

## Overview of cancer and its causes.

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### Editorial Note

Cancer is a condition in which some cells in the body grow out of control and spread to other parts of the body. Cancer can begin practically anywhere in the trillions of cells that make up the human body. Human cells normally expand and multiply (via a process known as cell division) to generate new cells as needed by the body. Cells die as they become old or injured, and new cells replace them. This ordered process can sometimes break down, resulting in aberrant or damaged cells growing and multiplying when they shouldn't. Tumors, which are masses of tissue, can grow from these cells. Tumors may or may not be malignant (benign). Cancerous tumours can infect adjacent tissues and spread to other parts of the body, resulting in the formation of new tumours (a process called metastasis). Malignant tumours are another name for cancerous tumours. Many malignancies, including leukemias, create solid tumours, whereas cancers of the blood do not. Benign tumours do not penetrate or spread into neighbouring tissues. Benign tumours rarely reappear after being excised, although malignant tumours do. However, benign tumours can grow to be extremely enormous. Some, such as benign brain tumours, can produce serious symptoms or even be fatal.

### Causes of cancer

The majority of cancers are caused by genetic changes caused by environmental and lifestyle factors, accounting for 90–95 percent of cases. Inherited genetics account for the remaining 5–10%. Environmental influences include, but are not limited to, lifestyle, economic, and behavioral factors, as well as pollution. Tobacco usage (25–30%), food and obesity (30–35%), infections (15–20%), radiation (both ionising and non-ionizing, up to 10%), lack of physical activity, and pollution are all common environmental variables that contribute to cancer death. Psychological stress does not appear to be a risk factor for cancer development, while it may impair results in people who have already been diagnosed with the disease. It is not generally possible to prove what caused a particular cancer because the various causes do not have specific fingerprints. For example, if a heavy smoker develops lung cancer, the disease was most likely caused by the tobacco use; yet, because everyone has a slight possibility of developing lung cancer as a result of air pollution or radiation, the cancer could have

formed for one of those reasons. Cancer is generally not a transmissible disease, with the exception of rare transmissions associated with pregnancies and infrequent organ donors.

**Chemicals:** Specific types of cancer have been related to exposure to specific chemicals. Carcinogens are the term for these compounds. Tobacco smoke, for example, is responsible for 90% of lung cancer cases. Cancers of the larynx, head, neck, stomach, bladder, kidney, esophagus, and pancreas are also caused by it. Tobacco smoke contains more than fifty carcinogens, such as nitrosamines and polycyclic aromatic hydrocarbons.

**Diet and exercise:** Up to 30–35 percent of cancer fatalities are linked to diet, physical inactivity, and obesity. Excess body weight is linked to the development of several forms of cancer in the United States, and it is a role in 14–20 percent of cancer fatalities. Higher BMI was linked to at least 10 forms of cancer in a UK study including over 5 million adults, and was responsible for roughly 12,000 cases each year.

**Infection:** Infectious infections are responsible for around 18% of cancer deaths worldwide. This percentage varies from a high of 25% in Africa to less than 10% in wealthy countries. Cancer is most commonly caused by viruses however cancer bacteria and parasites may also play a role.

**Radiation:** Radiation, such as UV light and radioactive substances, is a cancer risk factor. UV radiation, primarily from sunshine, is responsible for many non-melanoma skin malignancies. Medical imaging and radon gas are both sources of ionizing radiation. Ionizing radiation isn't a very powerful mutagen. Radon gas exposure in the home, for example, carries cancer risks similar to passive smoking.

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