

Greater Saphenous Vein

Dr.Rami Kindi

The saphenous vein continues to be one of the most commonly used conduits in coronary bypass grafting. Characteristics that have solidified the greater saphenous vein as a coronary artery bypass conduit include :

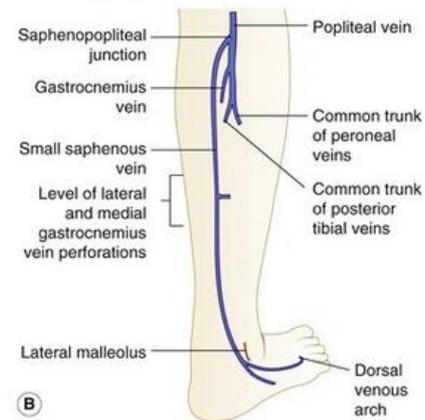
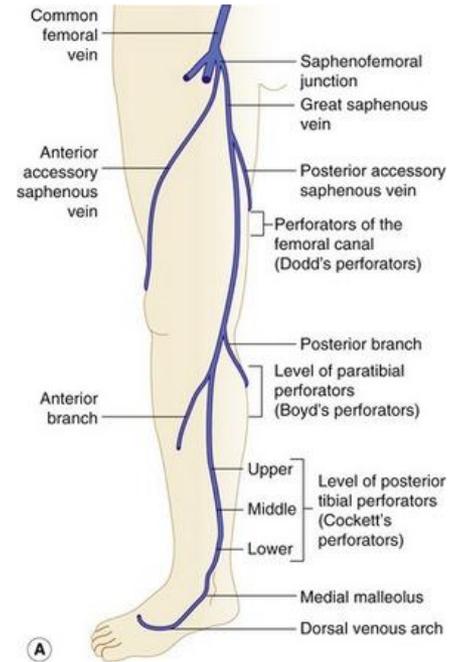
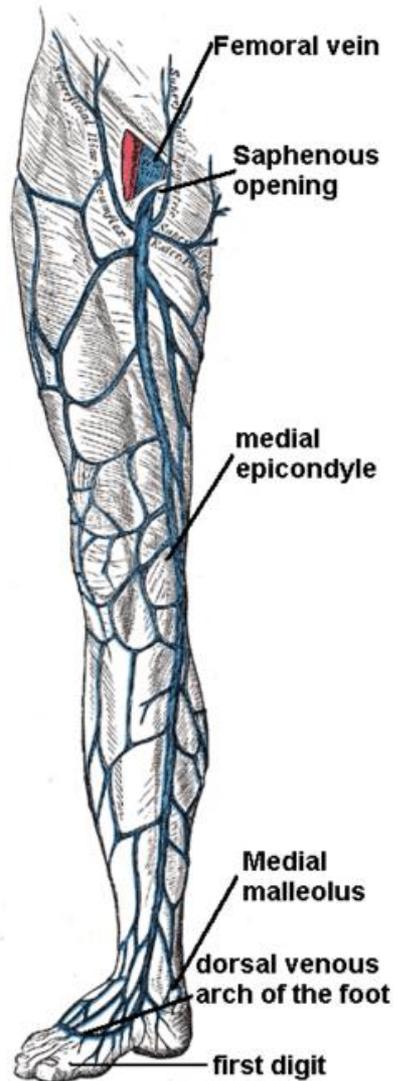
- ease of harvest
- ready availability
- versatility
- resistance to spasm
- thoroughly studied long-term results

Unfortunately there is a loss of clinical benefit after CABG because of time-related attrition.

