

# HIDDEN HEART DISEASE: UNDERSTANDING INOCA AND ANOCA

## What Are INOCA and ANOCA?

**INOCA:** Ischemia With No Obstructive Coronary Arteries – reduced blood flow without blocked arteries.

**ANOCA:** Angina With No Obstructive Coronary Arteries – chest pain without blocked arteries.

**Key fact:** Up to 50% of people with angina show no major blockages.

## Why It Matters

INOCA/ANOCA is linked to heart attacks, heart failure (especially HFpEF) and lower quality of life.

Many patients wait 3–5 years for diagnosis, often after multiple doctors and tests.

## Who Is Affected?

More common in women (60–70%).

Millions worldwide, not just in the U.S.

## Symptoms and Red Flags vs Diagnosis Tools

### For Patients

Chest pain/pressure

Shortness of breath

Fatigue

Symptoms during stress/exertion

Tip: A “normal” test doesn’t always rule out heart disease.

### For Providers

Think beyond a “normal angiogram.”

Consider coronary flow reserve (CFR).

Index of microvascular resistance (IMR).

Vasospasm provocation testing.

PET or CMR imaging.

## How Is INOCA/ANOCA Diagnosed?

Initial evaluation: symptoms, risk factors and exclusion of obstructive CAD with coronary angiography or CT angiography.

Functional testing: stress ECG, stress echo or perfusion imaging to look for signs of ischemia.

Advanced diagnostics: invasive coronary function testing (CFR, IMR), acetylcholine testing for vasospasm, PET or cardiac MRI for perfusion.

Key point: A normal angiogram does not rule out ischemia. Specialized testing may be needed to detect microvascular or vasospastic disease.



## **Treatment and Management**

### **For Patients**

Lifestyle changes (exercise, diet, stress management)

Ask your doctor: “Could this be INOCA/ANOCA?”

### **For Providers**

Treat the mechanism:

Microvascular: beta-blockers, ACEi/ARB, statins, ranolazine

Vasospasm: calcium channel blockers, nitrates

## **Advocacy and Resources**

Patients: Self-advocate, ask about small-vessel testing.

Providers: Stay updated with AHA, ESC and INOCA International guidelines.

## **References**

Berry C, Camici PG, Crea F, et al. Clinical standards in angina and non-obstructive coronary arteries: A clinician and patient consensus statement. *Int J Cardiol.* 2025;429:133162. doi:10.1016/j.ijcard.2025.133162

