

Autoimmune Diseases

1st Course
Lecture : 2

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Autoimmune Diseases

- Imagine your body is a castle and your immune system is an army fighting off invaders like germs.
- If the army malfunctions and attacks the castle itself, you may have an autoimmune disease.
- There's no cure for autoimmune diseases, but your healthcare provider will help you find treatments that manage the symptoms you experience.

What are Autoimmune Diseases

- Autoimmune diseases are health conditions that happen when your immune system attacks your body instead of defending it. Healthcare providers sometimes call them autoimmune disorders.

Autoimmune Diseases

- Usually, your immune system is like your body's built-in security system.

It automatically detects substances that shouldn't be in your body (like viruses, bacteria or toxins) and sends out white blood cells to eliminate them before they can damage your body or make you sick.

Autoimmune Diseases

- If you have an autoimmune disease, your immune system is more active than it should be.
- Because there aren't invaders to attack, your immune system turns on your body and damages healthy tissue.

Autoimmune Diseases

- Autoimmune diseases are chronic conditions. This means if you have an autoimmune disease, you'll probably have to manage it and the symptoms it causes for the rest of your life.

Types of Autoimmune Diseases

- There are more than 100 different autoimmune diseases.
- They can affect almost any tissue or organ in your body, depending on where your immune system malfunctions, including your:

Autoimmune Diseases

1. Joints.
2. Muscles.
3. Skin.
4. Blood vessels.
5. Digestive system.
6. Endocrine system.
7. Nervous system.

Autoimmune Diseases

- This isn't a complete list of autoimmune diseases, but some examples of conditions (and where they affect you) include:
 - I. Joints and muscles
 - Rheumatoid arthritis (RA).
 - Lupus.
 - Myositis.

Autoimmune Diseases

2. Skin and blood vessels

- Sjögren's syndrome.
- Psoriasis
- Psoriatic arthritis.
- Dermatomyositis.
- Scleroderma.
- Vasculitis.
- Rheumatoid vasculitis.
- Urticular vasculitis.
- Vitiligo.

Autoimmune Diseases

3. Digestive system

- Crohn's disease.
- Celiac disease.
- Ulcerative colitis.
- Autoimmune gastritis.

Autoimmune Diseases

4. Endocrine system

- Type I diabetes.
- Addison's disease.
- Hashimoto's thyroiditis.
- Graves' disease.

Autoimmune Diseases

5. Nervous system

- Multiple sclerosis (MS).
- Myasthenia gravis (MG).
- Guillain-Barré syndrome.
- Chronic inflammatory demyelinating polyneuropathy (CIPD).

How common are autoimmune diseases?

- Autoimmune diseases are common, especially because there are so many different types.
- Experts estimate that around 1 in 15 people in the U.S. has an autoimmune disease.

What are Autoimmune Diseases symptoms?

- Autoimmune diseases can cause a wide range of symptoms. They can affect your body almost literally from head to toe.
- For example, conditions that affect your **muscles** can cause muscle weakness. You might also have **joint pain**, swelling or feel stiffness if you have a condition like rheumatoid arthritis.

- Type I diabetes causes high blood sugar (hyperglycemia). Some autoimmune conditions affect your vision.
- Many autoimmune diseases cause inflammation, which can include:
 - A feeling of warmth or heat.
 - Discoloration or redness on your skin.
 - Swelling.
 - Pain.

- Lots of autoimmune diseases cause symptoms that come and go (**recur**).
- These episodes of more noticeable or more severe symptoms are called **flares or attacks**.
- Tell your provider if you experience symptoms that seem to recur — especially if certain physical activities, times of day, foods or drinks, or anything else makes them noticeably better or worse.

- Trust your gut. Nobody knows what's normal for your body better than you.
- Visit a healthcare provider if you notice any new symptoms you can't explain, especially if you don't feel like yourself more often than usual.

Causes of Autoimmune Diseases

- Experts don't know for certain what causes autoimmune diseases.
- We know your immune system mistakenly damaging your body instead of protecting it causes the symptoms of an autoimmune disease you experience.
- But researchers are still studying what makes your immune system start hurting you in the first place.

Risk factors of Autoimmune Diseases

- Some studies have found that certain factors (triggers) might increase your risk of developing an autoimmune disease. Some triggers may include:
 1. **Viral infections**, including COVID-19 and Epstein-Barr virus.
 2. **Your sex.** Women are more likely to have autoimmune conditions.



