

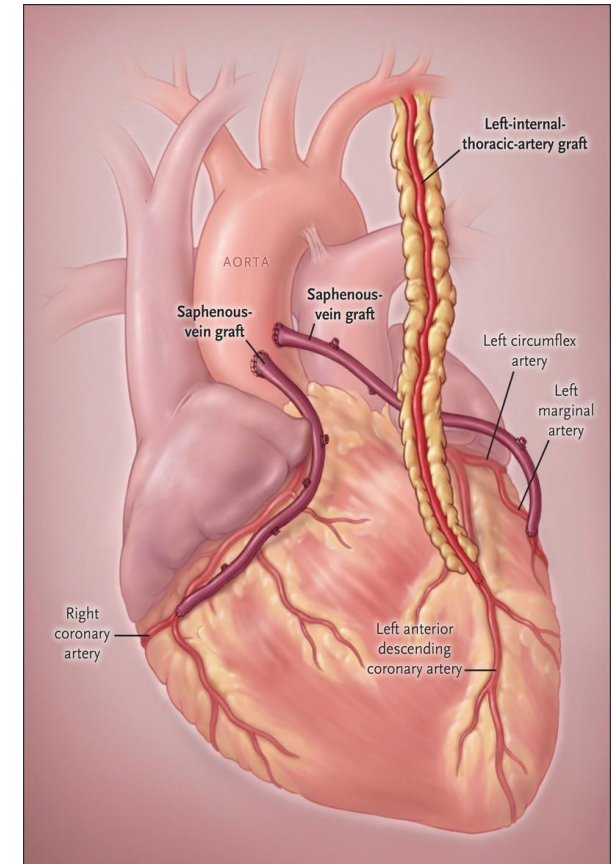
Complex Coronary
Revascularisation Surgery
(Multiple Arterial Graft CABG)

Coronary Artery Bypass Graft Surgery

- Most common heart surgery
- Still the gold standard surgery to bypassed disease coronary arteries (blood vessels supplying the heart)
- Especially in:-
 - Disease involving all 3 coronary arteries
 - Patients with diabetes mellitus
 - Patients with left ventricular dysfunction (heart function is depressed)
- In all 3 conditions aboved, CABG proven to reduce mortality by reducing future major cardiovascular events and reduce future reintervention needs

CABG strategy

- Surgeon construct CABG by harvesting conduits (blood vessels used to bypass stenosis) and anastomosing beyond the stenosis onto the coronary arteries.
- Most CABG (~80-90%) are performed using 1 arterial and multiple venous conduits.
- The commonest arterial conduit used is the Left Internal Mammary Artery (LIMA).
- The venous conduits are usually harvested from the leg.



CABG with Multiple Arterial Grafts

- Emerging evidence shown that arterial grafts have longer patency.
 - Arterial Revascularization Trial (ART)
 - ROMA trial
- However, harvesting arterial conduits is more challenging and time consuming and hence lower uptake.

<u>Conduit</u>	<u>Patency at 10 years</u>
Saphenous vein	~50%
LIMA	>95%
RIMA	90-95%
Radial artery	80-90%

Arterial Revascularization Trial (ART)
Randomized comparison of single versus bilateral internal mammary artery grafting in 3102 patients: Effects on major cardiovascular outcomes after five years of follow up

AHA 2016

David P Taggart MD(Hons), PhD, FRCS, FESC
Professor of Cardiovascular Surgery
University of Oxford, UK

for the Arterial Revascularization Trial Investigators
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REPORT

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Randomized comparison of the clinical outcome of single versus multiple arterial grafts: the ROMA trial—rationale and study protocol

Mario Gaudino^{1*}, John H. Alexander², Faisal G. Bakaeen³, Karfa Ballman⁴, Fabio Barili⁵, Antonio Maria Calafiore⁶, Piroza Dawierwala⁷, Steven Goldman⁸, Peter Kappetein⁹, Roberto Lorusso¹⁰, Darren Mylotte¹¹, Domenico Pagano¹², Marc Ruel¹³, Thomas Schwann¹⁴, Hisayoshi Suma¹⁵, David P. Taggart¹⁶, Robert F. Tranbaugh¹⁷ and Stephen Fremes¹⁸

REPORT

- In my practice, I routinely perform CABG with multiple arterial grafts.
- The LIMA and RIMA is harvested through the same incision (median sternotomy).
- I then construct both vessels **BIMA** into a Y configuration to be used to bypass the coronary arteries. (click [here](#) to review my experience presented to the International Coronary Congress & Society for Cardiothoracic Surgery in Great Britain & Ireland)
- Additional conduits are harvested from the arm (radial artery) and the leg (saphenous vein – see following slides on **Endoscopic Vein Harvest**)
- With these complex technique, patients will received the best conduits ensuring longevity and smooth recovery.

Endoscopic Vein Harvest

- Minimally invasive way to harvest saphenous veins.
- Instead of long incision in the legs, 2 small stab incision (~1-2cm) are made and saphenous veins are harvested videoscopically.
- Introduced to Galway in 2017.
(<https://www.medsurgical.ie/latest-news/uhg-surgeons-introduce-new-technique-for-heart-patients>)
- Proven to reduce wound infection rate and improve mobility & recovery.

Endoscopic Vein Harvest

