



Autonomic Testing

Autonomic reflex screen testing at The Neurology Center

Autonomic testing, also known as autonomic reflex screen or autonomic response testing, is a non-invasive test that measures how the nervous system works to control blood pressure, heart rate and sweating.

About autonomic testing

Autonomic testing is used to help physicians diagnose the presence and severity of dysautonomia, a disorder of the autonomic nervous system (ANS). Your physician may recommend autonomic testing if you're experiencing symptoms including:

- Abnormal sweating
- Dizziness
- Fainting
- Fatigue
- Fluctuating blood pressure
- Numbness and burning in your hands or feet
- Rapid heart rate
- Shortness of breath

Your physician may order this test for other reasons as well.

What to expect during autonomic testing

Autonomic testing consists of activities designed to stimulate the autonomic nervous system to produce changes in blood pressure, heart rate, breathing and sweating in a controlled setting. We'll review the procedure with you before starting.

The test includes two main parts — a quantitative sudomotor axon reflex test and a cardiovascular autonomic test.

Quantitative sudomotor axon reflex test (QSART)

QSART is a test that measures the nerves that control sweating. During this first part of the autonomic test, we apply a mild electrical current to your skin to activate the nerves that supply the sweat glands. This allows us to assess whether the sympathetic nerve terminals in your skin are able to release a neurotransmitter (called acetylcholine) and increase sweat production. You may experience mild burning, tingling, or stinging sensations in the areas being stimulated.

Cardiovascular autonomic test with head-up tilt

During this second part of the autonomic test, we record and monitor your blood pressure, respiration, heart rate, and heart rhythm. This test involves performing the simple maneuvers described below.

1. Deep breathing

This test examines how the heart rate responds to breathing slowly and deeply for a minute and 20 seconds at a rate of six breaths per minute.

2. Valsalva maneuver

This test involves blowing forcefully into a mouthpiece against a closed airway. The Valsalva maneuver examines how the body compensates for changes in the amount of blood that returns to the heart.

3. Head-up tilt

You must be laying down for at least 45 minutes prior to starting this test so this test will be done last. This test evaluates your blood pressure, heart rate, and breathing rate in response to standing up. You will start by lying on a stretcher-like table, relaxing and breathing normally, with straps attached around your abdomen and legs for. After 5 minutes of laying flat we will then tilt the table up to a 70-degree angle for 10 minutes to

reproduce your symptoms in a controlled setting while continuously monitoring your blood pressure, heart rate, and breathing rate. If you experience symptoms — such as lightheadedness, weakness or feeling faint (known as pre-syncope) — we will tilt the table back to the lying position.

Preparing for autonomic testing

To prepare for your autonomic test, please follow these instructions:

- Once your test is scheduled, you will receive a list of medications that may affect the results of the test. You will be asked to discuss your medications with your physician.
- No nicotine (cigarettes) twenty-four (24) hours before the test.
- No caffeine (coffee, cola, energy drinks, tea, etc.) twenty-four (24) hours before the test.
- No alcohol the evening before the test.
- No medical or recreational marijuana for at least twenty-four (24) hours prior to test.
- Eat and drink normally for 24 hours prior to testing and make sure you stay well hydrated the day before your test but keep in mind you will not be able to get up from the table for once the test has started.

Risks of autonomic testing

Some people may faint or collapse during the head-up tilt. When a patient's symptoms and continuous recording of heart rate and blood pressure suggest pre-syncope (near fainting), the patient will be tilted back to a flat position immediately.

Autonomic testing results

Physiological measurements will be obtained in both parts of the test (the QSART and the cardiovascular autonomic test with head-up tilt) to determine evidence of dysautonomia.

The results can help physicians diagnose, evaluate, monitor and treat disorders of the autonomic nervous system, including:

- Abnormal sweating
- Autonomic neuropathy
- Baroreflex failure
- Certain degenerative diseases, such as multiple system atrophy and autonomic failure in Parkinson's disease
- Diabetes
- Hypotension
- Orthostatic intolerance
- Orthostatic cerebral hypoperfusion
- Postural tachycardia
- Pure autonomic failure
- Supine hypertension
- Syncopal seizures
- Syncope

Please note it takes 2 weeks for these results to be interpreted. Unless there is any urgent findings your ordering physician will discuss your test results with you and let you know the next steps at your next follow up appointment.