

# *Questions and Answers*

## *About Autoimmunity*

### **What Is Autoimmunity?**

When your body is attacked—perhaps by a virus or germs on a nail you stepped on—your immune system defends you. It sees and kills the germs that might hurt you. But when the system doesn't work right, this process can cause harm. Immune cells can mistake your body's own cells as invaders and attack them. This “friendly fire” can affect almost any part of the body. It can sometimes affect many parts of the body at once. This is called autoimmunity (meaning self-immunity).

### **What Causes Autoimmunity?**

No one knows why the immune system treats some body parts like germs. We do know that you can't catch autoimmune diseases from another person.

Most scientists think that our genes and things in the environment are involved. If you have a certain gene or combination of genes, you may be at higher risk for autoimmune disease. But you won't get the disease until something around you turns on your immune system. This may include the sun, infections, drugs, or, in some women, pregnancy.

### **What Kinds of Problems Are Caused by Autoimmunity?**

Autoimmunity can affect almost any organ or body system. The exact problem one has with autoimmunity (or its diseases) depends on which tissues are targeted. If the skin is the target, you may have skin rashes, blisters, or color changes. If it's the thyroid gland, you may be tired, gain weight, be more sensitive to cold, and have muscle aches. If it's the joints, you may have joint pain, stiffness, and loss of function. You may know which organ or system is affected from the start. But you may not know the site of the attack. In many people, the first symptoms are fatigue, muscle aches, and low fever.

### **Where Does Autoimmunity Strike?**

Because autoimmune diseases can affect almost any organ or system of the body, one way to group them is by the body system(s) they attack. The following is a list (not inclusive) of body systems and the autoimmune diseases that can affect them.

#### **Blood and blood vessels**

- Autoimmune hemolytic anemia
- Pernicious anemia
- Polyarteritis nodosa
- Systemic lupus erythematosus
- Wegener's granulomatosis

#### **Digestive tract (including the mouth)**

- Autoimmune hepatitis
- Behçet's disease
- Crohn's disease

- Primary biliary cirrhosis
- Scleroderma
- Ulcerative colitis

### **Eyes**

- Sjögren's syndrome
- Type 1 diabetes mellitus
- Uveitis

### **Glands**

- Graves' disease
- Thyroiditis
- Type 1 diabetes mellitus

### **Heart**

- Myocarditis
- Rheumatic fever
- Scleroderma
- Systemic lupus erythematosus

### **Joints**

- Ankylosing spondylitis
- Rheumatoid arthritis
- Systemic lupus erythematosus

### **Kidneys**

- Glomerulonephritis
- Systemic lupus erythematosus
- Type 1 diabetes mellitus

### **Lungs**

- Rheumatoid arthritis
- Sarcoidosis
- Scleroderma
- Systemic lupus erythematosus

### **Muscles**

- Dermatomyositis
- Myasthenia gravis
- Polymyositis

### **Nerves and brain**

- Guillain-Barré syndrome
- Multiple sclerosis
- Systemic lupus erythematosus

### **Skin**

- Alopecia areata
- Pemphigus/pemphigoid
- Psoriasis
- Scleroderma
- Systemic lupus erythematosus
- Vitiligo

## **How Are Autoimmune Diseases Diagnosed?**

Autoimmune diseases often don't show a clear pattern of symptoms at first. So diagnosing them can be hard. But with time, a diagnosis can usually be made by using:

### **Medical history**

The doctor will ask about your symptoms and how long you have had them. Your symptoms may not point to one disease. But they can be a starting point for your doctor. You should tell your doctor if you have a family member with autoimmune disease. You may not have the same disease as your family member. But having a family history of any autoimmune disease makes you more likely to have one.

### **Physical exam**

During the exam, the doctor will check for any signs. Inflamed joints, swollen lymph nodes, or discolored skin might give clues.

### **Medical tests**

No one test will show that you have an autoimmune disease. But doctors may find clues in a blood sample. For example, people with lupus or rheumatoid arthritis often have certain autoantibodies in their blood. Autoantibodies are blood proteins formed against the body's own parts. Not all people with these diseases have these autoantibodies. And some people without autoimmune disease do have them. So blood tests alone may not always help. But if a person has disease symptoms and autoantibodies, the doctor can be more sure of a diagnosis. The key is patience. Your doctor may be able to diagnose your condition quickly based on your history, exam, and test results. But the process often takes time. It may take several visits to find out exactly what's wrong and the best way to treat it.

### **How Are Autoimmune Diseases Treated?**

Autoimmunity takes many forms. There are also many treatments for it. Treatment depends on the type of disease, how severe it is, and its symptoms. Generally, treatments have one of three goals:

#### **Relieving symptoms**

If your symptoms bother you, your doctor may suggest treatments that give some relief. Relieving symptoms may be as simple as taking a drug for pain relief. It may also be as involved as having surgery.