3. Having biological relatives with autoimmune diseases. Some autoimmune conditions are genetic conditions and pass through generations of a biological family.
4. Having one autoimmune disease can increase the odds of developing another one (multiple autoimmune syndrome).



5. **Exposure to chemicals or other environmental factors** (aspects of where you live or work that impact your health) might trigger autoimmune diseases.

6. **Smoking and using other types of tobacco** can cause many health issues, including potentially triggering autoimmune diseases.

Diagnosis of Autoimmune Diseases

- Healthcare providers diagnose autoimmune diseases with a physical exam and
 - by discussing your health history.
 - You might also need some tests.

Autoimmune Diseases

- Your provider will examine your body, especially if you're experiencing symptoms in a specific area. They'll ask about the symptoms you're experiencing and when you first noticed them.
- Tell your provider if you know any of your biological family members have an autoimmune disease.

- Diagnosing an autoimmune disease is often a differential diagnosis.
- This means your provider will test you for several different conditions that can cause the symptoms you're experiencing until they find the cause.
- Your provider might order blood tests to look for specific signs (markers) of autoimmune diseases. These markers are like clues your immune system leaves behind after it damages your body or causes specific issues.

Autoimmune Diseases

- You might need some imaging tests to take pictures of the insides of your body, including:
 1. X-rays.
 2. MRI (magnetic resonance imaging).
 3. CT scan (computed tomography scan).
 4. Ultrasound.

Treatment of Autoimmune Diseases

- Autoimmune diseases can need a variety of treatments. Just like the wide variety of symptoms they cause, which treatments you'll need depends on which condition you have.
- Everyone's immune system, genetics and environment are different. That means the treatments that work for you will be unique.

- Some common treatments to manage autoimmune disease symptoms include:
 1. Pain relievers.
 2. Anti-inflammatory medication like NSAIDs or corticosteroids.
 3. Immunosuppressants.
 4. Physical therapy.
 5. Occupational therapy.
 6. IVIG infusions.
 7. You might need specific treatments based on the condition you have. For example, people with Type I diabetes need insulin therapy and people with celiac disease need to eat a gluten-free diet.

Prognosis of Autoimmune Diseases

Can autoimmune diseases be cured?

- There's no cure for autoimmune diseases. They're chronic (long-term) conditions that usually last your whole life.
- Some autoimmune diseases enter remission, a long period of time between symptom flares. This isn't the same as a cure, but it might mean the symptoms impact your daily routine less often.

Prevention of Autoimmune Diseases

Can you prevent autoimmune diseases?

- There might not be any way to prevent autoimmune diseases because experts aren't sure what causes them.

Living with Autoimmune Diseases

- Everyone's body and journey with an autoimmune disease is different.
- Talk to your healthcare provider about the best ways to manage the symptoms you experience.
- You might need to adjust the kinds of physical activities you do, the foods and drinks you consume or make other tweaks to your day-to-day routine.

Is an Autoimmune Diseases serious?

- Living with an autoimmune disease like lupus, rheumatoid arthritis and multiple sclerosis can be complex and serious.
- Although there are no cures for these diseases, many of their symptoms can be treated, and sometimes they go into remission.
- Stay in touch with your healthcare provider about any advances in understanding and treating autoimmune diseases.

Life expectancy of Autoimmune Diseases

- It's hard to give an estimate of how an autoimmune disease will affect your lifespan (how long you live).
- Some conditions are more serious than others, and can cause fatal complications.
- Conditions like multiple sclerosis and myositis are more likely to be fatal than many autoimmune diseases, but that doesn't mean they always are. Similarly, Type I diabetes can be fatal if it's not managed.

- **When should I see my healthcare provider?**
- Visit a healthcare provider if you're experiencing new or worsening symptoms you can't explain — especially if they affect your ability to do all your usual activities.
- If you've already been diagnosed with an autoimmune disease, tell your provider if it feels like your treatments aren't working as well as they used to or if the symptoms are recurring more often.

When should I go to the emergency room?

- Go to the ER or call 911 (or your local emergency services number) if you experience any of the following severe symptoms:
 1. Trouble breathing or shortness of breath (dyspnea).
 2. Severe chest pain or pressure in your chest.
 3. A headache that starts suddenly and feels unusually serious or intense.



4. Sudden weakness, especially if you can't move.
5. Dizziness that doesn't stop.
6. Pain so severe that you can't stand it.