



# Cancer

## and the Environment

Getting a diagnosis of cancer or learning that a loved one has been diagnosed with cancer can be devastating. It is usually at this moment that we become more aware of other people close to us who are also touched by this disease. It is natural to wonder why so many people around us seem to be suffering from cancer, and if there could be a connection to chemicals in the environment where you live and work.

NORTH CAROLINA

## Cancer is more common than most people realize.

In the U.S., cancer affects approximately one in two men and one in three women in their lifetime.<sup>1</sup> An estimated 40 percent of North Carolinians will develop cancer in their lifetime.<sup>2</sup>

## Cancer is more likely to occur as people get older.

Because people are living longer, more cases of cancer can be expected in the future. This increased life expectancy may create the impression that cancer is becoming much more common; however, the increase in the number of cases of cancer is related in large part to the growing number of elderly people in the population.<sup>3</sup>

## Cancer is not a single disease.

Cancer is a group of more than 100 different types of conditions characterized by uncontrolled growth and spread of abnormal cells.

## Cancer has many different causes.

Different types of cancer have different causes. What changes a breast cell into breast cancer is not the same as what changes a white blood cell into leukemia. Cancer is likely to be caused by a combination of factors acting together over many years. **Heredity** and the **Environment** are cancer causing factors.

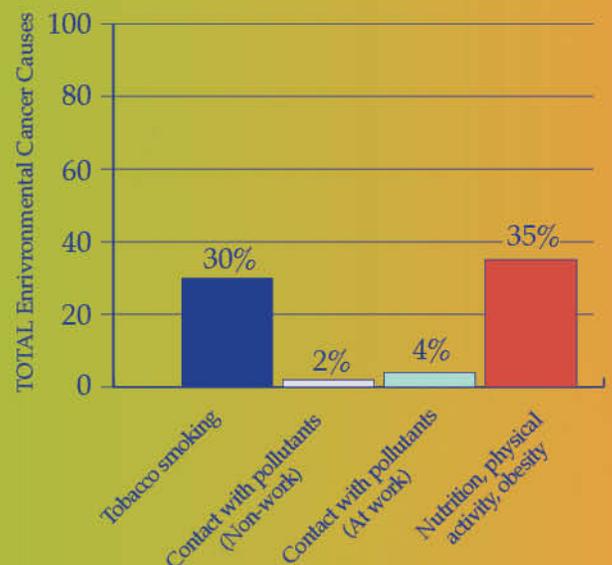
**Hereditary factors**  
(physical characteristics we inherit from our parents), and

**Environmental factors**  
• how we live, also called lifestyle factors. This includes things we do such as exercise, smoking, and what we eat.  
• contact with cancer-causing agents (called "carcinogens").

**Environmental factors make up an estimated 75 to 80 percent of cancer cases and deaths in the U.S.**

These factors include things we do, such as exercising and smoking, as well as contaminants in the environment.

## Environmental Causes of Cancer



American Cancer Society. *Cancer Facts & Figures 2010*.

<sup>1</sup> American Cancer Society. *Cancer Facts & Figures 2010*. Atlanta: American Cancer Society; 2010, p.1 <sup>2</sup> "Health Profile of North Carolinians: 2009 Update" NC DHHS/DPH/State Center for Health Statistics, May 2009, P. 4 <sup>3</sup> National Cancer Institute. (2009). *Cancer Clusters*. Retrieved from [www.cancer.gov/cancertopics/factsheet/Risk/clusters](http://www.cancer.gov/cancertopics/factsheet/Risk/clusters) <sup>4</sup> American Cancer Society. *Cancer Facts & Figures 2010*. Atlanta: American Cancer Society; 2010, p.50 <sup>5</sup> Adapted from the Centers for Disease Control and Prevention page, [www.cdc.gov/ncch/clusters/faq.htm](http://www.cdc.gov/ncch/clusters/faq.htm), Accessed September 12, 2009.



There are many types of cancer-causing agents, or carcinogens, including some types of viruses and medicines, as well as chemicals and radiation.

