CONDITION

Autonomic neuropathy

Learn how autonomic neuropathy affects blood pressure, digestion, bladder function, sweating, and sexual health, and how symptoms are diagnosed and managed.

WHAT IT IS
Damage to nerves controlling automatic body functions

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
Dizziness when standing, digestive problems, bladder problems, abnormal sweating

WHAT CAUSES IT
Diabetes, autoimmune, infection, inherited, medicine-related or unknown

HOW IT IS DIAGNOSED
Selected autonomic function tests

MAIN TREATMENT
Underlying-cause treatment and symptom management

CAN IT BE CURED?
Sometimes - underlying causes may be treatable

IS IT AN EMERGENCY?
Sometimes - fainting with chest pain

LONG-TERM OUTLOOK
Variable, depending on cause and nerves involved

Overview

Autonomic neuropathy is damage to the nerves that control automatic body functions. These functions usually happen without conscious effort. They include heart rate, blood pressure, digestion, bladder emptying, sweating, temperature control, and aspects of sexual function.

Autonomic neuropathy is not one specific disease. It is a pattern of nerve damage that can have many causes. Diabetes is a well-known cause, but autoimmune diseases, abnormal protein deposits, certain neurological disorders, infections, inherited conditions, and some medicines can also affect autonomic nerves. Sometimes no cause is found.

The effects depend on which nerves are involved. One person may mainly have dizziness when standing, while another may have digestive or bladder problems. Several body systems may be affected at the same time.

Symptoms can interfere with nutrition, mobility, sleep, and daily activities. Problems controlling blood pressure may also increase the risk of fainting and falls. Identifying the cause and the functions affected helps a healthcare team plan treatment.

Symptoms

Symptoms may develop slowly and can be mistaken for those of other conditions. They may also change over time.

Blood pressure and heart rate: Damage to autonomic nerves can make it difficult for the body to adjust blood pressure when a person stands. This may cause lightheadedness, blurred or dim vision, weakness, neck or shoulder discomfort, or fainting. This problem is called orthostatic hypotension. Some people also have a resting heart rate that is unusually fast or does not rise normally during activity.

Digestive system: Nerve damage can slow or disrupt movement through the stomach and intestines. Possible symptoms include feeling full after eating a small amount, nausea, vomiting, bloating, reflux, constipation, diarrhea, or alternating constipation and diarrhea. Delayed stomach emptying is called gastroparesis. In people with diabetes, it can make blood glucose harder to predict because food is absorbed at irregular times.

Bladder and urinary tract: The bladder may not signal fullness normally or may not empty completely. A person may have trouble starting urination, a weak urine stream, leakage, frequent urination, or a feeling that urine remains in the bladder. Retained urine can increase the risk of urinary tract infections.

Sweating and temperature control: A person may sweat too much, too little, or in unusual areas. Reduced sweating can make it harder to stay cool in hot conditions. Heavy sweating may occur during sleep or while eating.

Sexual function: Autonomic nerve damage may contribute to difficulty getting or maintaining an erection, reduced vaginal lubrication, discomfort during sex, or problems with orgasm and ejaculation. These symptoms can also have hormonal, blood vessel, medicine-related, or emotional causes.

Awareness of low blood glucose: Some people with diabetes lose warning symptoms such as a racing heartbeat or sweating when blood glucose falls. This is called hypoglycemia unawareness. It requires prompt discussion with the clinician managing diabetes.

Autonomic neuropathy can occur with sensory or motor neuropathy. This may cause numbness, burning pain, weakness, or reduced awareness of injuries, especially in the feet. However, some people have mainly autonomic symptoms.

Causes and risk factors

Long-standing diabetes, particularly when blood glucose and other cardiovascular risk factors have not been well controlled, is an important cause. Autonomic nerve damage may occur along with other complications affecting the eyes, kidneys, blood vessels, or peripheral nerves.

Other possible causes include:

Age, the duration of an underlying disease, alcohol misuse, smoking, and conditions that affect blood vessels may increase the risk of nerve damage in some people. The specific risk factors depend on the cause.

Not every episode of dizziness, constipation, sweating, or bladder difficulty is due to autonomic neuropathy. Dehydration, anemia, heart conditions, hormone disorders, medication effects, and many common digestive or urinary conditions can produce similar symptoms.

- Abnormal protein deposits, such as hereditary or acquired amyloidosis
- Autoimmune disorders, including autoimmune autonomic ganglionopathy and some connective tissue diseases
- Neurological conditions such as Parkinson disease and multiple system atrophy
- Inherited disorders that affect peripheral or autonomic nerves
- Certain infections, including HIV
- Some chemotherapy medicines and other substances that can damage nerves
- Nerve injury related to surgery, radiation, or another medical condition

Diagnosis

There is no single test that confirms every form of autonomic neuropathy. Diagnosis usually begins with a detailed history. A clinician may ask when symptoms occur, whether they are related to meals or standing, and how they affect daily activities.

A complete medication review is important. Blood pressure medicines, diuretics like furosemide or hydrochlorothiazide , antidepressants like sertraline or fluoxetine , sedatives, medicines for urinary symptoms, and other drugs can affect blood pressure or autonomic functions. Medicines should not be stopped without professional guidance.

