

# Clearing the Air: Understanding the causes and prevention of lung cancer.

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## Abstract

**Lung cancer is one of the most common types of cancer and is responsible for the highest number of cancer-related deaths worldwide. The primary cause of lung cancer is smoking, which accounts for nearly 85% of all cases. However, non-smokers can also develop lung cancer due to exposure to environmental factors like air pollution and radon gas. Prevention of lung cancer involves avoiding tobacco smoke and minimizing exposure to harmful substances. Early detection is crucial for better prognosis and improved survival rates. This article aims to provide a comprehensive overview of the causes and prevention of lung cancer.**

**Keywords:** Lung cancer, Abnormal cells, Oncology.

## Introduction

Lung cancer is a type of cancer that originates in the lungs and is characterized by the uncontrolled growth of abnormal cells. It is the leading cause of cancer deaths worldwide, with over 2 million deaths reported annually. Lung cancer is usually diagnosed at an advanced stage, making treatment challenging and resulting in a high mortality rate. The primary cause of lung cancer is smoking, which accounts for nearly 85% of all cases. However, non-smokers can also develop lung cancer due to exposure to environmental factors like air pollution and radon gas. This article provides an overview of the causes and prevention of lung cancer [1].

## Causes of Lung Cancer

Smoking is the leading cause of lung cancer, responsible for nearly 85% of all cases. When a person smokes, they inhale harmful chemicals like tar, nicotine, and carbon monoxide, which can cause changes in the lung tissue and lead to the formation of cancerous cells. The longer a person smokes, the higher their risk of developing lung cancer. Quitting smoking can significantly reduce the risk of lung cancer, and the risk continues to decrease with each smoke-free year.

Exposure to environmental factors like air pollution and radon gas can also increase the risk of lung cancer. Air pollution is caused by industrial emissions, traffic, and other human activities that release harmful chemicals into the air. Radon gas is a naturally occurring gas that is found in soil, rocks, and water. When radon gas decays, it releases radioactive particles that can damage lung tissue and lead to the development of cancerous cells. Exposure to secondhand smoke can also increase the risk of lung cancer [2].

## Prevention of Lung Cancer

Prevention of lung cancer involves avoiding tobacco smoke and minimizing exposure to harmful substances. Quitting smoking is the most effective way to reduce the risk of lung cancer. Smokers who quit smoking can reduce their risk of lung cancer by up to 50% within ten years. Non-smokers should avoid exposure to secondhand smoke and reduce their exposure to air pollution and radon gas. It is also important to maintain a healthy lifestyle by eating a balanced diet, exercising regularly, and avoiding excessive alcohol consumption [3].

## Early Detection of Lung Cancer

Early detection of lung cancer is crucial for better prognosis and improved survival rates. The symptoms of lung cancer are often non-specific and may include coughing, shortness of breath, chest pain, and weight loss. These symptoms can be caused by other conditions, so it is important to consult a healthcare professional for an accurate diagnosis. Screening for lung cancer is recommended for individuals who are at high risk, such as current or former smokers. Screening tests include low-dose computed tomography (LDCT) and chest X-rays [4].

## Treatment of Lung Cancer

Treatment of lung cancer depends on the stage of the cancer and the patient's overall health. Surgery, radiation therapy, and chemotherapy are the most common treatment options. Surgery is the primary treatment for early-stage lung cancer and involves the removal of the tumor and surrounding tissue. Radiation therapy uses high-energy radiation to kill cancer cells, while chemotherapy uses drugs to kill cancer cells. Immunotherapy is a newer treatment option that helps the body's immune system fight cancer by targeting and killing cancer cells [5].

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## Conclusion

Lung cancer is a serious and life-threatening disease that affects millions of people worldwide. The primary cause of lung cancer is smoking, but non-smokers can also develop lung cancer due to exposure to environmental factors like air pollution and radon gas. Prevention of lung cancer involves avoiding tobacco smoke and minimizing exposure to harmful substances. Early detection of lung cancer is crucial for better prognosis and improved survival rates. Treatment options include surgery, radiation therapy, chemotherapy, and immunotherapy. While lung cancer remains a significant health challenge, continued research and education on prevention and early detection are essential to improving outcomes for those affected by this disease.

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