**However, contact with chemicals accounts for only a small percentage of cancer.**

The American Cancer Society estimates that contact with cancer-causing agents in workplaces causes about 4 percent of cancers, and contact with pollutants in non-workplace settings causes about 2 percent.<sup>4</sup>

**Different factors or combinations of factors can cause the same type of cancer.**

For example, one person's breast cancer might be related to hereditary factors acting in combination with taking hormone pills prescribed by a doctor. Yet another person's breast cancer might be caused by hereditary factors in combination with contact with chemicals during puberty.

**Cancers today are usually related to events that happened many years ago.**

Cancer usually does not develop immediately after you have come in contact with a cancer-causing agent. Instead, it may take years, if not decades, between contact with a cancer-causing agent for you to be diagnosed with cancer. This delay between possible contact and the development of cancer often makes it difficult to determine which agent may have caused the cancer.

**You can reduce your risk for developing cancer.**

The American Cancer Society estimates that about 30 percent of cancers could be prevented by eliminating tobacco use, and another 35 percent could be prevented by reducing obesity, increasing physical activity, and eating a healthy diet.

**How do I reduce my risk of cancer?<sup>5</sup>**

- Avoid tobacco use
- Avoid excessive alcohol use
- Avoid excessive sun exposure
- Increase physical activity
- Maintain a recommended body weight
- Eat a healthy and nutritious diet
- Take advantage of cancer screenings

## Cancer Clusters

A cancer cluster is a greater-than-expected number of cancer cases that occur within a group of people in a geographic area over a period of time.

### A cancer cluster usually involves:

- one type of cancer;
- a rare type of cancer;
- cancers diagnosed over a short period of time;
- groups of cases among children or a type of cancer that is not usually found in a particular age group.

### A greater than expected number of cancer cases could be the result of a variety of reasons, including chance.

For example, it is like flipping a coin. You can get heads six times in a row although the probability of it happening is very small.

### Trying to identify a cause for a cancer cluster has proven to be extremely difficult.

Extensive follow-up investigations can be done, but these often take years to complete and require extensive research. In most instances, even when these activities are conducted, no cause is found.

### Clusters of cancer cases have been identified in North Carolina.

However, there have been no cases where a cluster of cancers was proven to occur as a result of an environmental exposure.

### The NC Central Cancer Registry monitors cancer rates throughout the state.

[www.epi.state.nc.us/SCHS/CCR/](http://www.epi.state.nc.us/SCHS/CCR/)

### You can read more about how cancer is investigated in communities

by visiting the CDC Web site at [www.cdc.gov/nceh/clusters/faq.htm](http://www.cdc.gov/nceh/clusters/faq.htm)

Even when a scientist and/or the medical community identifies a true cancer cluster, there is usually no single external cause or cancer-causing agent that can be identified.



### You can report a suspected cancer cluster or obtain information on cancer statistics for your area.

Contact your local health department at [www.ncalhd.org/county.htm](http://www.ncalhd.org/county.htm), or the N.C. Central Cancer Registry at (919) 715-4574. These agencies provide the first level of response and the most current data to answer your questions.

### For more information

Centers for Disease Control and Prevention  
[www.cdc.gov/nceh/clusters/faq.htm](http://www.cdc.gov/nceh/clusters/faq.htm)

National Cancer Institute [www.cancer.gov/cancertopics/factsheet/Risk/clusters](http://www.cancer.gov/cancertopics/factsheet/Risk/clusters)

Cancer Clusters, American Cancer Society  
[www.cancer.org/docroot/PED/content/PED\\_1\\_3x\\_Cancer\\_Clusters.asp?sitearea=PED](http://www.cancer.org/docroot/PED/content/PED_1_3x_Cancer_Clusters.asp?sitearea=PED)

# NORTH CAROLINA



State of North Carolina  
Department of Health and Human Services  
HACE Program, OEE Branch, N.C. Division of Public Health



[www.ncdhhs.gov](http://www.ncdhhs.gov)



[www.ncpublichealth.com](http://www.ncpublichealth.com)

NC DHHS is an equal opportunity employer and provider 8/10

Cancer and the Environment - August 2010 - HACE Program, OEE Branch, N.C. Division of Public Health