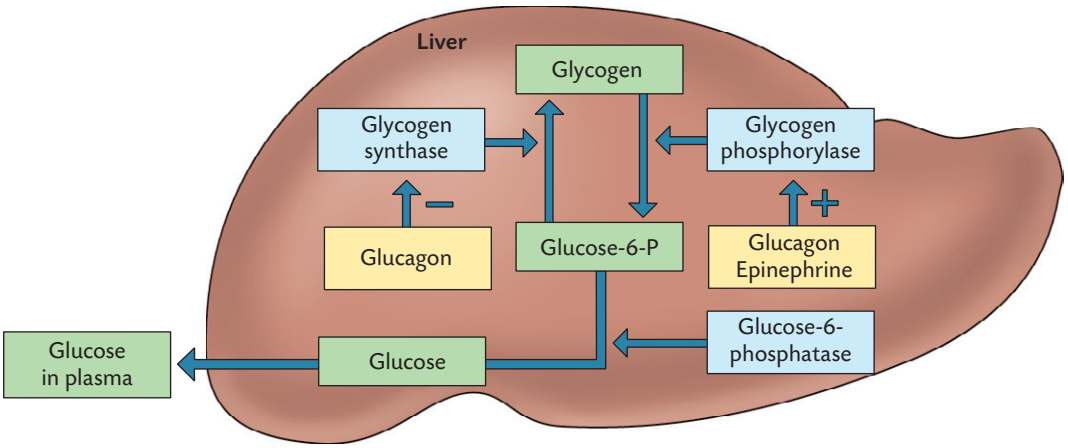


***Figure 16.11*** Effects of epinephrine on hepatic mobilization of glucose from glycogen. Effects of glucagon are also shown.

Glucocorticoids are required for synthesis of enzymes involved in gluconeogenesis and lipolysis

well. Indeed, the concentrations of fatty acids may increase by five to tenfold, thus far exceeding the increase in the glucose concentration. The cellular catabolism of FFA is proportional to their plasma concentrations, and is extensive in many stressful situations. Thus, the effects of epinephrine on metabolism are similar to those of glucagon, with the exception of the stimulatory effect of glucagon on gluconeogenesis (p. 636).

## Glucocorticoids

Glucocorticoids are essential for the promotion of both gluconeogenesis and lipolysis during starvation. Glucocorticoids play a permissive role (p. 248) in these processes, because transcription of the genes for many of the necessary enzymes requires the presence of these hormones at low concentrations. In the absence of glucocorticoids, death due to hypoglycemia ensues.

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**44** How are the plasma concentrations of fatty acids and glucose affected by epinephrine and increased activity of the sympathetic nervous system?

# Further Reading

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