Instructor's Response(s) to Discussion Question(s) - Module 1

Discussion Question 1

What is the most important organ or organ system of/in the human body? Please briefly explain/ justify your choice (a few sentences should do). Please **post your response by 6:00 PM of Day 2 of the Module.**

Some folks might choose the heart, since without it blood will not circulate, and you will die (actually, that is not true; ask me about this when we cover the material on the heart as a pump). Others might choose the brain, since the brain controls and coordinates all body functions (not entirely true). Still others might choose the lungs, since without them you will die. A case for "most important organ or organ system of/in the human body" could also be made for other systems – e.g., the skin, the endocrine system, the gut, etc.

The point of this question, which you had to answer without yet having studied physiology, is to drive home the idea that ALL of the body's systems are important AND that they act together, in a coordinated fashion, to allow us to survive.

Discussion Question 2

In video 1 you were introduced to physiological feedback loops as a means of maintaining homeostasis; both examples in the video showed negative feedback loops. Can you think of any examples of physiological feedback loops showing **positive** feedback? If so, what is your example? Please briefly explain/justify your response (a few sentences should do). Please **post your response by 6:00 PM of Day 4 of the Module.**

There are several examples[1] of positive feedback in physiology; some of these are (in no particular order of importance) …

1. Formation of a blood clot
   - A. The entirety of the blood coagulation/clot formation system is quite complicated (see, e.g., items 4 and 5 in reference 1, below). A short description of any of the many positive feedback loops in the system, identifying the stimulus, afferent and efferent pathway(s), and detected variable, would have been fine.
2. Parturition
   - A. Again, a complicated system; see item 3 in reference 1, below. A short description of the oxytocin loop, identifying the stimulus, afferent and efferent pathway(s), and detected variable, would have been fine.
3. Action potential generation
   - A. We'll look at this in (some) detail in Week 2. A brief description of regenerative sodium ion entry into the cell, identifying the stimulus, afferent and efferent pathway(s), and detected variable, would have been fine.

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[1] See, e.g., Abdel-Sater KA, Physiological Positive Feedback Mechanisms, Am J Biomed Sci, 2011 3(2): 145-155

Rev 0, 8/7/17 - adapted from Rev 1.2 of Fall 2016
Rev 1, 8/17/17 - formatting; no changes to content
Rev 2, 7/13/18 - from Spring 2018, update for 601