

**SSO-ASTRO Consensus Guideline  
Margins for Breast-Conserving Surgery  
with Whole Breast Irradiation in Stage I and II Invasive Breast Cancer**

Since breast-conserving therapy was introduced more than 40 years ago, significant changes in breast-imaging technology, pathology assessment and the use of systemic therapy have improved patient outcomes. These changes have resulted in a decreased rate of ipsilateral breast tumor recurrence (IBTR, also called local recurrence or in breast recurrence). This prompted the Society of Surgical Oncology (SSO), in collaboration with the American Society of Radiation Oncology (ASTRO), to undertake an evidence based consensus to provide a clear and comprehensive approach for practitioners.

With funding from the Susan G. Komen, a multidisciplinary panel of experts assembled in July 2013 to examine the evidence on the relationship between the amount of tissue removed surrounding a breast cancer, called a surgical margin, and IBTR. The key recommendations from this comprehensive review are summarized below. The complete guideline document, as well as the supporting evidence from the meta-analysis can be found in the “Annals of Surgical Oncology,” here: <http://link.springer.com/article/10.1245/s10434-014-3481-4>.

SSO believes that the information in this guideline, which has been endorsed by the American Society of Clinical Oncology (ASCO) and the American Society of Breast Surgeons (ASBS), can be used to decrease unnecessary margin re-excisions while maintaining excellent outcomes in breast conserving surgery and will serve as a definitive resource to the profession.

**Background:** Controversy exists regarding the optimal margin width in breast-conserving surgery for invasive breast cancer.

**Methods:** A multidisciplinary consensus panel considered a meta-analysis of margin width and ipsilateral breast tumor recurrence (IBTR) from a systematic review of 33 studies including 28,162 patients as the primary evidence base for consensus. The results of randomized clinical trials, reproducibility of margin assessment, and current patterns of multimodality care were also considered.

**Results:** Positive margins (ink on invasive carcinoma or ductal carcinoma in situ) are associated with a two-fold increase in the risk of IBTR compared to negative margins. This increased risk is not mitigated by favorable biology, endocrine therapy or a radiation boost. More widely clear margins than no ink on tumor do not significantly decrease the rate of IBTR. There is no evidence that more widely clear margins reduce IBTR for young patients, unfavorable biology, lobular cancers, or cancers with an extensive intraductal component.

**Conclusion:** The use of no ink on tumor as the standard for an adequate margin in invasive cancer in the era of multidisciplinary therapy is associated with low rates of IBTR and has the potential to decrease re-excision rates, improve cosmetic outcomes, and decrease healthcare costs.

The 2013 SSO/ASTRO Guideline on Margins in Breast-Conserving Surgery for Invasive Cancer is summarized here.

**Positive Margins:** A positive margin, defined as ink on invasive cancer or ductal carcinoma in situ (DCIS), is associated with at least a two-fold increase in IBTR. This increased risk in IBTR is not nullified by:

- a) Delivery of a boost dose of radiation
- b) Delivery of systemic therapy (endocrine, chemotherapy, or biologic), or
- c) Favorable biology

**Negative Margin Widths:** Negative margins (no ink on tumor) minimize the risk of IBTR. Wider margin widths do not significantly lower this risk. The routine practice to obtain wider negative margin widths than no ink on tumor is not indicated.

**Systemic Therapy:** The rates of IBTR are reduced with the use of systemic therapy. In the uncommon circumstance of a patient not receiving adjuvant systemic therapy, there is no evidence suggesting that margins wider than no ink on tumor are needed.

**Biologic Subtypes:** Margins wider than no ink on tumor are not indicated based on biologic subtype.

**Radiation Therapy Delivery:** The choice of whole breast radiation delivery technique, fractionation, and boost dose should not be dependent on the margin width.

**Invasive lobular carcinoma and lobular carcinoma in situ (LCIS):** Wider negative margins than no ink on tumor are not indicated for invasive lobular carcinoma. Classic LCIS at the margin is not an indication for re-excision. The significance of pleomorphic LCIS at the margin is uncertain.

**Young age:** Young age ( $\leq 40$  years) is associated with both increased IBTR after BCT as well as increased local relapse on the chest wall after mastectomy, and is also more frequently associated with adverse biologic and pathologic features. There is no evidence that increased margin width nullifies the increased risk of IBTR in young patients.

**Extensive Intraductal Component (EIC):** An EIC identifies cases that may have a large residual DCIS burden after lumpectomy. There is no evidence of an association between increased risk of IBTR and EIC when margins are negative.

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