



What Is Cancer?

Cancer is not just 1 disease. It is a large group of diseases. In all cancers, certain cells in the body divide without stopping. These fast-growing cells can move from where they start growing and attack other tissues.

Too much growth

Your body is made of trillions of cells. As these cells age, break down, and die, new ones are made. Normal cells only get replaced with new ones when they are needed. With cancer cells, too many cells divide and grow too fast. Not enough of them die. All the extra cells build up and grow into lumps called tumors.

All about tumors

Some cancers grow into solid tumors. Others form in the blood. Leukemia is an example of a blood cancer. Not all tumors are cancerous. Some tumors are called *benign*. This is because they are made of cells that do not break off and invade nearby tissues. Benign tumors are not cancer.

Cancerous tumors are *malignant*. This means their cells can break off and invade other cells, tissues, or organs. Malignant tumors can spread from the main site and start new tumors. This process of traveling and growing tumors in new areas is called *metastasis*.

Malignant tumors can grow back if they are removed with surgery. Benign tumors can be very large but they do not grow back if surgically removed. Benign tumors do not spread. Except in rare cases, like in the brain, benign tumors are not dangerous.

Why cancer grows

Cancer can seem complicated. Here are some simple ways to understand how it grows so fast:

- **Staying alive.** When it is time for normal cells to die, death is automatic. The automatic death of cells helps the body keep plenty of healthy cells while getting rid of old or damaged ones. Cancer cells ignore or go around the normal process of cell death. This is 1 reason cancer cells can divide without stopping
- **Getting food.** Cancer cells can also communicate with normal cells. They do this to build up new blood vessels, which nourish the tumor as it grows. Blood brings oxygen to the cancer cells and takes away waste
- **Hiding out.** Another way cancer cells live and grow is by avoiding the immune system. The immune system protects the body. Immune cells attack and kill disease cells. But cancer cells can trick immune cells and hide from them

Changes in the genes

Cancer is called a genetic disease because it starts in the genes. The purpose of genes is to tell our cells how to grow and divide. When changes happen in genes, cancer can arise. Genetic changes can be inherited from our parents or come from environmental factors like tobacco smoke or the sun's UV rays.

In each person with cancer, the genetic changes are unique. These develop as the cancer grows. Different cells within a single tumor can have more than 1 type of genetic change.

Cell changes to watch

Not all changes in the shape, number, and pattern of cells turn into cancer. Your doctor may keep an eye on any of these 3 cell changes:

- **Hyperplasia.** This is fast cell division and growth. Under the microscope, the cells look normal
- **Dysplasia.** This can be more serious than hyperplasia. It also involves fast buildup of extra cells. In dysplasia, the cells look abnormal under the microscope
- **Carcinoma in situ.** This is even more serious but is not cancer. The reason is that the abnormal cells do not spread or invade other tissues. But sometimes your doctor will treat carcinoma in situ to keep it from becoming cancer

There are more than 100 types of cancer. Some are named for the part of the body where the cancer cells first grow. Others are named for the type of cancer cells.

The word *cancer* can seem scary, but your care team can help you learn more about managing the disease.