

**Saladin 7E**  
**Answer Key**  
**Chapter 5, Histology**

**Testing Your Comprehension**

1. No, she is not consciously contracting her uterus. The uterus is composed of smooth muscle, over which people rarely have any conscious control. When she “pushes,” she is contracting the skeletal muscles of her abdomen and thereby aiding the uterus in expelling the baby.
2. No, this is not an exception to the cell theory. These extracellular materials are made by the cells in the tissue, so even their functions ultimately derive from cellular function.
3. When the joint is not exercised, the cartilage cells can suffer both from an accumulation of metabolic wastes and from poor oxygen and nutrient delivery. The delivery of these metabolic requirements and the removal of wastes are both aided by water being periodically soaked up by the cartilage and squeezed out of it. Without this action, cartilage cells die and the tissue degenerates.
4. The simple squamous epithelium of the alveoli is thinner than the pseudostratified epithelium in the larger divisions of the respiratory tract, so it is less of a barrier to the diffusion of gases between the air and blood.
5. Bone would heal faster than cartilage because it is permeated with blood vessels, whereas cartilage is devoid of blood vessels. Thus, bone receives a better supply of oxygen, organic nutrients, growth factors, and other necessities than cartilage does. Simple columnar epithelium heals faster than stratified squamous epithelium because in the former type, every cell is close to the subepithelial connective tissue, where the nearest blood vessels are located.