

Autoimmune Diseases

Patient Education Handout
A service for patients

UNDERSTAND the problem

When an intruder invades your body—like a cold virus or bacteria on a thorn that pricks your skin—your immune system protects you. It tries to identify, kill, and eliminate the invaders that might hurt you. But sometimes problems with your immune system cause it to mistake your body's own healthy cells as invaders and then repeatedly attack them. This is called an autoimmune disease. (Autoimmune means immunity against the self.)

To understand autoimmune diseases, it is important to know more about the immune system in general. Your immune system is the network of cells and tissues throughout your body that work together to defend you from invasion and infection. You can think of it as having two parts: the innate and the acquired immune systems.

The more primitive innate (or inborn) immune system activates white blood cells to destroy invaders. The innate system alerts the body to danger when it senses the presence of parts that are often found in many viruses or bacteria. The acquired (or adaptive) immune system develops as a person grows. It "remembers" different invaders so that it can fight them better if they come back. When the immune system is working properly, foreign invaders (antigens) provoke the body to produce proteins called antibodies and specific types of white blood cells that help in defense. The antibodies attach to the invaders so that they can be recognized and destroyed.

Autoimmune diseases refer to problems with the acquired immune system's reactions. In an autoimmune reaction, antibodies, or immune cells, attach to the body's own healthy tissues by mistake, signaling the body to attack them.

WHAT are the signs

Autoimmune diseases can affect almost any part of the body, including the heart, brain, nerves, muscles, skin, eyes, joints, lungs, kidneys, glands, the digestive tract, and blood vessels.

The classic sign of an autoimmune disease is inflammation, which can cause redness, heat, pain, and swelling. How an autoimmune disease affects you depends on what part of the body is targeted. If the disease affects the joints, as in rheumatoid arthritis and psoriatic arthritis, you might have joint pain, stiffness, and loss of function. If it affects the thyroid, as in Graves' disease and thyroiditis, it might cause tiredness, weight gain, and muscle aches. If it attacks the skin, as it does in scleroderma/systemic sclerosis, vitiligo, and systemic lupus erythematosus (SLE), it can cause rashes, blisters, and color changes.

Many autoimmune diseases don't restrict themselves to one part of the body. For example, SLE can affect the skin, joints, kidneys, heart, nerves, blood vessels, and more. Rarely, rheumatoid arthritis can affect your heart, blood vessels, and lungs, in addition to the joint problems it typically causes.

WHO is at risk

No one is sure what causes autoimmune diseases. In most cases, a combination of factors is probably at work. For example, you might have a genetic tendency to develop a disease. Women are more likely than men to develop an autoimmune disease, but it is unclear why. In addition, some environmental factors, including infections, stress, sex hormones (estrogens and androgens), and cigarette smoking, have been associated with some autoimmune diseases. But again, it is generally believed to be a complex combination of many factors that influences the development of an autoimmune disease.

WHICH diseases are autoimmune

Some of the most common autoimmune diseases are rheumatoid arthritis, thyroiditis, SLE, Sjögren's syndrome, and inflammatory bowel diseases.

Rheumatoid Arthritis

Rheumatoid arthritis is an inflammatory disease that causes pain, swelling, stiffness, and loss of function in the joints. It occurs when the immune system, which normally defends the body from invading organisms, turns its attack against the membrane lining the joints. The disease often affects the wrist joints and the finger joints closest to the hand. It can also affect other parts of the body besides the joints. In addition, people with rheumatoid arthritis may have fatigue, occasional fevers, and a general sense of not feeling well.

The course of rheumatoid arthritis can range from mild to severe. In most cases it is chronic, meaning it lasts a long time—often a lifetime. For many people, periods of relatively mild disease activity are punctuated by flares, or times of heightened disease activity. In others, symptoms are constant.

Rheumatoid arthritis can affect virtually every area of a person's life from work life to family life. One study showed that more than a quarter of women stopped working within 4 years after being diagnosed with rheumatoid arthritis. Rheumatoid arthritis can also interfere with the joys and responsibilities of family life and may affect the decision to have children.

Fortunately, current treatment strategies, including pain-relieving drugs and medications that slow joint damage, a balance between rest and exercise, and patient education and support programs, allow most people with the disease to lead active and productive lives. In recent years, research has led to a new understanding of rheumatoid arthritis and has increased the likelihood that, in time, researchers will find even better ways to treat the disease.

