MEDICAL NEWS TODAY

Dysautonomia: What are the types?

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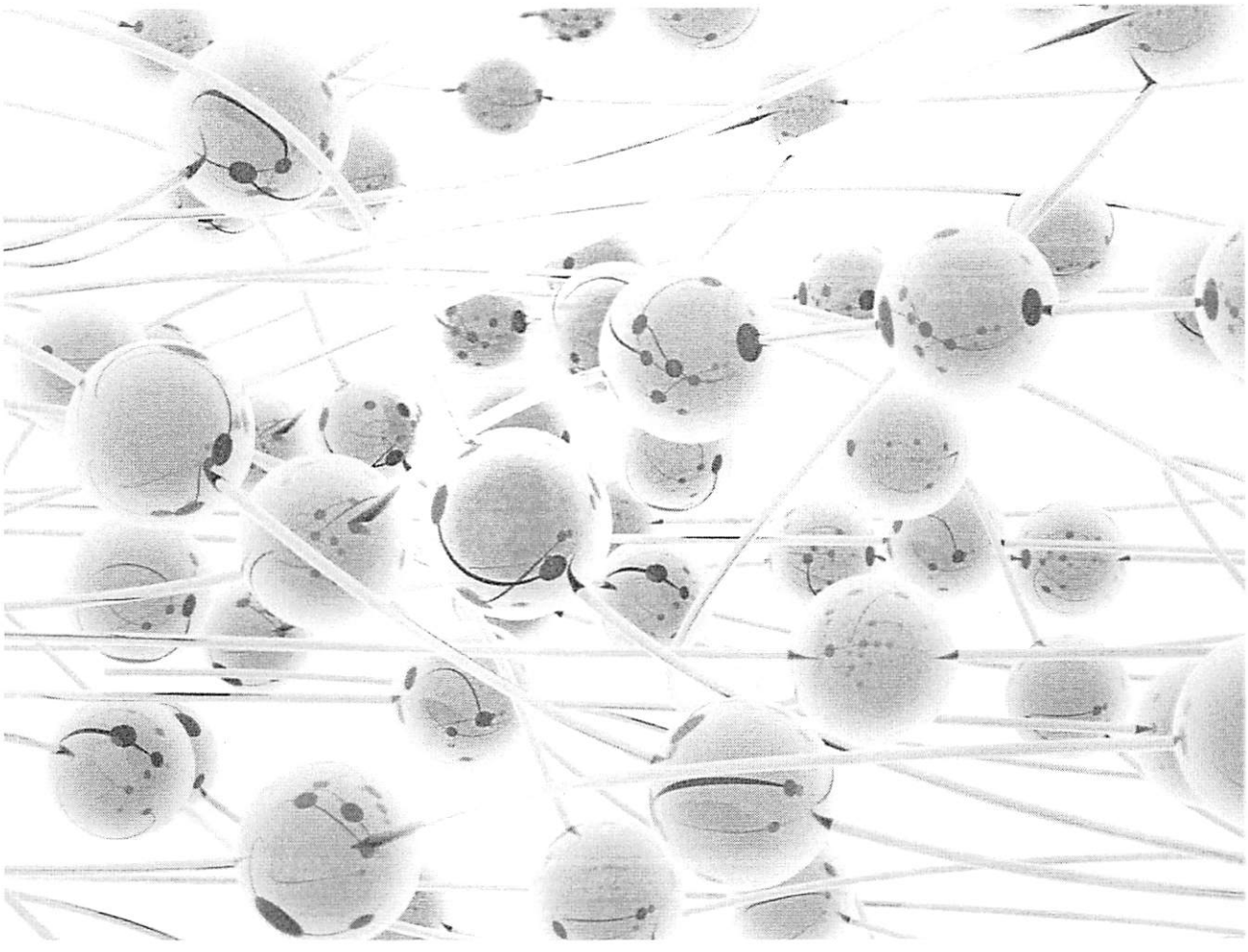

Dysautonomia is a series of conditions affecting the neural network that controls automatic processes such as breathing, pupil dilation, and the heartbeat.

