

What Happens When the Immune System Attacks Itself?

When the immune system doesn't work right, it can cause diseases in almost any part of the body. It can affect parts we can see, like the skin, and parts we can't see, like the heart and nerves. There are two types of autoimmune diseases: organ-specific and non-organ-specific.

Organ-specific diseases 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. In non-organ-specific diseases, the faulty immune system causes 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 diseases. But chances are, 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. Autoimmune diseases are caused by several mutated genes that are passed down in families. Having the genes doesn't mean you're doomed. It just means that you have a tendency to inherit an autoimmune disease. Researchers call this "family clustering."

Members in the same family may have several different autoimmune diseases. 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 helps cause 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 are thought to contribute to autoimmune diseases. Scientists are hard at work learning more about these causes.

How Are Autoimmune Diseases Treated?

Doctors prescribe many different treatments for different 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 decrease the activity of the immune system, but not too much. The body still needs to defend itself against disease. Drugs called corticosteroids are used for this. Drugs called NSAIDs ease pain and swelling from rheumatoid arthritis. If the autoimmune disease affects the blood, transfusions may be given.

Experimental treatments include stem cell therapy to reprogram cells and bone marrow transplants to replace defective immune systems. Research is ongoing to improve people's lives with better treatments and, eventually, to find cures for all autoimmune diseases or prevent them in the first place.



Questions:

1. What parts of the body are affected by autoimmune diseases? Circle one.
a. heart and nerves b. skin c. almost all parts
2. True or false: Organ-specific autoimmune diseases can make organs shrink. _____
3. How many autoimmune diseases are there? _____
4. True or false: If someone in a family has an autoimmune disease, everyone else will get it. _____
5. Name two experimental treatments for autoimmune diseases. _____

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Answers

1. c
2. False; they can make organs grow too large.
3. More than 100
4. False; everyone else will only have a tendency to get the disease.
5. Stem cell research and bone marrow transplants

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