#### **Preserving organ function**

When autoimmune diseases threaten organs, treatment may be needed to prevent damage. Such treatments may include drugs to control an inflamed kidney in people with lupus. Insulin injections can regulate blood sugar in people with diabetes. These treatments don't stop the disease. But they can save organ function. They can also help people live with disease complications.

#### **Targeting disease mechanisms**

Some drugs may also be used to target how the disease works. In other words, they can suppress the immune system. These drugs include cyclophosphamide (Cytoxan\*) and cyclosporine (Neoral and Sandimmune). The same immune-suppressing drug may be used for many diseases.

Your doctor may not prescribe a treatment. If your symptoms are mild, the risks of treatment may be worse than the symptoms. You may choose to put off treatment for now. But you should watch for signs that your disease is progressing. Visit your doctor regularly. You need to catch changes before they lead to serious damage.

*\*Brand names included are provided as examples only, and their inclusion does not mean that these products are endorsed by the National Institutes of Health or any other Government agency. Also, if a particular brand name is not mentioned, this does not mean or imply that the product is unsatisfactory.*

### **What Types of Doctors Treat Autoimmune Diseases?**

Treatments for autoimmune diseases vary. So do the types of doctors who provide them. For some people, one doctor will be enough to manage their disease. Others may require a team approach. One doctor might coordinate and give care, and others would treat specific organ problems. For example, a person with lupus might be seen by a rheumatologist. But that person might also see a nephrologist for related kidney problems and a dermatologist for skin problems.

Specialists you may need to see include:

A rheumatologist, who treats arthritis and other rheumatic diseases. These include scleroderma and systemic lupus erythematosus (lupus or SLE).

An endocrinologist, who treats gland and hormone problems. These include diabetes and thyroid disease.

A neurologist, who treats nerve problems. These include multiple sclerosis and myasthenia gravis.

A hematologist, who treats diseases that affect the blood. These include pernicious anemia and autoimmune hemolytic anemia.

A gastroenterologist, who treats problems with the digestive system. These include Crohn's disease and ulcerative colitis.

A dermatologist, who treats problems of the skin, hair, and nails. These include psoriasis, pemphigus/pemphigoid, and alopecia areata.

A nephrologist, who treats kidney problems. These include glomerulonephritis, inflamed kidneys associated with lupus.

### **What Are Some Other Problems Related to Autoimmune Diseases?**

Having a chronic disease can affect almost every part of your life. The problems you might have with an autoimmune disease vary. They may include:

#### **How you look and your self-esteem**

Depending on your disease, you may have discolored or damaged skin or hair loss. Your joints may look different. These can all affect how you look and your self-esteem. Such problems

can't always be prevented. But their effects can be reduced with treatment. Cosmetics, for example, can hide a skin rash. Surgery can correct a malformed joint.

### **Caring for yourself**

Painful joints or weak muscles can make it hard to do simple tasks. You may have trouble climbing stairs, making your bed, or brushing your hair. If doing daily tasks is hard, talk with a physical therapist. The therapist can teach you exercises to improve strength and function. An occupational therapist can show you new ways to do things or tools to make tasks easier. Sometimes regular exercise or simple devices can help you do more things on your own.

### **Family relationships**

Family members may not understand why you don't have energy to do things you used to do. They may even think you are just being lazy. But they may also be overly concerned and eager to help you. They may not let you do the things you can do. They may even give up their own interests to be with you. Learn as much as you can about your disease. Share what you learn with your family. Involve them in counseling or a support group. It may help them better understand the disease and how they can help.

### **Sexual relations**

Sexual relationships can also be affected. For men, diseases that affect blood vessels can lead to problems with erection. In women, damage to glands that produce moisture can lead to vaginal dryness. This makes intercourse painful. In both men and women, pain, weakness, or stiff joints may make it hard for them to move the way they once did. They may not be sure about how they look. Or they may be afraid that their partner will no longer find them attractive. With communication, good medical care, and perhaps counseling, many of these issues can be overcome or at least worked around.

### **Pregnancy and childbearing**

In the past, women with some autoimmune diseases were told not to have children. But better treatments and understanding have changed that advice. Autoimmune diseases can affect pregnancy, and pregnancy can affect autoimmune diseases. But women with many such diseases can safely have children. How a pregnancy turns out can vary by disease and disease severity. If you have an autoimmune disease, you should consult your doctor about having children.

### **Where Can People Find More Information About Autoimmunity?**

Various parts of the NIH provide information on different aspects of autoimmune diseases. Many nonprofit organizations have patient resources, local chapters, and support groups. Your own doctor can best tell you about your own medical condition.

*Source: National Institute of Health*