Imaging of Deep Inferior Epigastric Arteries for Surgical Planning
(Breast Reconstruction Surgery)

Breast cancer is the most common cancer in women in the United States. Breast reconstruction surgery is commonly part of breast cancer treatment (https://www.radiologyinfo.org/en/info/breast-cancer-therapy) when a woman has a mastectomy.

One possible approach to breast reconstruction surgery is to use the skin and the tissue just beneath it from the woman's own abdominal wall to reconstruct her breast. This procedure is called deep inferior epigastric perforator (DIEP) flap breast reconstruction. To prepare for reconstruction surgery, the surgeon orders imaging tests to identify the location, size, and position of the arterial branches that supply the DIEP flap with blood. The blood supply is essential to map before surgery because that blood supply must also be moved to the chest to keep the reconstructed tissue alive. The main artery is called the deep inferior epigastric artery; the size and location of this artery normally varies between women.

The preferred imaging test to map the blood supply is CT angiography (https://www.radiologyinfo.org/en/info/angioct) (CTA; a scan that shows the blood vessels), with intravenous (IV) contrast, of the abdomen and pelvis. The excellent detail improves outcomes and reduces complications by contributing to the best surgical planning. MR angiography (https://www.radiologyinfo.org/en/info/angiomr) (MRA), with and without IV contrast, of the abdomen and pelvis is an alternative to CTA. MRA of the abdomen and pelvis without IV contrast may also be appropriate. CTA exposes patients to radiation; MRA does not.

— By Casey Quinlan and Frank J. Rybicki, MD, PhD. This information originally appeared in the Journal of the American College of Radiology.

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