Accordingly, there is interest in pharmacologic strategies to maximize early and late venous graft patency:

- **Aspirin** within 48 hours after CABG reduces early postoperative complications, including mortality, MI, stroke, renal failure, and bowel infarction .
- Aggressive use of **statins** to achieve a low-density lipoprotein cholesterol < 100 mg/dL decrease by one-third the number of grafts affected with atherosclerosis at angiographic follow-up and also decreased the need for repeat revascularization .
- Finally, in the future, **gene therapy** may allow modification of the venous vascular endothelium to avert development of intimal hyperplasia. Unfortunately, the PREVENT IV trial , testing whether short-term angiographic vein graft failure could be diminished with treatment of the saphenous vein before grafting with **edifoligide** demonstrated no impact of the treatment. The concept remains a valid one, however, and gene therapy will continue to be an exciting area of investigation in the future.

Greater Saphenous Vein Anatomy



HARVEST TECHNIQUES

1. **Traditional (OPEN):**

Provides the best exposure of the vein and may allow for harvest with the least amount of surgical trauma, but that advantage comes at the risk of higher rates of wound complications and postoperative pain.

Open-vein dissection can be started either in the upper thigh, above the knee, or at the ankle.

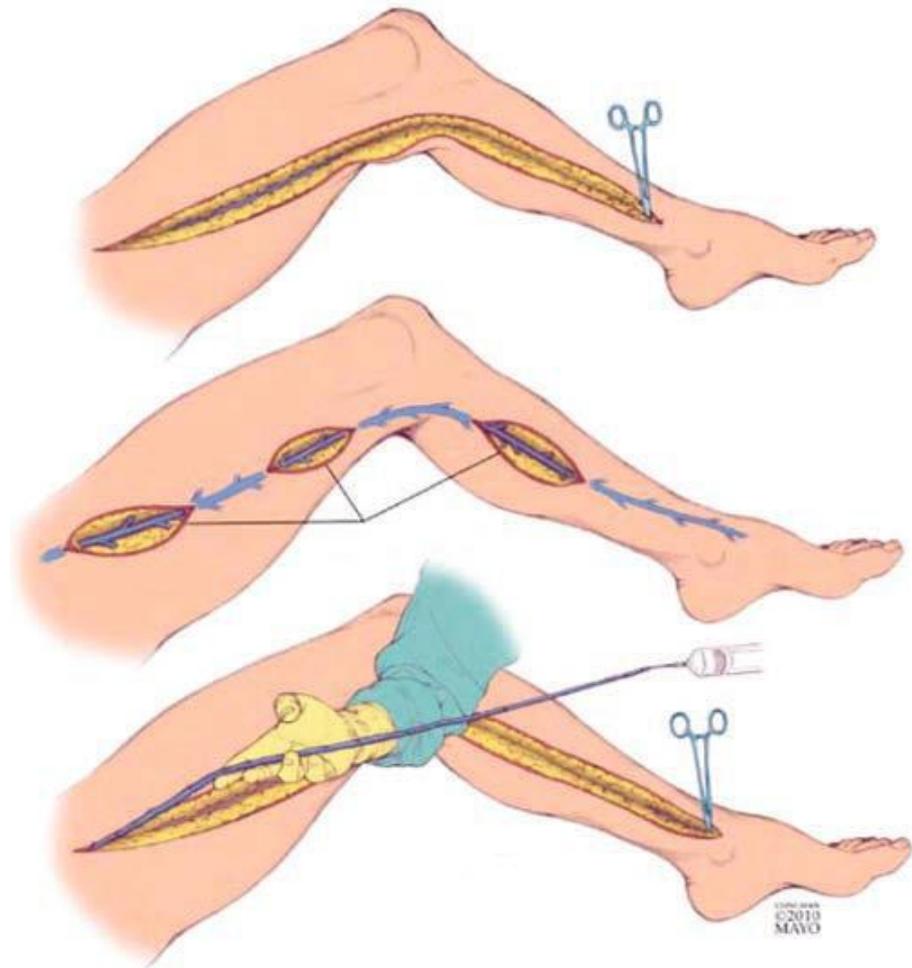
Surgeons prefer to harvest vein from the lower leg because of a more appropriate vein caliber and wall thickness.

Others prefer to harvest vein from the thigh, arguing improved wound healing .

We are not aware of any data supporting one location over another.

