

Autonomic Nervous System and Arterial Stiffness



What is it?

The autonomic nervous system test, also known as the pulse wave velocity test, evaluates both parasympathetic and sympathetic activity by assessing heart rate variability. When the autonomic nervous system is dysfunctional you have reduced parasympathetic activity which leads to less cardiac protection. Excess sympathetic drive leads to higher resting heart rate, Vasoconstriction, and arterial injury. This imbalance contributes to arrhythmias, progressive heart failure, and sudden cardiac death.

When this system is working well, it's like a smart home: adjusting automatically, keeping everything comfortable and efficient. When it's broken, it's like a thermostat stuck on high heat: constantly running, wearing down your heart, constricting your blood vessels, and increasing internal pressure. Autonomic nervous system dysfunction is a well-established, independent predictor of cardiovascular mortality; however, it is not the only predictor.

The other extremely important predictor of cardiovascular mortality is arterial stiffness. Arterial stiffness reflects loss of elasticity in large arteries, often due to aging, hypertension, diabetes, or inflammation. Think of it like a flowing river, where the blood is supposed to be delivered

efficiently and smoothly through a wide channel. With arterial stiffness that wide, flowing river now becomes a tight and narrow creek restricting the amount of blood flow, creating immense pressure and far less efficiency.

Why is it important?

These two tests, wrapped into one test, are extremely important in terms of predicting cardiovascular mortality. The concept is very simple: the stiffer your arteries are, the faster your pulse wave velocity is. Each one unit increase in pulse wave velocity is associated with roughly 10–15% increase in risk of cardiovascular mortality. Let's be very clear: mortality is another word for death. Put even more clearly, the stiffer your arteries are, the younger you die. Arterial stiffness is not just a secondary finding; it is a strong, independent predictor of cardiac mortality.

How to fix it?

Through this in-depth test at MetaLab, we empower you with evidence-based information that can reverse a dysfunctional autonomic nervous system and decrease arterial stiffness. Our team gives you a personalized plan through a combination of lifestyle changes, targeted exercises, and medical treatments, to get you on track to achieving a longer and healthier life. So, come join us and...

LET'S WIN THE DAY TOGETHER!

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