

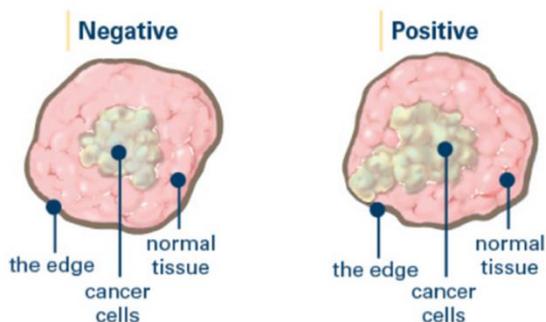
# Breast Conservation Surgery and Margins

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Many women with early-stage breast cancer will choose to undergo breast conservation surgery or lumpectomy as the initial step in the local treatment of their cancer. This has the advantage of preserving a woman's own breast, with minimal cosmetic changes and minimal recovery time after surgery. When coupled with radiation therapy it is equivalent to mastectomy in survival rates.

During a lumpectomy, the surgeon's goal is to take out all the breast cancer, plus a rim of normal tissue around it. This is to be sure all cancer has been removed. Once removed, the tumor and surrounding tissue are stained with a special ink so that the outer edges, or margins, are clearly visible under a microscope. During or after surgery, a pathologist looks at the tissue that's been removed to make sure there are no cancer cells in the margin. A clear, negative, or clean margin means there are no cancer cells at the outer edge of tissue that was removed. A positive margin means that cancer cells come right out to the edge of the removed tissue and have ink on them. A positive margin at the time of lumpectomy, however, does increase the chance of local recurrence and would require additional surgery, known as a 're-excision' to remove a larger margin of cancer-free tissue.



To establish a standard for lumpectomy margins, the American Society for Radiation Oncology (ASTRO) and the Society of Surgical Oncology (SSO) reviewed a number of studies. The groups issued new guidelines in 2014 saying that clear margins, no matter how small as long as there was no ink on the cancer tumor, should be the standard for lumpectomy surgery.

At the time of surgery, a variety of methods can be used to localize the cancer and remove the positive margins.

For cancerous growths that are too small to be felt, localization can be performed by a variety of techniques. No one technique is superior but rather tailored to each patient's needs. Standard methods which are performed prior to surgery, needs localization under x-ray or ultrasound guidance, radioactive seed localization and radio occult localization. Newer techniques such as infrared radar (Savi-Scout) and radiofrequency identification tags have also been used.

In the operating room, the surgeon will remove the tissue and send it to the pathologist who will orient the margins and perform a frozen section to assess whether any tumor is left or if there is a close margin. An additional shave of close margins can also be obtained and sampled separately.

Despite all of these techniques, there can be positive margins found at the final pathology after the entire tissue removed is examined. The incidence of re-excision is variable and can range from 15-30% depending on the type and the location of the tumor. If there is a positive margin, a discussion for the need of a re-excision is important. Most often an additional margin can be obtained using the same incision. In rare occasions, a mastectomy may be recommended. However, as we have learned with the multidisciplinary treatment of breast cancer, a personalized plan is necessary to ensure that the risk of local recurrence is minimized.