

Your Immune System: What You Need to Know

Your immune system is amazing. It protects your body from outside invaders, including bacteria and viruses.

There are cells floating around your bloodstream that know other good cells and find bad cells that can make you sick. Bad cells include viruses, bacteria, and parasites. These are called *antigens*. The good cells are called *white blood cells*.

When your immune system senses these antigens, it sends out white blood cells called B cells. B cells do two things. They eliminate antigens or create *antibodies* to attack specific antigens.

The immune system is smart, too. Once it has made an antibody to fight a specific antigen, it will always remember. It does this with chicken pox and the mumps.

What Is Autoimmunity?

Autoimmunity is when the immune system turns against the body itself. It is not uncommon. It can be serious.

Autoimmunity can happen to anyone. Most are treated with medications that try to stop the body from attacking itself.

What Is an Autoimmune Disease?

An autoimmune disease happens when the immune system attacks the body and doesn't stop. This can really hurt people. For example, some people easily get skin problems.

Autoimmune diseases can strike anyone. Three women get autoimmune diseases for every one man who gets one. And most autoimmune diseases happen to women who are at an age when they can have babies. Fifty million Americans have autoimmune diseases. Most are treated with medicine or special diets.

Autoimmune diseases are important to know about. But you shouldn't lose sleep over them. It's just important that you know what they are. You may meet someone who has an autoimmune disease. Now you'll know what it means.



Questions:

1. Which type of blood cell fights foreign invaders in your body? _____
2. True or false: Autoimmune diseases mostly strike old men. _____
3. Use text details to explain why it is important for your body to develop antibodies to foreign invaders, like the mumps or chicken pox. _____

4. True or false: Autoimmune diseases can be mild or life threatening. _____
5. Use details in the text to tell why it is important to know about your immune system and autoimmunity. _____

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Answers

1. White blood cells
2. False
3. Answers may vary, but students should mention that some antibodies remember antigens and can more easily fight them if you are exposed to such things again.
4. True
5. Answers will vary.

Learn more about autoimmune disease at www.aarda.org.

What If the Immune System Attacks Itself?

The immune system usually protects the body. But sometimes attacks itself. When this happens, autoimmune diseases can occur in almost any part of the body. Parts we can see, like the skin, and parts we can't see, like the heart, may be affected.

Autoimmune diseases can slowly destroy a certain type of organ or tissue. They can also make an organ grow too large or interfere with how it works. An example is when the immune system attacks the pancreas, which stops making insulin, so a person develops type 1 diabetes. A faulty immune system can also cause problems all over the body. An example is the pain and swelling in rheumatoid arthritis.

There are more than 100 autoimmune diseases, including the two mentioned above. Other common ones are Crohn's disease, celiac disease, lupus, alopecia, psoriasis, and vitiligo. You've probably heard of some of these. But maybe you didn't realize they were caused by the immune system working overtime.

What Causes Autoimmune Diseases?

Autoimmune diseases do not usually have one simple cause. Both genes and the environment play a part. Several different *mutated* (changed) genes may be passed down in families. Having these genes doesn't mean you'll definitely get an autoimmune disease. It just means that you are a bit more likely. Researchers call this "family clustering."

Family members may have several different autoimmune diseases. For example, a child may have

type 1 diabetes, his mother may have lupus, and his aunt may have rheumatoid arthritis. People can also have more than one autoimmune disease at a time. This is why it is very important to know your family medical history and share it with your doctor.

The environment also may trigger autoimmune diseases. This means things from outside the body can affect a person's health. Certain drugs, substances in foods, viruses, bacteria, pollutants, and stress contribute to autoimmune diseases. Researchers are hard at work learning more about these causes.

How Are Autoimmune Diseases Treated?

Doctors use many different treatments for autoimmune diseases. For example, in type 1 diabetes, the pancreas stops making insulin naturally. So people need to give themselves insulin shots. Drugs are also used to calm the immune system—but not too much! The body still needs to defend itself against disease. Other drugs are used to ease pain and swelling from rheumatoid arthritis. If the autoimmune disease affects the blood, transfusions may be given.

Stem cell therapy and bone marrow transplants are experimental treatments. Researchers are working on better drugs and other treatments to improve people's lives. In the future, we hope to have cures for all autoimmune diseases or ways to prevent them in the first place.



Questions:

1. True or false: Autoimmune diseases occur when the immune system attacks itself. _____
2. The number of autoimmune diseases is _____.
a. 25 b. 50 c. more than 100
3. True or false: People can only have one autoimmune disease at a time. _____
4. What treatment is used to calm the immune system? _____ Underline the sentence in the text that supports your answer.
5. Finding new treatments would be great, but what would be even better? _____

What If the Immune System Attacks Itself?

Answers

1. True
2. c
3. False
4. Drugs; students should underline the fourth sentence in paragraph 7.
5. Finding a cure or preventing autoimmune diseases in the first place

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