The physical examination may include heart rate and blood pressure measurements while lying down and again after standing. Orthostatic hypotension is generally defined as a sustained blood pressure drop of at least 20 millimeters of mercury systolic or 10 millimeters of mercury

diastolic within three minutes of standing or head-up tilt. A blood pressure drop does not by itself prove autonomic neuropathy; dehydration, blood loss, medicines, and heart problems must also be considered.

Testing is selected according to the symptoms and may include:

Specialized autonomic testing is not available in every clinic. Referral to a neurologist, cardiologist, gastroenterologist, urologist, or autonomic disorders center may be appropriate when symptoms are complex or the cause remains unclear.

- Blood tests for diabetes, vitamin deficiencies, thyroid disease, autoimmune conditions, or abnormal proteins
- An electrocardiogram or other heart tests
- Deep-breathing, Valsalva, or tilt-table tests to evaluate heart rate and blood pressure responses
- Sweat testing to assess the nerves that control sweat glands
- Stomach-emptying or other digestive studies
- Ultrasound, bladder scans, urine-flow testing, or urodynamic testing
- Nerve conduction studies or other neurological tests when additional nerve damage is suspected

Treatment and management

Treatment has two goals: address the underlying cause when possible and reduce symptoms. A management plan may involve several specialists because autonomic nerves affect many organs.

For people with diabetes, glucose management and attention to blood pressure, cholesterol, kidney health, smoking, and foot care may help limit further nerve and blood vessel injury. Autoimmune disease, infection, vitamin deficiency, amyloidosis, or another identified cause may require condition-specific treatment.

For dizziness related to orthostatic hypotension, clinicians may first review medicines and look for dehydration, anemia, or heart problems. Helpful strategies may include standing up in stages, sitting at the edge of the bed before walking, avoiding prolonged standing, and limiting exposure to excessive heat. Physical counter-maneuvers, such as crossing the legs or tightening leg and abdominal muscles, can temporarily support blood pressure.

Some people benefit from compression garments or an abdominal binder. Increasing fluids or salt may be recommended in selected cases, but this is not safe for everyone. It requires

medical guidance, especially for people with high blood pressure, heart failure, kidney disease, or swelling.

If these measures are not enough, medicines such as midodrine or droxidopa may be considered. Fludrocortisone is sometimes used in selected patients. These treatments require monitoring because they can cause high blood pressure while lying down or other side effects. Raising the head of the bed may be part of a plan when nighttime or lying-down blood pressure is high.

Digestive treatment depends on the problem. For gastroparesis, a clinician or dietitian may suggest smaller meals, changes in meal composition, and adjustments to diabetes care. Medicines that improve stomach movement or control nausea may be appropriate in some cases. Persistent vomiting or weight loss requires reassessment.

Constipation may be managed with physical activity when possible, appropriate fluid and fiber intake, and selected laxatives. Fiber can worsen bloating or delayed stomach emptying in some people, so advice should be tailored to the digestive problem. Chronic diarrhea may require testing for infection, medication effects, bacterial overgrowth, or another intestinal disorder before treatment.

Bladder management may include scheduled bathroom visits, double voiding, pelvic floor care, or treatment of an infection. If the bladder retains a significant amount of urine, intermittent catheterization may be discussed. Sexual symptoms can sometimes be treated with medicines, devices, lubricants, pelvic care, or counseling after cardiovascular health and other causes have been reviewed.

People with reduced sweating should take care in hot weather. Cooling, shade, breathable clothing, and planned breaks can help. Those with excessive sweating may be offered topical, oral, or procedural treatments depending on the location and severity.

Complications

Blood pressure drops can lead to falls, fractures, or injuries from fainting. High blood pressure while lying down may complicate treatment and needs monitoring.

Severe digestive slowing can contribute to dehydration, poor nutrition, weight loss, and unpredictable blood glucose. Incomplete bladder emptying may cause repeated infections or, in severe cases, damage the urinary system.

Reduced sweating can increase the chance of heat-related illness. Sexual and bowel symptoms may affect relationships, emotional well-being, and social activities. These concerns are valid medical issues and can be discussed confidentially with a healthcare professional.

Follow up

Routine follow-up depends on the cause, symptoms, and treatments being used. Visits may include a review of falls or near-falls, lying and standing blood pressure, hydration, weight, nutrition, bladder function, bowel habits, skin and foot health, and medicine side effects.

Keeping a symptom record can help. Note when dizziness occurs, what and when you ate, bowel or bladder changes, blood pressure readings if requested, and any relationship to medicines. Bring the record and a current medication list to appointments.

Contact your healthcare team promptly for new fainting, repeated falls, worsening vomiting, unexplained weight loss, inability to keep fluids down, new difficulty emptying the bladder, or signs of a urinary infection. People with diabetes should also report frequent or unrecognized low blood glucose.

Seek emergency care for:

- Fainting with chest pain, severe shortness of breath, a major injury, or an irregular or pounding heartbeat
- New facial drooping, one-sided weakness, trouble speaking, or other possible stroke symptoms
- Confusion, severe weakness, or very little urination with ongoing vomiting or diarrhea
- Inability to urinate accompanied by severe lower abdominal pain
- Symptoms of dangerously low blood glucose that do not improve with the person's established emergency plan

Sources

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