What Is Cancer?

Cancer is a medical condition characterized by out-of-control cell growth. (1) It can start anywhere in the body, from the liver to the lungs and every tissue in between. As the cells continue dividing, they may form cancerous tumors, which have the potential to invade other organs. Cancer cells can also spread to other parts of the body, forming new tumors.

According to the National Cancer Institute, nearly 2 million Americans receive a cancer diagnosis each year. (2) The condition is so common that it's the second leading cause of death for adults living in the United States. (3). Although cancer can develop anywhere in the body, some types of cancer are more common than others, including breast, lung, colorectal, prostate, and bladder cancer. (4)

Cancer has a wide range of physical, mental, and financial effects. If a person with cancer is unable to work during treatment, their family members may have to take on new roles. For example, a working parent may have to handle more child-rearing responsibilities than usual. The costs of cancer treatment can also affect a family's financial situation, resulting in increased stress.

What Causes Cancer?

Every cell in the human body goes through a natural process that includes apoptosis, or programmed cell death. Apoptosis eliminates old, damaged, and unnecessary cells. (5) If apoptosis doesn't occur as scheduled, the cells may start growing out of control. This happens when a person has a mutation in at least one of the genes responsible for controlling cell growth and division. (6) Therefore, the main cause of cancer is genetic mutations that interfere with the normal cell cycle.

There are three main types of genes involved in the development of cancer. Tumor suppressor genes aid in the development of the proteins involved in regulating cell division. (7) It's possible for a mutation to render one of these genes inactive, allowing cells to grow out of control.
Proto-oncogenes are also involved in cell growth. (8) When a proto-oncogene mutates, it turns into an oncogene, or a gene capable of causing cancer. Some genes are responsible for repairing DNA damage. They are known as DNA repair genes. Mutations in these genes may cause chromosomal changes that lead to cancer. (9)

Genetic mutations occur for many reasons, including the following: (10)

- Excessive alcohol use
- Obesity
- Radiation exposure
- Tobacco use
- Exposure to cancer-causing chemicals
- Chronic inflammation
- Hormonal changes
- Viruses, parasites, and bacteria

What Are the Symptoms of Cancer?

General symptoms of cancer include fatigue, swollen lymph nodes, night sweats, unintended weight gain or weight loss, and fevers. (11) Additional symptoms depend on what type of cancer a person has. Cancers of the breast may cause nipple discharge, lumps in the breast or under the arm, or changes in the skin covering the breast tissue. These changes may include redness, puckering, dimpling, scaliness, or itchiness.

Oral cancer typically causes bleeding, pain, and/or numbness in the mouth or around the lips. Some people with skin cancer also develop red or white patches inside the oral cavity. Brain cancer may cause headaches, hearing loss, seizures, drooping of the facial muscles, or vision changes. Symptoms typically vary based on the location of the cancer. For example, a tumor that presses on the optic nerve may cause vision changes, as the optic nerve is what controls a person's ability to see. (12)

In people with skin cancer, some of the symptoms may include new moles, changes to existing moles, scaliness, yellowing of the skin (jaundice), or sores that don't heal. (13) Cancer may also cause the following:

- Cough
- Hoarseness
- Difficulty urinating
- Bloody urine
- Painful urination
- Difficulty with swelling
- Abdominal pain
- Nausea
- Vomiting
- Loss of appetite
- Bloody stool

Do I Have Cancer? How Is Cancer Diagnosed?

The first step in getting a cancer diagnosis is a visit with a primary care physician or other health care provider. During this visit, the provider typically conducts a physical exam and asks questions about the patient's symptoms. A healthcare professional may also order blood, urine, or bone marrow tests to check for abnormalities that may indicate the presence of cancer somewhere in the body. (14)

These are some of the most common lab tests for diagnosing cancer:

- **Comprehensive metabolic panel (CMP):** A CMP helps assess the balance of chemicals in the body. (15)
- **Complete blood count (CBC):** The results of a CBC help medical professionals determine if a patient has the right number of red blood cells, white blood cells, and platelets in their blood.

- **Tumor marker testing:** Some cancer cells produce large amounts of tumor markers. Blood testing helps determine if a patient has higher-than-normal levels of these substances.

Health care professionals also use imaging studies to diagnose cancer. The type of imaging ordered depends on the patient's symptoms and the location of the potential cancer. Common imaging methods include ultrasound, computed tomography (CT) scanning, magnetic resonance imaging (MRI), and positron emission tomography (PET).

How to Cope With a Cancer Diagnosis

A new cancer diagnosis brings up many emotions, from anger to sadness. It's helpful to meet with a trained therapist to work through these emotions and get comfortable asking loved ones for help. It's also important to have hope for the future. The National Cancer Institute recommends spending time outdoors, reflecting on spiritual beliefs, and continuing to participate in enjoyable activities. (16) It's also helpful to learn more about cancer from trusted resources, such as cancer survivors or experienced health professionals. People who understand the disease are better-equipped to follow their treatment plans and maintain a positive mindset.

How to Help Someone With Cancer

Loved ones should avoid pushing a person with cancer to discuss their emotions or share details about their symptoms. If the person wants to talk, it's important to listen carefully and avoid passing judgment. Some cancer treatments lead to reduced energy, so it's also helpful for loved ones to offer help with child care, grocery shopping, cleaning, and other chores. Family members and friends who live far away should do whatever they can to help, from keeping in touch via email to arranging to have a meal delivered from a local restaurant. Caregivers can also consider joining caregiver support groups and educating themselves on their loved one's diagnosis to reduce their own stress and learn coping skills.

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