THE IMMUNE SYSTEM

Student Pages

Produced by Regenerative Medicine Partnership for Education
Duquesne University
Director John A. Pollock • pollock@duq.edu
Art Director Joana Ricou • jiricou@gmail.com

Principal funding from Science Education Partnership Awards
National Center for Research Resources
National Institutes of Health

Content Developers Gerra Bosco and Brianne Miller
Movie Guide

Join 7-year old Sylvie on a journey as she discovers the wonders of the immune system!

Learn about:

◊ Eating and being from the depths of the ocean to inside the human body
◊ How the immune system may have given rise to juvenile diabetes

Sylvie’s Diagnosis

1. ___________ is naturally produced by the body’s islet cells and helps your body use the sugar in your blood for energy.

2. ___________ is a disease that occurs when the body’s islet cells have been destroyed and so cannot produce insulin.

The History of the Immune System

3. Billions of years ago, all living things lived in the ocean as single cells, such as ___________.
   a. B-cells       b. bacteria       c. nuclei

4. The ___________ ___________ determines which cells belong in the human body and which do not.

5. Swallowing cells began to line the gut to stop what two types of harmful things from entering the body? Answer this question with a complete sentence.

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
How the Immune System Works

6. Write the letter of the answer that is described by each sentence.

<table>
<thead>
<tr>
<th>I.</th>
<th>These immune cells work together with swallowing cells to gather information about intruders in the body.</th>
<th>a. Antibodies</th>
</tr>
</thead>
<tbody>
<tr>
<td>II.</td>
<td>When a B-cell is activated, it begins to divide and release these proteins, which mark outsiders to be swallowed.</td>
<td>b. B cells</td>
</tr>
<tr>
<td>III.</td>
<td>These cells act like swallowing cells but can only swallow one type of outsider.</td>
<td>c. T cells</td>
</tr>
</tbody>
</table>

B-cells, T-cells and the Immune System

7. B cells and T cells travel through the lymph system and patrol the body. Draw a B cell releasing antibodies.

8. ___________________________ is the most important part of our immune system’s intelligence and keeps you from getting sick from the same thing twice.
The Immune System and Diabetes

9. When a person has diabetes, islet cells are destroyed by a person’s own immune system. Why do doctors think this happens? Answer this question with a complete sentence.

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

10. Once islet cells are attacked, the pancreas stops producing insulin. What two effects happen as a result?

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

11. Type 1, or Juvenile, Diabetes occurs in about 1 out of ________ kids world-wide.