

Breast cancer patients needed for trial to assess imaging technique for mastectomies

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Researchers at the Stanford University School of Medicine are recruiting women with breast cancer to test whether a technique to image tissue blood flow could help reduce complications after mastectomy surgery.

Breast cancer strikes about one in eight women in the United States, according to [statistics](#) from the U.S. National Library of Medicine. Surgical treatment can involve removing the [cancerous tumor](#) ([lumpectomy](#)) or the entire breast ([mastectomy](#)), which may be followed by [reconstructive surgery](#) with [implants](#).

Advances in reconstructive techniques and skin-sparing mastectomies have made more cosmetically pleasing mastectomies possible. Yet these operations pose a greater [technical challenge](#). “Post-operative complications can arise from skin loss, infections and implant rejection,” said Irene Wapnir, MD, associate professor of surgery and chief of Stanford’s breast surgery program. These can be related to problems of adequate blood supply, or perfusion, to the skin.

Wapnir and Geoffrey Gurtner, MD, professor and associate chair of surgery, are leading a study to see if SPY Elite imaging can improve on the standard technique of the surgeon’s clinical judgment, which relies on visual inspection of skin color and bleeding. Such clinical judgments are “very hard for the surgeon to make,” said Wapnir, who will use the perfusion imaging to aid in making surgical incisions. The imaging system is already being used in procedures ranging from bypass surgery to organ transplant.

This imaging procedure involves injecting a fluorescent green dye into the blood stream and using a special infrared camera to visualize blood vessels. It allows surgeons to keep track of the blood supply to the breast skin after mastectomy and during reconstructive surgery. LifeCell Corp., distributor of the imaging system, provided the funding for the study. Neither Wapnir nor Gurtner has financial ties or consulting relationships with the company.

The researchers are recruiting 100 female [breast cancer](#) patients age 18 and older who are undergoing mastectomy with immediate or delayed breast reconstruction. Women seeking skin-sparing and nipple-sparing mastectomies are ideal candidates for this study. Women who are pregnant, allergic to iodine, or have liver or kidney failure are not eligible.

Participants will be randomly assigned to one of two groups, both of which will receive the surgical imaging. For group one, both Wapnir and Gurtner will view the perfusion images and make clinical observations of perfusion. For group two, only Wapnir will view the perfusion images, whereas Gurtner will make clinical observations without viewing them. Wapnir emphasized the importance of having two groups to assess whether the imaging adds value and aids decision-making during the procedure.

Participants will have standard pre-operative and post-operative appointments. The study will also evaluate long-term breast skin features, such as color and temperature, over the first year following the surgery. The trial itself will span two years.

Using the imaging, researchers hope to see whether assuring adequate blood supply to the breast skin reduces the rate of complications during mastectomy and reconstruction. Furthermore, Wapnir said they aim to ultimately improve cosmetic outcomes.

Provided by Stanford University Medical Center

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