

CHAPTER 7	Thought Lab 7.1: Smoking and the Respiratory System Answer Key	BLM 7.3.3A
ANSWER KEY		

Answers to Analysis Questions

1. Three harmful effects of smoking on the respiratory system are chronic bronchitis, emphysema, and lung cancer.

Smoking also affects other body systems, three examples of which are given here:

- a) *Reproductive System:* When a pregnant woman smokes a cigarette, chemicals enter the blood of the fetus and paralyze its breathing muscles for several minutes. “Practice” contractions are crucial to proper development of the fetal breathing muscles. Carbon monoxide from cigarette smoke also reduces the amount of oxygen that maternal blood delivers to the fetus. The lack of oxygen reduces the rate of growth of the fetus. Thus, the average birth weight of babies born to smoking mothers is lowered and they often experience breathing problems because of poor development of the diaphragm and intercostals muscles.
 - b) *Circulatory System:* Carbon monoxide from smoke increases “bad” blood cholesterol and reduces “good” cholesterol levels. The increased mucus in the lungs caused by irritants in smoke reduces lung capacity by blocking the airways, causing less oxygenation of blood in the lungs. As a result, heart rate increases as it compensates for lower oxygen levels in the blood. Nicotine in smoke causes irregular heart beats. Other effects of smoke are vasoconstriction and hardening of the arteries, both of which cause high blood pressure. All of these factors lead to increased risk of heart attack and stroke.
 - c) *Excretory System:* Cigarette smoking is linked to increased risk of cancer in the bladder and kidneys.
2. There are number of reasons that people smoke. Some teens smoke because they learn the habit from family members. Peer pressure and the desire for acceptance by friends who smoke is a very powerful factor. Advertising and movies promote desirable images of smokers as fun-loving and cool. Some girls believe that smoking will prevent weight gain. Nicotine is a highly addictive drug, and once people begin to smoke heavily, quitting is very difficult.
 3. Some technologies are nicotine replacement therapy; counseling and peer support groups; and lifestyle changes such as increased exercise and avoidance of public places such as bars and casinos where other people smoke.