Lab 7: The Immune System

GOALS:

After doing this lab you should be able to

- > List nonspecific defenses of the human body against infection.
- > Describe the nonspecific process of an inflammatory response.
- Describe how the lymphatic system is organized and how substances are transported through it.
- Contrast the nonspecific responses with the specific immunity responses of the human body.
- Compare and contrast humoral immunity (initiated by B-cells) and cell-mediated immunity (initiated be T-cells).
- > Describe the interaction between antigens and antibodies.
- > Describe the actions of helper T-cells and cytotoxic T-cells.
- > Explain how our bodies can develop immunity against specific diseases.

Key Terms:

Pathogen	Immunity
Nonspecific defenses	humoral immunity
Macrophages	cell-mediated immunity
Phagocytosis	memory cells
Compliment proteins	effector cells
Inflammatory response	cell lysis
Histamine	neutralization
Lymphatic system	agglutination
Lymph	cytotoxic T cells
Lymphocytes	helper T cells
Antigen	antigen-presenting cells (APC)
Antigen receptors	self-nonself complex
B-cells	vaccination
T-cells	

I. Major Concepts: Class Notes and Discussion

For this lab you will need to refer to your textbook for answers to some of the questions and handouts given in class. You will find this in Starr Taggart edition 11 unit 39 (Immunity).

II. Reading and Presentations

- For this part of the lab, you will be the teachers. You will break into 4 separate groups. Each group will be given a paper to read and then teach the concept to the rest of the class.
- > A successful presentation will earn 2 extra credit points for each person in the group.
- To be considered a successful presentation you must follow the instructions included with your reading material and fulfill the following criteria:
 - 1. You must introduce your topic to the class.
 - 2. Your group can role-play to teach your topic.
 - 3. You must have a narrator to explain what is going on in the role play of the topic
 - 4. You must explain any new vocabulary.
 - 5. You need to keep your presentation to a maximum of 5 minutes.
 - 6. You need to wrap-up your presentation by reviewing your presentation and you can use any of the provided overhead visuals to highlight the teaching.
- > The topics are:
 - 1. The inflammatory response

- 2. How antibodies inactivate antigens
- 3. The activation of helper T-cells
- 4. The action of activated helper T-cells & cytotoxic T-cells

III. Jeopardy: The Immune System

For this part of the lab we will be playing jeopardy. We will form teams (maybe the same groups that you were in) and I will be the MC. For the group that wins at jeopardy, they will get 5 extra credit points, 2nd place gets 4 extra credit points, 3rd place gets 3 and last place gets 2 extra credit points. We will play this until the end of the lab or until we get to final jeopardy to determine the winners of the game!!