

Highlights: Overview of Findings Regarding Cancer

The poisons in cigarette smoke spread quickly from the lungs through the bloodstream and reach cells throughout the body. Cigarette smoke damages tissue and cell structure and interferes with the body's normal processes. Doctors have known for years that smoking causes cancer. In fact, smoking causes more than 85% of lung cancers and can cause cancer almost anywhere in the body. A third of all cancer deaths in the United States are linked to tobacco use.

Tobacco Smoke Contains Chemicals That Cause Cancer

- Many of the more than 7,000 chemicals in cigarette smoke can cause cancer, individually and in combination with each other. These chemicals damage cells, enable damaged cells to grow and develop, and discourage the body's normal reactions that fight the growth and reproduction of abnormal cells.
- Using tobacco can cause cancer in the lungs; mouth, nose, and throat; larynx; trachea; esophagus; stomach; pancreas; kidneys and ureters; bladder; cervix; and bone marrow and blood.

DNA Damage

- DNA is the genetic code for every cell in the human body—the body's "instruction manual." Genes control normal cell growth and function, but when DNA is damaged by tobacco smoke, cells can begin growing abnormally and create a cancer.
- Normally, the body's immune system responds to abnormal cell growth and sends out "tumor fighters" to attack and kill these cells. However, new research shows that the toxic chemicals in cigarette smoke weaken this process and make it easier for abnormal cells to keep growing and reproducing. In this way, exposure to tobacco smoke can cause cancer and then inhibit the body's efforts to fight it.

Heredity

- Family history—heredity—may play a role in how smoking causes cancer. Cancer-causing chemicals in cigarette smoke interact with the body's DNA. Current scientific studies support a possible connection between specific genes, smoking status, and the risk for lung and bladder cancer.

Quitting Cuts Cancer Risk

- All cigarettes are harmful, and all exposure to tobacco smoke causes damage within the body. There is no safe level of exposure to tobacco smoke, and there is no safe cigarette. Even smoking a few cigarettes a day or smoking occasionally can increase the risk for serious diseases, including cancer.
- Quitting smoking entirely is the only proven strategy for reducing tobacco-related cancer risks. Smokers who quit entirely cut their chances of cancer of the mouth, throat, esophagus, and bladder in half within 5 years. Within 10 years, the risk of dying from lung cancer drops by half.

Disclaimer: Data and findings provided on this page reflect the content of the 2010 Surgeon General's Report (*How Tobacco Smoke Causes Disease: The Biology and Behavioral Basis for Smoking-Attributable Disease: A Report of the Surgeon General*). More recent information may exist elsewhere on the Smoking & Tobacco Use Web site (for example, in fact sheets, frequently asked questions, or other materials that are reviewed on a regular basis and updated accordingly).