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Estrogens and the regulation of glucose metabolism

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Estrogens and the regulation of glucose metabolism



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**Several additional mechanisms have been postulated by which estrogens can regulate glucose metabolism.** Estrogens may improve insulin action by mitigating oxidative stress and reducing mitochondrial ROS production . Another mechanism by which ER can regulate glucose metabolism is the activation of PPAR $\gamma$ , a master regulator of insulin/glucose metabolism.

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**ERs** are thought to play a critical role in the regulation of glucose metabolism by estrogen in each of these metabolic tissues. Differential effects of ER $\alpha$  activation on glucose and fatty acid metabolism in skeletal muscle, adipose tissue, and liver.

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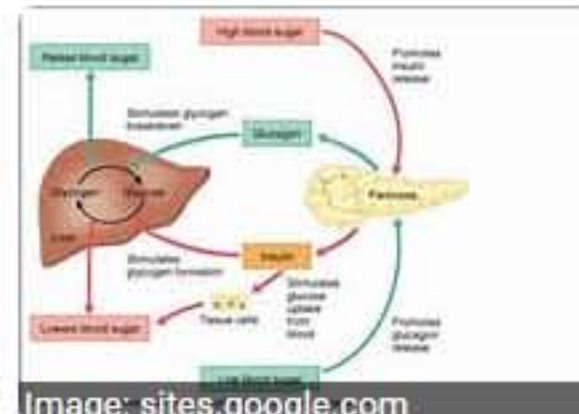
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**Estrogens through their intracellular receptors regulate various aspects of glucose and lipid metabolism.** The effects of estrogens in metabolism can be mediated by their receptors located in different areas of the brain such as the hypothalamus, which is involved in the control of food intake, energy expenditure, and body weight homeostasis.



**Author:** A. Coyoy, C. Guerra-Araiza, I. Camacho-Arroyo

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