

## Autoimmune disorders

The immune system is a collection of special cells and chemicals that fight infection-causing agents such as bacteria and viruses. An autoimmune disorder occurs when a person's immune system mistakenly attacks their own body tissues. Autoimmune disorders are broadly grouped into two categories; 'organ-specific' means one organ is affected, while in 'non-organ-specific' disorders, multiple organs or systems may be affected. There are around 80 different autoimmune disorders ranging in severity from mild to disabling, depending on which system of the body is under attack and to what degree. For unknown reasons, women are more susceptible than men, particularly during their childbearing years. It is thought that sex hormones may be at least partly responsible. There is generally no cure, but the symptoms of autoimmune disorders can be managed.

### A range of disorders

Autoimmune disorders can affect nearly every organ and system of the body. Some autoimmune disorders include:

- **Diabetes (Type I)** - affects the pancreas. Symptoms include thirst, frequent urination, weight loss and an increased susceptibility to infection.
- **Graves' disease** - affects the thyroid gland. Symptoms include weight loss, elevated heart rate, anxiety and diarrhoea.
- **Inflammatory bowel disease** - including ulcerative colitis and, possibly, Crohn's disease. Symptoms include diarrhoea and abdominal pain.
- **Multiple sclerosis** - affects the nervous system. Depending on which part of the nervous system is affected, symptoms can include numbness, paralysis and vision impairment.
- **Psoriasis** - affects the skin. Features include the development of thick, reddened skin scales.
- **Rheumatoid arthritis** - affects the joints. Symptoms include swollen and deformed joints. The eyes, lungs and heart may also be targeted.
- **Scleroderma** - affects the skin and other structures, causing the formation of scar tissue. Features include thickening of the skin, skin ulcers and stiff joints.
- **Systemic lupus erythematosus** - affects connective tissue and can strike any organ system of the body. Symptoms include joint inflammation, fever, weight loss and a characteristic facial rash.

### Immune system malfunction

Immune system cells called T lymphocytes (T cells) use special receptors on their surfaces to identify foreign microbes, such as bacteria and viruses. Usually, T cells that react to the tissues of the body are destroyed by the thymus, an organ of the immune system located behind the breastbone. The 'self-attacking' T cells that escape destruction may be activated by a trigger. The exact triggers are unknown, but viral infections and hormones are among the suspects. The rogue T cells then instruct B lymphocytes (B cells) to make antibodies against the particular tissue, organ or system. Such antibodies are called 'autoantibodies'.

### Risk factors for autoimmune disorders

- The exact causes of autoimmune disorders are not known. The risk factors seem to include:
- **Genetics** - a predisposition to autoimmune disorders seems to run in families. However, family members can be affected by different disorders; for example, one person may have diabetes, while another has rheumatoid arthritis. It seems that genetic susceptibility alone is not enough to trigger an autoimmune reaction, and other factors must contribute.
- **Environmental factors** - a family's susceptibility to autoimmune disorders may be linked to common environmental factors, perhaps working in conjunction with genetic factors.

- **Gender** - around three quarters of people with autoimmune disorders are women.
- **Sex hormones** - autoimmune disorders tend to strike during the childbearing years. Some disorders seem to be affected, for better or worse, by major hormonal changes such as pregnancy, childbirth and menopause.
- **Infection** - some disorders seem to be triggered or worsened by particular infections.

## Diagnosis of immune disorders

It can be hard to diagnose an autoimmune disorder, especially in its earlier stages and if multiple organs or systems are involved. Depending on the disorder, diagnosis methods may include:

- Physical examination
- Medical history
- Blood tests, including those to detect autoantibodies
- Biopsy
- X-rays.

## Treatment for immune disorders

Autoimmune disorders in general cannot be cured, but the condition can be controlled in many cases. Historically, treatments include:

- **Anti-inflammatory drugs** - to reduce inflammation and pain.
- **Corticosteroids** - to reduce inflammation. They are sometimes used to treat an acute flare of symptoms.
- **Pain-killing medication** - such as paracetamol and codeine.
- **Immunosuppressant drugs** - to inhibit the activity of the immune system.
- **Physical therapy** - to encourage mobility.
- **Treatment for the deficiency** - for example, insulin injections in the case of diabetes.
- **Surgery** - for example, to treat bowel blockage in the case of Crohn's disease.
- **High dose immunosuppression** - the use of immune system suppressing drugs (in the doses needed to treat cancer or to prevent the rejection of transplanted organs) have been tried recently, with promising results. Particularly when intervention is early, the chance of a cure with some of these conditions seems possible.

## Where to get help

- Your doctor

## Things to remember

- An autoimmune disorder occurs when a person's immune system mistakenly attacks their own body.
- There are around 80 different autoimmune disorders ranging in severity from mild to disabling, depending on which system of the body is under attack and to what degree.
- There is generally no cure, but the symptoms of autoimmune disorders can be managed.

**This page has been produced in consultation with, and approved by:**

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