

# The Rising Importance of Non-Pulmonary Neoplasms in Cancer Research and Public Health

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## Introduction

The landscape of cancer research has traditionally focused on pulmonary neoplasms due to their high incidence and the significant impact they have on global mortality. However, non-pulmonary neoplasms, which include a wide range of malignancies that affect organs outside the lungs, are increasingly recognized for their growing prevalence, diverse risk factors, and significant health outcomes. These cancers encompass a variety of types, such as gastrointestinal, gynecologic, hepatobiliary, and soft tissue cancers, among others.

Despite the increasing incidence of non-pulmonary neoplasms, much of the focus in clinical oncology and public health initiatives has been on lung cancer due to its direct association with smoking and high mortality rates. Nonetheless, non-pulmonary neoplasms, with their varied etiologies, demographic patterns, and outcomes, require equal attention for prevention, diagnosis, and treatment strategies. The shift in research and healthcare priorities towards non-pulmonary neoplasms is essential in light of changing environmental exposures, genetic predispositions, and evolving healthcare access disparities [1].

## Description

Non-pulmonary neoplasms comprise a vast and diverse group of cancers that are not located in the lungs but can occur in nearly every organ system. These cancers are responsible for a significant proportion of the global cancer burden and are often associated with different risk factors compared to pulmonary neoplasms. According to the Global Cancer Observatory (GCO), non-pulmonary cancers account for approximately 80% of all cancer cases worldwide. The epidemiology of non-pulmonary neoplasms is influenced by a wide range of factors, including age, gender, geographic location, genetic background, environmental exposures, and lifestyle choices. For example, gastrointestinal cancers, such as colorectal cancer, exhibit significant regional variation, with higher rates observed in developed countries. On the other hand, liver cancer is more common in regions with endemic hepatitis B and C viruses, particularly in East Asia and sub-Saharan Africa. In many high-income countries, the incidence of non-pulmonary cancers has increased over the past few decades, driven by changes in lifestyle factors like diet, physical inactivity, and obesity. The rising prevalence of these risk factors, coupled with an aging population, contributes to the growing burden of non-pulmonary cancers. Conversely, in low- and middle-income countries, infections, environmental pollutants, and inadequate access to healthcare contribute to the higher incidence of certain types of non-pulmonary neoplasms, such as liver and cervical cancers [2].

The risk factors for non-pulmonary neoplasms are diverse and

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multifactorial. While genetic mutations and family history play a key role in the development of some cancers, environmental and lifestyle factors are also significant contributors. The interplay of these factors makes it difficult to pinpoint a single cause for most non-pulmonary cancers, though researchers have identified several major risk factors that increase susceptibility. Genetic predisposition plays an important role in the development of various non-pulmonary cancers. Certain inherited mutations, such as BRCA1 and BRCA2, are strongly linked to breast and ovarian cancers, while Lynch syndrome increases the risk of colorectal and other cancers. Family history can help identify individuals at higher risk for these conditions, though not all familial cancers are linked to specific genetic mutations. Hereditary cancers are typically diagnosed earlier and may require targeted surveillance to detect cancer in its early stages. Environmental factors have a profound impact on non-pulmonary cancer risk. For instance, exposure to pesticides, asbestos, and certain industrial chemicals has been linked to cancers such as those of the liver, bladder, and kidney. Additionally, air pollution, particularly fine particulate matter, has been identified as a contributing factor to cancers in various organs, including the pancreas and colorectal system. Occupational exposure also represents a critical risk factor. Workers in industries such as agriculture, mining, and construction may be at higher risk for certain cancers due to their exposure to carcinogenic substances. Public health initiatives that regulate workplace safety standards and limit hazardous exposure are essential for reducing these risks [3].

Several lifestyle factors are modifiable risk factors for non-pulmonary neoplasms. A poor diet, characterized by high intake of red and processed meats, high-fat foods, and low consumption of fruits and vegetables, is associated with an increased risk of gastrointestinal cancers, including colorectal and esophageal cancers. In addition, obesity, a growing epidemic in many countries, has been linked to several types of cancer, including endometrial, breast, and kidney cancers. Alcohol consumption is another major lifestyle factor contributing to the development of non-pulmonary cancers. Heavy drinking has been associated with an increased risk of liver, colorectal, and breast cancers. Similarly, smoking, while primarily linked to lung cancer, also raises the risk for cancers of the head and neck, esophagus, and pancreas. Infections caused by certain viruses and bacteria have also been identified as risk factors for non-pulmonary cancers. The Human Papillomavirus (HPV), for instance, is a well-established cause of cervical cancer, while hepatitis B and C viruses are linked to liver cancer. Epstein-Barr Virus (EBV) is associated with nasopharyngeal carcinoma, and the *Helicobacter pylori* bacterium has been implicated in the development of gastric cancer. Vaccination against certain viral infections, such as HPV and hepatitis B, has been shown to significantly reduce the incidence of these cancers [4,5].

## Conclusion

The implications of non-pulmonary neoplasm risk and health outcomes are far-reaching, encompassing a wide range of factors that affect individuals, families, healthcare systems, and society at large. Understanding the epidemiology and risk factors for these cancers is crucial for developing effective prevention, early detection, and treatment strategies. Non-pulmonary cancers, while diverse in their origins, share common challenges in terms of risk factors, diagnosis, treatment, and overall health outcomes. Public health initiatives aimed at reducing modifiable risk factors, such as tobacco and

alcohol consumption, poor diet, and physical inactivity, are key to preventing the rise of non-pulmonary neoplasms. Additionally, advances in medical research, particularly in the areas of early detection, personalized medicine, and immunotherapy, hold promise for improving survival rates and quality of life for patients. Ultimately, the growing burden of non-pulmonary cancers requires a coordinated and comprehensive approach to healthcare that includes prevention, early detection, improved treatment options, and support for patients and families affected by these diseases. The fight against non-pulmonary neoplasms is an ongoing challenge, but with continued innovation, collaboration, and advocacy, it is possible to reduce the impact of these cancers on global health and well-being.

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## Acknowledgement

None.

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## Conflict of Interest

None.

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