



## CARDIO NUTRIENT TEST

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Identify micronutrient deficiencies and toxicities that affect heart function.

### Why You Need Cardio Nutrient Testing

#### Micronutrients and Heart Health

Our heart is working constantly and requires many essential nutrients to support its function. Nutrient imbalance—the lack or excess of some nutrients— can play a major role in the development of cardiovascular disease (CVD).<sup>1</sup>

A healthy diet and lifestyle are the best weapons to fight cardiovascular disease; but factors like lifestyle, age, existing diseases, and medication can impact our body's need and response to dietary interventions.

#### The Impact of Cardio Nutrient Testing

It takes more than just guesswork to address any nutrient imbalance that affects heart health. Cardio nutrient testing allows for personalized and targeted nutritional interventions, including safe use of dietary supplements to address deficiencies.

- ✓ Measures the level of 15 vitamins, minerals, and antioxidants critical to a healthy heart
- ✓ Reveals imbalances of essential fatty acids (omega-3, -6 and -9) to manage overall cardiovascular risk caused by high omega-3 levels that upset omega-6 to -3 balance
- ✓ Determines CoQ10 levels for baseline and monitoring, especially for patients taking statins that inhibit the synthesis of CoQ10 for mitochondrial function
- ✓ Evaluates intracellular mineral levels (instead of just serum measurement) like magnesium, calcium, selenium, and zinc
- ✓ Provides clinically actionable information that enables clinicians to develop personalized dietary and supplementation protocol for patients with heart disease

Nutritional assessment helps in the prevention and management of cardiovascular diseases.



# CARDIO NUTRIENT TEST

## Micronutrients Tested:

**Essential Fatty Acids** (omega-3, -6, -9, and saturated fatty acids), at the right balance, may reduce inflammation, prevent the formation of clots, and aid in the regulation of blood pressure and cholesterol levels. An ideal 1:1 ratio of omega-3 and -6 promotes optimal heart health.<sup>2</sup>

**CoQ10** deficiency can play a role in the development and worsening of heart failure. The use of CoQ10 in heart failure suggested improved ejection fraction, stroke volume, cardiac output, and cardiac index.<sup>3</sup>

**Folate and Cobalamin** (vitamins B9 and B12) reduce homocysteine levels in the blood and aid in the proper function of the cardiovascular system. Folate, along with other B vitamins, helps break down homocysteine, an amino acid that may damage the inner walls of arteries. Such damage can boost the risk of a stroke or heart attack.<sup>4</sup>

**Vitamin D** ensures the absorption and retention of calcium and phosphorus for bone building. Toxic levels of vitamin D can cause high blood calcium levels that can then lead to spikes in blood pressure, while deficiency has been associated with CVD risk factors such as hypertension and diabetes, myocardial infarction, stroke, and congestive heart failure.<sup>5</sup>

**Magnesium** helps lower general cholesterol levels while raising high-density lipoprotein (HDL) or good cholesterol while reducing the risk of dysrhythmia and severity of angina. Excess magnesium can result in irregular heartbeat and low blood pressure. Adequate levels of this vitamin aid in the reduction of inflammation and improve insulin sensitivity, which both reduce the risk of heart disease.<sup>6</sup>

**Calcium** is involved with the contraction and relaxation of heart muscles. Studies show that calcium reduces blood pressure, a major risk factor for heart attack and stroke. It also increases the ratio of high-density lipoprotein (HDL) cholesterol to low-density lipoprotein (LDL) cholesterol by almost twenty percent. However, too much calcium is also risky, as it is associated with increased risk of heart disease.<sup>7</sup>

**Sodium** plays a significant role in blood pressure regulation. Deficiency in sodium, however, can increase health risks for people with hypertension, diabetes, or chronic kidney disease.<sup>8</sup>

**Zinc** is a potent antioxidant that helps neutralize free radicals that accelerate aging and contribute to chronic diseases like CVD.<sup>9</sup>

**Ferritin** deficiency is particularly common in the elderly and patients with chronic disease. Deficiency contributes to development of coronary artery disease, heart failure, and pulmonary hypertension. An excess is also detrimental to those with cardiovascular illnesses—caution should be exercised when consuming iron-rich supplements and food.<sup>10</sup>

**Selenium** is an antioxidant that fights free radicals and also reduces low-density lipoprotein (LDL) or bad cholesterol in the body.<sup>11</sup>

This nutrient panel also tests for **vitamin K, chromium, manganese, and potassium.**

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9 Zinc supply affects cardiac health [www.sciencedaily.com/releases/2017/04/170418094238.htm](http://www.sciencedaily.com/releases/2017/04/170418094238.htm)

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Iron deficiency and cardiovascular disease. *Nat Rev Cardiol.* 2015 Nov;12(11):659-69. <https://www.ncbi.nlm.nih.gov/pubmed/26194551>

11 Stephen Daniells. Supplements of selenium may increase levels of an antioxidant enzyme with a reported role in cardiovascular prevention <http://www.nutraingredients.com/Research/Selenium-supplements-may-boost-heart-health-Study>

## TEST INFORMATION

Specimen : 25 ml. whole blood  
Result TAT : 7 working days  
Method : LC-MS/MS, ICP-MS, HPLC, GC, Microassay

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