



# YALE NATIONAL INITIATIVE

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Curriculum Units by Fellows of the National Initiative  
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## **The Role of Hormones in Homeostasis**

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The endocrine system relies on an intricate network of chemical messengers called hormones to control growth, development, and metabolism from cradle to the grave. One of the key components of the endocrine system is its ability to maintain homeostasis. When the body deviates from a set-optimal point, this system brings it back to normal. There are devastating consequences when they body cannot restore balance. This unit provides a survey of the endocrine system, and how positive and negative feedback controls our body. This topic involves the analysis of positive and negative feedback loops and what happens when their delicate balance is disrupted. Examples of diseases like acromegaly, diabetes insipidus, Hashimoto's disease, and low testosterone are discussed in conjunction with feedback loops. This unit ends with a look at medical interventions and the use of anabolic steroid abuse in athletics. Students explore the above concepts using modeling, jigsaw reading, and other techniques compliant with Common Core State Standards for literacy. The content and activities in this unit are meant for high school students in biology or anatomy and physiology, but can be scaled to suit most grade levels.

(Developed for Human Body Systems, grades 10-11; recommended for Anatomy and Physiology Elective; Biology, grade 10; Health Courses, grades 9-12; and middle school Biology; grades 6-8)

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