



## How Smoking Harms People of All Ages

- ▶ Toxic ingredients in cigarette smoke travel throughout the body, causing damage in several different ways. (p. 616)
- ▶ Nicotine reaches the brain within 10 seconds after smoke is inhaled. It has been found in every part of the body and in breast milk. (p. 616)
- ▶ Carbon monoxide binds to hemoglobin in red blood cells, preventing affected cells from carrying a full load of oxygen. (p. 616)
- ▶ Cancer-causing agents (carcinogens) in tobacco smoke damage important genes that control the growth of cells, causing them to grow abnormally or to reproduce too rapidly. (p. 44–45)
- ▶ The carcinogen benzo[a]pyrene binds to cells in the airways and major organs of smokers. (p. 616)
- ▶ Smoking affects the function of the immune system and may increase the risk for respiratory and other infections. (p. 616)
- ▶ There are several likely ways that cigarette smoke does its damage. One is oxidative stress that mutates DNA, promotes atherosclerosis, and leads to chronic lung injury. Oxidative stress is thought to be the general mechanism behind the aging process, contributing to the development of cancer, cardiovascular disease, and COPD. (p. 619)
- ▶ The body produces antioxidants to help repair damaged cells. Smokers have lower levels of antioxidants in their blood than do nonsmokers. (p. 618–619)
- ▶ Smoking is associated with higher levels of chronic inflammation, another damaging process that may result from oxidative stress. (p. 619)

### Citation

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**Smoking remains the leading cause of preventable death and has negative health impacts on people at all stages of life. It harms unborn babies, infants, children, adolescents, adults, and seniors.**