

CACS

Coronary Artery Calcium Score



CCTA

Coronary CT Angiogram

ANATOMIC TESTS FOR ATHEROSCLEROSIS

What

Low-radiation, gated CT scan
Non-contrast

Measures coronary Ca content
Score = plaque area x density



Gated CT scan
With IV contrast

Characterizes degree of stenosis
and plaque morphology

Who

Asymptomatic
Intermediate risk (5-20% ASCVD risk)
Low risk + inflammatory conditions or
FHx of premature CVD
Uncertain about benefit of statins



Symptoms of possible coronary ischemia
Low to intermediate risk angina
Low to intermediate risk ACS
In place of or complementary to
functional tests in stable CAD

So

CAC = 0 → "Power of zero": no statins, repeat in 3-7 years
CAC < 100 → Low risk: lifestyle modifications
CAC = 100-400 → Intermediate risk: lifestyle + statins + aspirin
CAC > 400 → High risk: secondary prevention



Intermediate-risk lesions (<70% stenosis, <50% in left main)
→ Prevention with lifestyle modifications & statins
High-risk lesions (>70% stenosis)
→ Catheterization, lifestyle modifications, & rehab

Pros

+ Low radiation exposure
+ Measures sub-clinical disease burden
+ Independently predicts CVD events and improves traditional risk prediction models



Identifies patients with non-obstructive CAD +
Quantifies percent stenosis +
Information about vulnerable plaques and morphology +
Identifies non-atherosclerotic coronary processes (i.e. anomalous coronaries, myocardial bridges, coronary aneurysms) +

Cons

- Lower yield if older
- No information on non-calcified soft plaque or vulnerability of lesions



Lower yield if older, obese, prior stenting -
Not performed if in arrhythmias -
Exposure to radiation and IV contrast -

Infographic by Dr. Gurleen Kaur succinctly describing, comparing, and analyzing two diagnostic tests for atherosclerosis. Reprinted with permission from the CardioNerds, from the following source:

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