

Answer key for Day 2 and 3 clickers.

Day 2.

Q1. B.

The cells and proteins that participate in the innate responses are already present and do not need to divide or differentiate. The immune system can increase production of these cells and proteins during infection.

Q2. A

The thymus is where all T cells mature. It is an essential organ for the development of our immune system since we do not live in a sterile environment.

“Nude mice” – mice that have a genetic defect so that the thymus does not develop, do not have mature T cells. They do have the T cell precursors, and these will develop into mature T cells if a thymus transplant is done. Without a thymus, these mice must be kept in sterile environments, otherwise they succumb to infection.

Q3. B

This is the definition of the cell type.

Q4. E

If a person had their bone marrow destroyed, the hematopoietic stem cell would be destroyed, and no blood cells would develop at all – no red blood cells and no white blood cells.

Q5. C

This question is a bit too early. You will see in Topic 3 that T cells are involved in both CTL responses (as CTL and T helper 1 cells) and in antibody responses (as T helper 2 helping the B cells). The innate responses don't need T cells, so these will function properly.

Day 3.

Q1. D

This is the best answer of the lot.

Q2. E

MHC class II binds peptides derived from antigen (pathogens, proteins etc) that have been phagocytosed and degraded, then loaded onto the MHC class II protein.

A better wording of the question would be: MHC class II molecules bind to peptides derived from \_\_\_\_\_ and present them to \_\_\_\_\_.

Q3. E

T cell receptors are always membrane bound. Be careful to pay attention to the wording – T cell receptor vs T cell receptor complex. In science, the presence or absence of a word can change the meaning of a sentence drastically.

Q4. C

CD4 and CD8 are both expressed on developing thymocytes (when they are considered immature T cells). Once a T cell has matured and left the thymus, it expresses only one of these proteins. A T cell that is described as mature and naïve has not yet been activated by antigen. These cells would be found in the lymph node and spleen. Actually, most the mature T cells in your body have probably never been activated.

Q5. Same question as Day 2.