

LS-HHMI Outreach Summer Curriculum Project Classroom Resource Information Form

Title	Homeostasis: Negative feedback pathways in the human body		
Resource Type	Lesson Plan <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Lab Activity <input type="checkbox"/> Homework Assignment <input type="checkbox"/> Correlations <input type="checkbox"/> Other <input type="checkbox"/> <Specify>		
Description	This resource should be used by teachers as an introduction to human anatomy and physiology, with particular focus on homeostasis and the inter-relatedness of organ systems. This resource includes 2 lesson plans, with an accompanying powerpoint presentation and kinesthetic class activity.		
Author(s)	Karyn Coulon		
Author Institution(s)	Masconomet Regional High School		
Objective	Students will understand the interrelatedness of the human organ systems through exploring homeostatic mechanisms. Students will explain how negative feedback systems work. Students will be able to compare and contrast opposing hormones.		
Key Concepts	The human body works through a variety of negative feedback pathways. Many organ systems work together to achieve homeostasis. The nervous system and endocrine system are the body's communication networks		
Student Prep	Students will engage in a pre-lesson activity where they will identify stimulus, receptor, integrating center, effector, and response of given homeostatic mechanisms.		
Materials	Computer and projector for powerpoint presentation Card stock for printing game pieces		
Grade Level(s)	This resource is designed for entry level Biology, grades 9-10. It can be modified for grades 11-12, Advanced Biology or Anatomy and Physiology.		
Teacher Prep Time	1 hour to prepare activity materials	Class Time	2-3 class periods
National Standards	<To which National Science Education Standards does the resource correlate?>		
State Standards	<p>Anatomy and Physiology <i>Central Concepts:</i> There is a relationship between the organization of cells into tissues and the organization of tissues into organs. The structures and functions of organs determine their relationships within body systems of an organism. Homeostasis allows the body to perform its normal functions. 4.7 Recognize that communication among cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells. 4.8 Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.</p>		
Sources	<If the resource is derived or adapted from previously published material, cite the source(s) here.>		
References	Part of this lesson was adapted from a lesson in biofeedback loops designed by Susan Mickey, a Biology teacher at Salem High School, Salem MA. All images generated by Microsoft Clip-Art Gallery		

Assessment	<Make recommendations for assessment>
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