

Unit 4 IP: Case Study 2 (Lung Cancer)

Cigarette smoking remains the leading preventable cause of death in the United States, causing an estimated 438,000 deaths—or about 1 out of every 5 smokers—each year (Woloshin et al., 2008).

Mr. Amos is 57 years old and has been smoking for the past 30 years of his life. A recent doctor's visit revealed that Mr. Amos has stage 3 lung cancer, characterized by his symptoms of nagging chest pain, fatigue, coughing up blood, substantial weight loss, and increased blood carbon dioxide levels. The doctor informed Mr. Amos that had he quit his smoking habit several years ago, he would have reduced his risk for developing lung cancer later in life. Mr. Amos immediately began treatment for the lung cancer that had metastasized to his lymph nodes.

Answer the following 3 questions regarding this case study:

1. Briefly describe the respiratory system. What main components in cigarettes affect the respiratory system? Explain the effect of 2 compounds from cigarette smoke on specific organs, cells, and processes in the respiratory system.
2. There are alternate mechanisms of transporting carbon dioxide (CO₂) and oxygen (O₂) in the blood. Explain how smoking might lead to increased levels of carbon dioxide in the blood.
3. Can smoking affect other organ systems of the body? Give specific examples, and briefly explain your answer.

Please see assignment details for deliverable and formatting guidelines.

Reference

Woloshin, S., Schwartz, L. M., & Welch, H. G. (2008). The risk of death by age, sex, and smoking status in the United States: Putting health risks in context. *JNCI: Journal of the National Cancer Institute*, 100(12), 845–853. <https://doi.org/10.1093/jnci/djn124>