Dysautonomia refers to a wide range of conditions that affect the autonomic nervous system.

Symptoms include fainting, cardiovascular issues, and breathing problems. It is linked to conditions such as Parkinson's disease and diabetes.

Dysautonomias come in many forms, but they all involve the autonomic nervous system (ANS).

The ANS is responsible for maintaining a constant internal temperature, regulating breathing patterns, keeping blood pressure steady, and moderating the heart rate. It is also involved in pupil dilation, sexual arousal, and excretion.

Symptoms of dysautonomia usually appear as problems with these particular systems.

Dysautonomia affects an estimated 70 million people worldwide.

This article looks at some of the different types of dysautonomia, their symptoms, and treatments.

Contents of this article:

Fast facts about dysautonomia

- There are around 15 types of dysautonomia.
- Primary dysautonomia are usually inherited or due to a degenerative disease, while secondary dysautonomias result from another condition or injury.
- The most common types are neurocardiogenic syncope, which leads to fainting. It affects millions of people globally.
- There is no single treatment that addresses all dysautonomias.

Causes

Dysautonomias happen for a range of reasons, as they are often linked to another condition.

Primary dysautonomias are inherited, or they occur due to a degenerative disease.

Secondary dysautonomias happen as a result of an injury or another condition.

Common conditions that can lead to secondary dysautonomia include:

- diabetes mellitus
- multiple sclerosis
- rheumatoid arthritis
- Parkinson's disease
- celiac disease

Types

There are at least 15 different types of dysautonomia.

The most common are neurocardiogenic syncope and postural orthostatic tachycardia syndrome (POTS).

Neurocardiogenic syncope

Neurocardiogenic syncope (NCS) is the most common dysautonomia. It affects tens of millions of people worldwide. The main symptom is fainting, also called syncope. This can occur on occasion only, or it may be frequent enough to disrupt a person's daily life.

Gravity naturally pulls the blood downward, but a healthy ANS adjusts the heartbeat and muscle tightness to prevent blood pooling in the legs and feet, and to ensure blood flow to the brain.

NCS involves a failure in the mechanisms that control this. Temporary loss of blood circulation in the brain causes fainting.

Most treatments aim to reduce symptoms.

For people who faint only occasionally, avoiding certain triggers can help.

Triggers include:

- dehydration
- stress

- alcohol consumption
- very warm environments
- tight clothing

Medication such as beta-blockers and pacemakers may be used to treat persistent or severe cases of NCS.

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Postural orthostatic tachycardia syndrome

Postural orthostatic tachycardia syndrome (POTS) affects between 1 and 3 million people in the United States (U.S.). Around 80 percent of them are female. It often affects people with an autoimmune condition.

Symptoms can include:

- lightheadedness and fainting
- tachycardia, or abnormally fast heart rate
- chest pains
- shortness of breath
- stomach upset
- shaking
- becoming easily exhausted by exercise
- over-sensitivity to temperatures

POTS is normally a secondary dysautonomia. Researchers have found high levels of auto-immune markers in people with the condition, and patients with POTS are also more likely than the general population to have an autoimmune disorder, such as multiple sclerosis (MS), as well.

Apart from auto-immune factors, conditions that have been linked to POTS or POTS-like symptoms include:

- some genetic disorders or abnormalities
- diabetes
- Ehlers-Danlos Syndrome, a collagen protein disorder than can lead to joint hypermobility and "stretchy" veins
- infections such as Epstein-Barr virus, Lyme disease, extra-pulmonary mycoplasma pneumonia, and hepatitis C
- toxicity from alcoholism, chemotherapy, and heavy metal poisoning
- trauma, pregnancy, or surgery

Research into the causes of POTS is ongoing. Some scientists believe it might be due to a genetic mutation, while others think it is an autoimmune disorder.

Multiple system atrophy

Multiple system atrophy (MSA) is less common than POTS and NCS. It is more likely around the age of 55 years.

MSA is estimated to affect between 2 and 5 people in every 100,000. It is often mistaken for Parkinson's disease because the early symptoms are similar.

