28.9
8	Diabetes mellitus (E10–E14)	103,294	3.0	25.4	101,209	3.1	24.1
9	Nephritis, nephrotic syndrome and nephrosis (kidney disease) (N00–N07,N17–N19,N25–N27)	54,358	1.6	13.6	57,937	1.8	13.8
10	Chronic liver disease and cirrhosis (K70,K73–K74)	56,585	1.6	14.5	54,803	1.7	13.8
…	All other causes (residual)	882,775	25.5	…	908,169	27.7	…

… Category not applicable.
[1]Based on number of deaths.
[2]Rate per 100,000 age-adjusted population.
NOTES: Numbers showing percentage by cause are rounded, so these numbers may not add to 100.0%. The 10 leading causes of death accounted for 72.3% of all U.S deaths in 2022. Causes of deaths are ranked according to number of deaths. Rankings for 2021 data are not shown.
SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.

NCHS Data Brief, Number 492, December 2023, www.cdc.gov/nchs/data/databriefs/-db492-tables.pdf. Accessed 24 Feb. 2025.

Heredity and Chronic Health Problems

Heredity conditions can be associate with cancer which are called **hereditary retino-blastoma**. This is a huge risk factor for cancer.

Epilepsy is also another heredity trait that has a strong genetic influence. These can trigger two different types of seizures which are called **Partial Seizures and Generalized Seizures**.

Osteoporosis can also be a heredity trait but can be offset if you eat a health diet and exercise regularly.

Smoking and Chronic Disease

Smoking is very detrimental to your health and often leads to chronic disease. Smoking is on its way to being one of the leading causes of death.

If smoking decreases it can help to diminish chronic health diseases.

Wang, Xuemei et al. “The Association between Socioeconomic Status, Smoking, and Chronic Disease in Inner Mongolia in Northern China.” International journal of environmental research and public health vol. 16,2 169. 9 Jan. 2019, doi:10.3390/ije-rph16020169

Environment and Chronic Health Problems

The environment is a contributing factor to chronic health issues. Physical stress also plays a big part in developing chronic health issues.

Anemia: Alcohol abuse, arsenic, benzene, cooper deficiency, nitrates, lead, radiation

Asthma: Allergens, air pollutants, enviro-nmental tobacco smoke, workplace exposures

Cancer: Chemicals, viruses, bacteria, radiation

Cardiovascular: Carbon monoxide, noise, tobacco smoke, physical stress, carbon disulfide, nitrates, methylene chloride

Dermatologic: Dioxin, nickel, arsenic, mercury, cement (chromium), polychlor-inated biphenyls (PCBs), glues, rubber cement

Kidney: Cadmium, lead, mercury, chlori-nated hydrocarbon solvents

Lung Cancer: Asbestos, chromium, diesel exhaust, tobacco, radon

Mesothelioma: Asbestos

Methemoglobinemia: Benzocaine, dapsone, nitrates

Neuropsychological: Tetrachloroethylene, mercury, arsenic, toluene, lead, methanol, noise, vinyl chloride

Noise-induced hearing loss: Extreme and prolonged noise events

Peripheral Neuropathy: Alcohol abuse, toxic substances (arsenic, mercury)

Reproductive: Methylmercury, carbon monoxide, lead, ethylene oxide

Respiratory: Asbestos, radon, beryllium, cigarette smoke, glues, carbon monoxide, lead, nitrogen dioxide, ozone, PM10, sulfur dioxide, uranium

Health Belief Model

The Health Belief helps to understand how behaviors makes a great impact on chronic diseases. Each individual knows the risk they take when the engage in activities such as smoking tobacco or drinking alcohol but their behaviors leads to chronic health issues because of their choices.

Disability

Disability- *the diminished capacity to perform within a prescribed range*

Disability often comes from having a chronic disease. This includes impairment, activity limitations, and participation restrictions.

People on disability often struggle and have difficulty dealing with their chronic disease and managing day to day life.

They often required assistance everyday to function.

Monteleone, Rebecca, and Jones, Rachel Forrester. “‘Disability Means, Um, Dysfun-ctioning People’: A Qualitative Analysis of the Meaning and Experience of Disability among Adults with Intellectual Disabilities.” Journal of Applied Research in Intellectual Disabilities, vol. 30, no. 2, Mar. 2017, pp. 301–15. EBSCOhost, https://doi-org.libpr-oxy.howardcc.edu/10.1111/jar.12240.

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