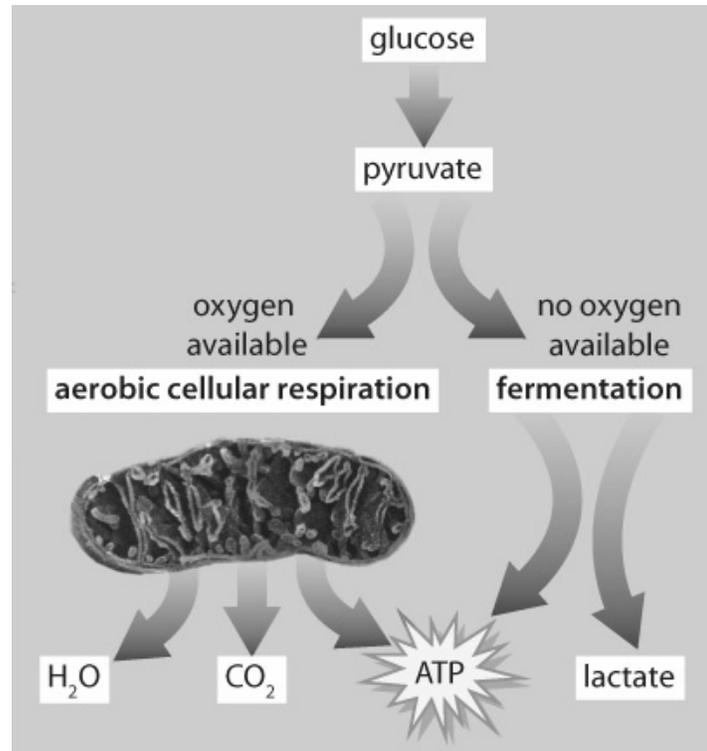


ATP from Aerobic Cellular Respiration and Fermentation

Once energy from ATP and creatine phosphate stored in working muscle fibres is exhausted, ATP is generated from the breakdown of glucose and fatty acids through aerobic and anaerobic respiratory pathways. To keep contracting, the muscle increases aerobic cellular respiration and carries out fermentation as oxygen becomes scarce.



In the contracting muscle, ATP is broken down to ADP + P as energy is spent on movement and heat is released.

1. Explain how red muscle is well adapted to accommodate a high rate of cellular respiration.

ATP from Aerobic Cellular Respiration and Fermentation

2. Involuntary shivering occurs when body temperature decreases. Why is this response an advantage for survival?

3. Recalling your knowledge of the circulatory system, explain how wasted heat from strenuous exercise is dissipated from the body.

4. In fermentation, ATP is generated without oxygen. It may seem that this involves getting something for nothing. Is this true? Explain.