Graves' Disease and Hashimoto's Disease

The most common types of autoimmune diseases affecting the thyroid are Graves' disease and Hashimoto's disease. The thyroid is a small, butterfly-shaped gland in the front of the neck below the larynx, or voice box. The thyroid gland makes two thyroid hormones that affect metabolism, brain development, breathing, heart and nervous system functions, body temperature, muscle strength, skin dryness, menstrual cycles, weight, and cholesterol levels.

In Graves' disease, the immune system makes antibodies that attach to thyroid cells and stimulate the thyroid to make too much thyroid hormone, referred to as hyperthyroidism. Common symptoms of Graves' disease include goiter, nervousness or irritability, fatigue, heat intolerance, trouble sleeping, weight loss, and bulging eyes.

Hashimoto's disease, also called chronic lymphocytic thyroiditis or autoimmune thyroiditis, is a form of chronic inflammation of the thyroid gland. The inflammation results in damage to the thyroid gland and reduced thyroid function or hypothyroidism, meaning the gland doesn't make enough thyroid hormone for the needs of the body. The symptoms of Hashimoto's diseases are fatigue, weight gain, cold intolerance, depression, and joint pain.

Both Graves' disease and Hashimoto's disease may be treated by medications, and Graves' disease may require surgery or radiation to stop the thyroid from overproducing hormones. If the diseases have few or no symptoms, there may be no treatment at all.

Systemic Lupus

Lupus is one of many disorders of the immune system known as autoimmune diseases. Systemic lupus erythematosus (SLE) is the form of the disease that most people are referring to when they say "lupus." The word "systemic" means the disease can affect many parts of the body.

Each person with lupus has slightly different symptoms that can range from mild to severe and may come and go over time. However, some of the most common symptoms of SLE include painful or swollen joints (arthritis), unexplained fever, and extreme fatigue. A characteristic red skin rash—the so-called butterfly or malar rash—may appear across the nose and cheeks. Rashes may also occur on the face and ears, upper arms, shoulders, chest, and hands and other areas exposed to the sun. Because many people with SLE are sensitive to sunlight (called photosensitivity), skin rashes often first develop or worsen after sun exposure.

Other symptoms of SLE include chest pain, hair loss, anemia (a decrease in red blood cells), mouth ulcers, and pale or purple fingers and toes from cold and stress. Some people also experience headaches, dizziness, depression, confusion, or seizures. New symptoms may continue to appear years after the initial diagnosis, and different symptoms can occur at different times. In some people with SLE, only one system of the body, such as the skin or joints, is affected. Other people experience symptoms in many parts of their body. Just how seriously a body system is affected varies from person to person.

Diagnosing and treating SLE often require a team effort between the patient and several types of healthcare professionals. The range and effectiveness of treatments for lupus have increased dramatically in recent decades, giving doctors more choices in how to manage the disease. It is important for the patient to work closely with the doctor and take an active role in managing the disease. Once SLE has been diagnosed, the doctor will develop a treatment plan based on the patient's age, sex, health, symptoms, and lifestyle. Treatment plans are tailored to the individual's needs and may change over time. In developing a treatment plan, the doctor has several goals: to prevent flares, to treat them when they do occur, and to minimize organ damage and complications. The doctor and patient should re-evaluate the plan regularly to ensure it is as effective as possible.

Sjögren's Syndrome

Sjögren's (SHOW-grens) syndrome is an autoimmune disease in which disease-fighting cells attack various organs, most notably the glands that produce tears and saliva. Damage to these glands causes a reduction in both the quantity and quality of their secretions. This results in symptoms that include dry eyes and dry mouth. In technical terms, the form of eye dryness associated with Sjögren's syndrome is called keratoconjunctivitis sicca, or KCS, and the symptoms of dry mouth are called xerostomia. Your doctor may use these terms when talking to you about Sjögren's syndrome.

Treatment can vary from person to person, depending on what parts of the body are affected. But in all cases, the doctor will help relieve your symptoms, especially dryness. For example, you can use artificial tears to help with dry eyes and saliva stimulants and mouth lubricants for dry mouth.

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