

The Clinical Exam

The ANS exam is a simple test that is performed in your doctor's office or in a hospital. You may or may not need to stop your medications or fast before taking the test. Your doctor will tell you if you should. You can take the test even if you have an implanted pacemaker or defibrillator.

A nurse or technician applies two or three small, painless pads (called leads) to your chest and places a blood pressure cuff on your left arm. The computer will measure your heart rate variability and respiratory activity. Most of the test is taken while you are seated comfortably in a chair. The entire test takes less than 30 minutes.

The exam includes several parts. It monitors you while you are relaxed, while you are breathing deeply, while you are straining (this is called a valsava maneuver), and while you are standing. A nurse or technician will guide you through the test.

Your doctor may want to include a tilt-table test as part of your exam. For this portion of the test, you are asked to relax comfortably on your back, then the nurse or technician

will tilt the table upwards as you breathe normally.



Your Test Results

ECG and blood pressure monitors are connected to a computer. The computer analyzes the data from these two monitors and computes your test results in digital fashion (that is, three numbers). These numbers help your doctor understand your autonomic nervous system and its role in your health. One number represents your entire autonomic nervous system, one number represents the sympathetic branch of your ANS, while the third number represents the parasympathetic branch of your ANS.

How these numbers change during the different parts of the test and how they change over time as you grow and age provides your doctor with information she or he needs to keep you as healthy as possible.

The computer will prepare a report for your doctor, who will discuss the results with you.



Contact your health care professional for more information on ANS monitoring.

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Non-invasive Autonomic Nervous System Monitoring



- Post-MI & other cardiac conditions
- Diabetes
- Hypertension
- Neurologic problems
- Syncope
- Pregnancy
- Anxiety/Stress
- Circulation problems

Using heart rate variability and analysis of respiratory activity

Non-invasive Autonomic Nervous System Monitoring

Your Autonomic Nervous System

Your nervous system is comprised of three parts: your somatic (or sensory) nervous system, your motoric nervous system, and your autonomic nervous system (ANS). Your ANS is that part of your nervous system which functions to sustain your life by helping to control your heart, lungs, digestive system, blood pressure, immune system, certain of your reflexes (like coughing and gagging), fluid balance, pupil diameter, sweating, and sexual function.



Your ANS has two parts

There are two parts, or branches, to your ANS: the sympathetic branch and the parasympathetic branch. Generally, the sympathetic branch is more in control when you are stressed, nervous, or excited, while the parasympathetic branch is more in control when you are relaxing, sleeping, or recovering from an illness or injury.

A balance between the two branches of your ANS is essential for good health. In fact, most illnesses and injuries cause or result from an imbalance between these two branches. An imbalance in your ANS can tell your doctor many things about how healthy you are as well as what can be done to keep you as healthy as possible.

What is ANS monitoring?

Autonomic nervous system monitoring is a fast, non-invasive, and simple way to provide your doctor with information to help him or her determine how healthy you are. Monitoring your ANS, when measured frequently like your blood pressure and heart rate, can help your doctor keep you healthy. Information is collected from an easy, painless test that can be done in your doctor's office or in a hospital.

What is non-invasive?

The ANS monitoring test is non-invasive. This means that there are no needles or probes or anything else that needs to enter your body. The test is completely painless, and for most it is relaxing.

What is being monitored?

ANS monitoring records your heart rate variability and respiratory activity. Blood pressure readings are also taken. Your heart rate variability and respiratory activity are analyzed by a computer to determine how your ANS is controlling your heart and your lungs and other parts of your body. Your physician then interprets your results produced by the computer.

What is heart rate variability?

Heart rate variability (HRV) is a measure of your heart's ability to quickly respond to changes in your level of activity.



Moderate variability is healthy. Too much or too little is unhealthy. ANS monitoring using HRV can provide your doctor with

information that cannot be seen using other measures, for example on an EKG recording.

Why is including respiratory activity important?

Analyzing your respiratory activity along with your HRV is the key to monitoring the balance between the two branches of your autonomic nervous system.

Why is ANS monitoring important?

Everyone is different, and so is their autonomic nervous system. How an individual responds to disease, injury, medicines, and medical treatments largely depends on her or his ANS.

By monitoring your ANS, your doctor can determine whether she or he is doing enough to keep you healthy. In this way, your doctor can better care for you and better maintain your well-being.

Who should be monitored?

Everyone from newborns to older adults can and should have their ANS monitored. Frequent monitoring, when indicated, helps your doctor better maintain your health & well-being and tailor treatments, including medications, specifically for you.

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- . better medicine
- . better outcomes
- . in the hands of doctors

...is the ANSwer.

Using heart rate variability and analysis of respiratory activity