

Cardiometabolic Screening

Heart, arteries, liver & body-fat — quantified before symptoms

In plain terms. This is a coordinated set of scans that measures how much silent disease may be building in your heart arteries, neck arteries, liver and body-fat stores — the shared ‘metabolic dysfunction’ theory behind heart attacks, strokes and type-2 diabetes.

The goal is to turn your risk into real, personal numbers you and your doctor can act on and track over time.

WHAT THIS SCREENING INCLUDES

- **Coronary Artery Calcium (CAC) score** — a fast, low-dose CT that measures calcified plaque in your heart's arteries.
- **CT Coronary Angiography (optional)** — adds a contrast scan to see soft (non-calcified) plaque and any coronary vessel narrowing.
- **Carotid Doppler ultrasound** — measures the artery-wall thickness and any plaque in your neck arteries (no radiation).
- **Liver shear-wave elastography** — ultrasound that gauges liver stiffness and fat (no radiation).
- **DEXA body composition** — measures visceral (organ) fat and muscle at a very low dose.

WHAT IT IS FOR & WHAT IT CAN FIND

A standard risk calculator estimates your heart risk from averages. These scans measure what is actually happening in *your* body, which can move you up or down the risk scale. A calcium score of zero, for example, is linked to a very low 10-year risk of a heart event and can support holding off on medication; a high score can justify starting it.

The liver and body-fat measures catch metabolic problems early — fatty liver and excess visceral fat are strong, and largely reversible, drivers of future diabetes and heart disease

BENEFITS

- ✓ Gives quantitative, repeatable baselines you can track after lifestyle or medication changes.
- ✓ Mostly low- or no-radiation (ultrasound and DEXA use none or almost none).
- ✓ Can meaningfully change decisions — for example, whether to start a statin.
- ✓ Detects fatty liver and visceral fat while they are still reversible.

LIMITATIONS & THINGS TO CONSIDER

- ! The calcium score and CT angiogram use low-dose X-rays (roughly 1–3 mSv and 5–15 mSv respectively).
- ! A calcium score alone cannot see soft, non-calcified plaque — that is what the CT angiogram adds.
- ! Scans can reveal incidental findings that lead to further tests, cost or anxiety.
- ! Results guide risk; they are not a guarantee — a reassuring result does not remove all risk, and abnormal results are not a diagnosis.

WHO SHOULD CONSIDER IT

- Adults roughly 35–65 wanting a cardiometabolic baseline.
- Family history of early heart attack or stroke, or of high cholesterol.
- Metabolic syndrome, insulin resistance, pre-diabetes or an abnormal lipid panel.
- Anyone wanting to quantify and then track modifiable heart and metabolic risk.

Radiation & safety. Carotid Doppler and liver elastography use no radiation. DEXA is about 0.001 mSv. The calcium score is about 1–3 mSv and, if added, CT coronary angiography about 5–15 mSv (low-dose protocols) — for context, natural background radiation is about 3 mSv per year.



REFERENCES

Independently sourced and verified (September 2026). Links open the original publications.

1. Arnett DK, Blumenthal RS, Albert MA, et al. 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease. Circulation. 2019;140(11):e596–e646. <https://doi.org/10.1161/CIR.0000000000000678>
2. McClelland RL, Jorgensen NW, Budoff M, et al. 10-Year CHD Risk Prediction Using Coronary Artery Calcium and Traditional Risk Factors (MESA). J Am Coll Cardiol. 2015;66(15):1643–1653. <https://doi.org/10.1016/j.jacc.2015.08.035>
3. Agatston AS, Janowitz WR, Hildner FJ, et al. Quantification of coronary artery calcium using ultrafast computed tomography. J Am Coll Cardiol. 1990;15(4):827–832. [https://doi.org/10.1016/0735-1097\(90\)90282-T](https://doi.org/10.1016/0735-1097(90)90282-T)
4. SCOT-HEART Investigators. Coronary CT Angiography and 5-Year Risk of Myocardial Infarction. N Engl J Med. 2018;379(10):924–933. <https://doi.org/10.1056/NEJMoa1805971>
5. Touboul PJ, Hennerici MG, Meairs S, et al. Mannheim Carotid Intima-Media Thickness and Plaque Consensus (2004-2006-2011). Cerebrovasc Dis. 2012;34(4):290–296. <https://doi.org/10.1159/000343145>
6. Rinella ME, Lazarus JV, Ratzin V, et al. A multisociety Delphi consensus statement on new fatty liver disease nomenclature (MASLD). J Hepatol. 2023;79(6):1542–1556. <https://doi.org/10.1016/j.jhep.2023.06.003>
7. Neeland IJ, Ross R, Després JP, et al. Visceral and ectopic fat, atherosclerosis, and cardiometabolic disease: a position statement. Lancet Diabetes Endocrinol. 2019;7(9):715–725. [https://doi.org/10.1016/S2213-8587\(19\)30084-1](https://doi.org/10.1016/S2213-8587(19)30084-1)

This information sheet is for education and to help you choose appropriate screening. It is not a diagnosis or medical advice. Screening tests have benefits and harms; discuss your personal situation with your doctor. All studies are performed and interpreted by specialist or subspecialist radiologists (HPCSA-compliant; radiation kept As Low As Reasonably Achievable).