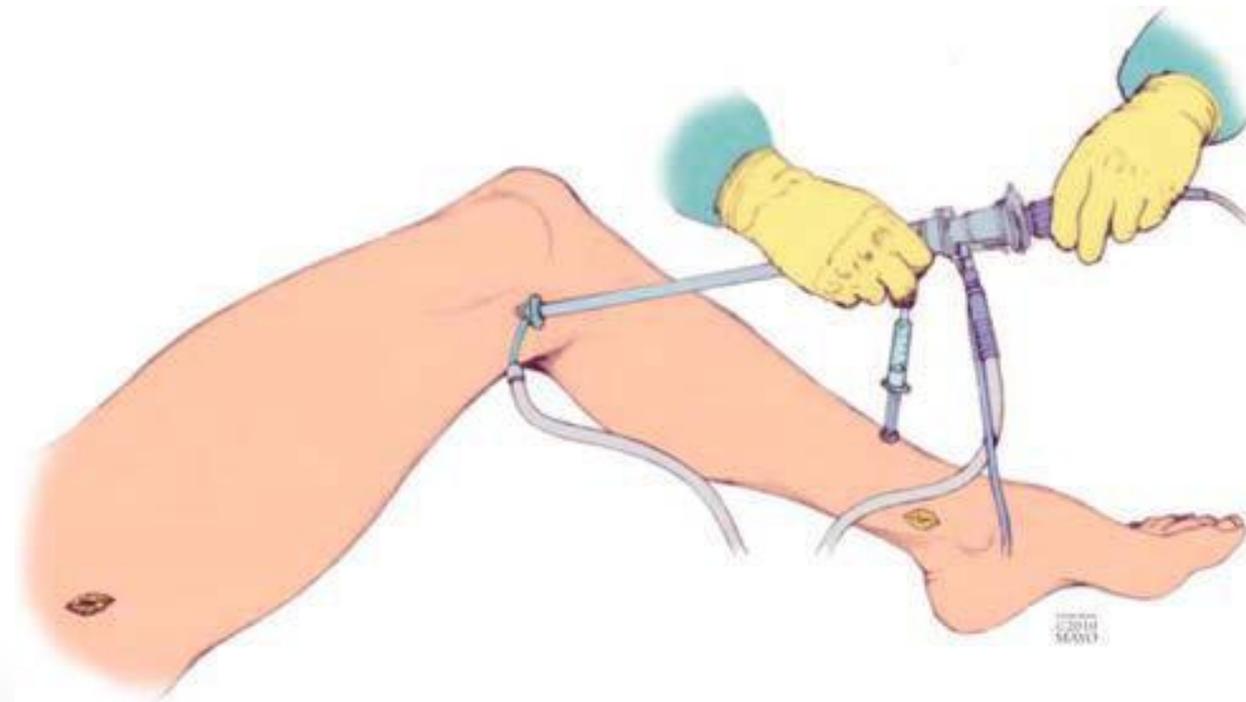
2. Bridge technique:

Bridged skin incisions may decrease pain and wound complications but may also increase surgical manipulation of the vein conduit.



3. Endoscopic Technique :

Endoscopic harvest decreases wound complication rates and produces an improved cosmetic result, although the operative time devoted to harvest is increased as are the number of defects to the harvested conduit requiring suture repair. Initial reports showed no detrimental effects of harvest technique on vein morphology, endothelial structure or function, or graft patency



4. NO TOUCH TECHNIQUE

The polar opposite to endoscopic vein harvest is the “no-touch” technique in which the vein is removed with a pedicle of surrounding tissue. The harvested vein is not distended and it is stored in heparinized blood. In a randomized study of 104 patients using this technique, the angiographic patency at 18 months was 89% for conventional versus 95% for no-touch grafts. At 8.5 years, patency rates were 76% for the conventional group versus 90% for the no-touch group. Multivariate analysis showed that the most important surgical factors for graft patency were the technique of harvesting the conduit and the vein quality. By comparison, the patency of ITA grafts was 90% in the study. :

