

Saladin 7E
Answer Key
Chapter 26, Nutrition and Metabolism

Testing Your Comprehension

1. By blocking electron transfer at this point, cyanide blocks most of the body's ATP synthesis. The body contains enough ATP to support only a few minutes of life. It would be ineffective to give supplemental oxygen because, if the mitochondria are poisoned by cyanide, they still cannot transfer electrons to it.
2. Glucagon, epinephrine, and growth hormone act synergistically to promote glycogenolysis and lipolysis, releasing glucose and fatty acids into circulation. While mobilizing glucose, growth hormone antagonizes the effect of insulin, which would otherwise promote glucose storage by means of glycogenesis.
3. Even if Mrs. Jones is correct that she eats less than her husband and son, women in general have lower average metabolic rates than men and gain more weight for the same caloric intake. Moreover, her son is younger than she is and would also have a higher metabolic rate than she does for that reason.
4. Vitamins are not a significant source of energy. The energy in one's diet comes mainly from carbohydrates and fats and to some extent from proteins, but not from vitamins or minerals.
5. The liver disposes of bilirubin and thyroid hormone, so any degenerative liver disease such as hepatitis interferes with this function and allows those substances to accumulate in the body fluids.