OPEN ACCESS Freely available online

Journal of Cancer Science and Research

Opinion Article

# A Comprehensive Overview of Cancer

**Mauricio Alexander*, Sharmin Hasan**

*Department of Pathology and Laboratory Medicine, Henry Ford Health System, Detroit, MI, USA*

## DESCRIPTION

Cancer is a term used to describe a group of diseases with shared risk factors. It encompasses various disorders where normal cells undergo alterations that lead to abnormal replication. This abnormal cell replication spreads throughout the body, causing harm. There are numerous factors that can contribute to abnormal cell replication. DNA plays a crucial role in regulating cell reproduction, just like in other biological processes. When a cell undergoes a change in its DNA, it is considered mutated. Most mutations have no harmful effects. However, if a mutation occurs in the DNA region that governs cell reproduction, it can cause the cell to replicate abnormally and pass on the mutation to its daughter cells through genetic information transfer. Cancer can be triggered by agents that induce DNA mutations. While a minority of cancers are caused by inherited genetic mutations, the majority are influenced by environmental, lifestyle, or behavioral factors. Cancer is not typically contagious among humans, but certain oncogenic viruses and cancer-causing microorganisms can contribute to its development. According to the World Health Organization (WHO), cancer claimed the lives of approximately 10 million people in 2020, making it the leading cause of death worldwide. Breast cancer, lung cancer, and colon cancer are among the most common types. Prior to the pandemic, cancer mortality rates were declining, but the COVID-19 crisis has led to significant backlogs in cancer detection and treatment. Nonetheless, ongoing medical advancements continue to support the global efforts against cancer.

Even before humans gained the technology to manufacture synthetic chemicals, there were naturally occurring substances that may cause cancer. Even if human industrial activity has the potential to enhance a person's exposure to naturally occurring carcinogens, this does not alter the fact that these carcinogens occur naturally in the environment. Even if we were somehow able to shield ourselves from 100 percent of the carcinogens, whether they were naturally occurring or the result of human activity, there is still a chance that we could develop cancer. Cancer can develop even in the absence of other potentially dangerous factors. When a cell reproduces, it needs to manufacture copies of its DNA to pass on to the daughter cells that it creates. Even in the absence of any carcinogens, the process of DNA replication may nevertheless result in copy mistakes as a consequence of the random fluctuations that are inherent in all molecular movements. In this sense, DNA mutation is an inevitable consequence of the process of cell replication. There are many mutations that do not cause harm. There are even mutations that are advantageous to the species and help it evolve. On the other hand, mutations can sometimes result in cancer. Even without the intervention of man-made chemicals, cancer can develop due to the presence of naturally occurring carcinogens in the environment and the fact that mutation is an inevitable byproduct of the process of cell reproduction. Tobacco, alcohol, arsenic, radon, ionizing radiation, and other carcinogens should all be avoided, along with other healthy lifestyle choices like eating more fruits and vegetables, getting regular exercise, being vaccinated, and wearing sunscreen. In this article we discussed the most evil health issue around the globe, so that anybody can learn more about the potential causes, suggestions, latest treatment advices of cancer, including its variability and general information about carcinogens and how genetics play a role in cancer.

## CONCLUSION

Cancer has existed in the world long before the advent of human-made carcinogens. Carcinogens are substances known to cause cancer. However, cancer is a natural part of the human experience and can affect multicellular organisms regardless of their environment. While certain human-made chemicals can contribute to cancer, they are not the sole cause. Taking strict measures to protect against artificially produced carcinogens does not guarantee immunity from cancer. Cancer has multiple causes, some of which are preventable. In 2014, the mortality rate from cancer in the United States exceeded 480,000 individuals. Apart from smoking, risk factors associated with cancer include heavy alcohol consumption, obesity, sedentary lifestyle, and poor nutrition. However, there are also causes of cancer that cannot be avoided. Advancing age is currently the primary non-modifiable risk factor, with 87% of cancer cases in the United States being diagnosed in individuals aged 50 or older, according to the American Cancer Society. Genetic factors can also play a role in cancer development. An individual's

**Correspondence to:** Mauricio Alexander, Department of Pathology and Laboratory Medicine, Henry Ford Health System, Detroit, MI, USA, E-mail: mauricio1969@gmail.com

**Received:** 18-Apr-2023, Manuscript No. JCSR-23-25248; **Editor assigned:** 20-Apr-2023, PreQC No. JCSR-23-25248 (PQ); **Reviewed:** 04-May-2023, QC No. JCSR-23-25248; **Revised:** 11-May-2023, Manuscript No. JCSR-23-25248 (R)**Published:** 18-May-2023, DOI: 10.35248/2576-1447.23.8.544.

**Citation:** Alexander M, Hasan S (2023) A Comprehensive Overview of Cancer. J Can Sci Res. 8:544.

genetic code influences the timing of cell division and senescence. Genetic alterations can lead to faulty instructions, potentially contributing to cancer development. Some individuals may inherit a genetic predisposition to a specific type of cancer, referred to as "hereditary cancer syndrome" by medical professionals.