In the brains of people with MSA, certain regions slowly break down, in particular the cerebellum, basal ganglia, and brain stem. This leads to motor difficulties, speech issues, balance problems, poor blood pressure, and problems with bladder control.

MSA is not hereditary or contagious, and it is not related to MS. Researchers know little else about what may cause MSA. As a result, there is no cure and no treatment to its slow progression.

Treatment can, however, manage specific symptoms through lifestyle changes and

medications.

Autonomic dysreflexia

Autonomic dysreflexia (AD) most often affects people with injuries to the spinal cord. AD normally involves irritation of the region below the level of a patient's injury. This could be an infection or constipation. As a result, it is classed as a secondary dysautonomia.

A range of conditions and injuries can bring on AD. These include, but are not limited to, urinary tract infections (UTI) and skeletal fractures.

The damaged spine prevents pain messages from reaching the brain. The ANS reacts inappropriately, producing severe spikes in blood pressure.

Symptoms include:

- headache
- red face
- blotchy skin
- blocked nose
- a slow pulse
- nausea
- goosebumps and clammy skin near the site of the injury

Most treatments aim to relieve the initial injury or irritation. This prevents further attacks of AD.

Baroreflex failure

The baroreflex mechanism is one way in which the body maintains a healthy blood pressure.

Baroreceptors are stretch receptors situated in important blood vessels. They detect stretching in the artery walls and send messages to the brainstem.

If these messages fail, blood pressure can be too low when resting, or it can rise dangerously during times of stress or activity.

Other symptoms include headaches, excessive sweating, and an abnormal heart rate that does not respond to medication.

Treatment for baroreflex failure involves medications to control heart rate and blood pressure, and interventions to improve stress management.

Diabetic autonomic neuropathy

Diabetic autonomic neuropathy affects an estimated 20 percent of people with diabetes, or around 69 million people worldwide. The condition affects the nerves that control the heart, regulate blood pressure, and control blood glucose levels.

Symptoms can include the following:

- resting tachycardia, or a fast resting heart rate
- orthostatic hypotension, or low blood pressure when standing
- constipation
- breathing problems
- gastroparesis, or food not correctly passing through the stomach
- erectile dysfunction
- sudomotor dysfunction, or irregularities with sweating
- impaired neurovascular function
- "brittle diabetes," usually type I, characterized by frequent episodes of hyperglycemia and hypoglycemia

Treatment for diabetic autonomic neuropathy focuses on the careful management of diabetes. In some cases, medications such as antioxidants and aldose reductase inhibitors can reduce symptoms.

Familial dysautonomia

Familial dysautonomia (FD) is a very rare type of dysautonomia. It only affects an estimated 350 people, almost entirely of Ashkenazi Jewish decent with roots in Eastern Europe.

Symptoms normally appear in infancy or childhood and include:

- feeding difficulties
- slow growth
- inability to produce tears
- frequent lung infections
- difficulty maintaining the right temperature
- prolonged breath-holding
- delayed development, including walking and speech
- bed-wetting
- poor balance
- kidney and heart problems

Familial dysautonomia is a serious condition that is usually fatal. There is no cure.

Life expectancy has dramatically improved over the last 20 years with better symptom management, but symptoms can still make daily life challenging.

The condition often leads to a syndrome called an autonomic crisis. This involves rapid fluctuations in blood pressure and heart rate, dramatic personality changes, and complete digestive shutdown.

Diagnosis and treatment

Dysautonomia is difficult to diagnose, and misdiagnosis is common. Symptoms can be mistaken for those of another condition that is already present.

A successful diagnosis often results from collaboration between several specialists.

Since dysautonomia involves a wide spectrum of disorders that often co-occur with other conditions, no single treatment is appropriate for all types.

There is at present no cure for primary dysautonomias, but some medications and interventions can relieve the symptoms. The symptoms of secondary dysautonomias often improve when the initial condition is treated.

Additional information

Article last updated by Adam Felman on Thu 27 July 2017.

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References

Citations