Guideline 1-14 Version 3

A Quality Initiative of the Program in Evidence-Based Care (PEBC), Cancer Care Ontario (CCO)

Baseline Staging Imaging for Distant Metastasis in Women with Stage I, II, and III Breast Cancer

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An assessment conducted in November 2025 deferred the review of Guideline 1-14 Version 3. This means that the document remains current until it is assessed again next year. The PEBC has a formal and standardized process to ensure the currency of each document
(PEBC Assessment & Review Protocol)

Guideline 1-14 Version 3 is comprised of 5 sections. You can access the summary and full report here:
https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/1096

[1] A full list of participants is provided in Appendix 1.

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Section 1: Recommendations

This section is a quick reference guide and provides the guideline recommendations only. For key evidence associated with each recommendation, see Section 2.

GUIDELINE OBJECTIVES

To provide recommendations for the use of imaging tests to detect distant metastases in women with newly diagnosed breast cancer.

TARGET POPULATION

Women with newly diagnosed primary breast cancer (originated in the breast) who have no symptoms of distant metastasis.

INTENDED USERS

This guideline is intended for health care professionals, policy makers, program planners, and institutions involved in the management of women with clinical and pathologically confirmed primary breast cancer.

RECOMMENDATIONS

Recommendation 1

Staging tests using conventional anatomic (chest X-ray, liver ultrasound, chest-abdomen-pelvis computed tomography [CT] scan) and/or metabolic imaging modalities (positron emission tomography [PET]/CT, PET/magnetic resonance [MR], bone scintigraphy) should not be ordered routinely for women newly diagnosed with clinical stage I or stage II breast cancer, and with no symptoms of distant metastasis, regardless of biomarker status.

Qualifying Statements for Recommendation 1

- Baseline conventional anatomic imaging modalities (chest X-ray, liver ultrasound, bone scan, chest-abdomen-pelvis CT scan) should not be ordered routinely in women with newly diagnosed stage I or II breast cancer because this population exhibits an extremely low prevalence of asymptomatic distant metastasis.
- Although PET/CT may improve the detection rate, the prevalence of distant metastasis in women with early stage I or II breast cancer is very low, and PET/CT may add unnecessary anxiety and resource use. Therefore, the use of PET/CT, as part of the baseline staging in women clinically diagnosed with early-stage breast cancer (I, II) and with no symptoms for distant metastasis is not recommended at this time.
- Although women with triple negative and human epidermal growth factor receptor 2-positive breast cancer have an increased risk of disease recurrence, the association of distant metastasis and biomarker profile in early-stage breast cancer has not been adequately studied in prospective studies of staging investigation. The benefit and risks of the routine use of biomarker profiles to assess for distant metastasis is still unclear and, thus, its use to guide decisions on imaging staging for clinical early-stage breast cancer is not recommended regardless of whether the patient is going for neoadjuvant therapy.

Recommendation 2

March 2024: In women newly diagnosed with stage III breast cancer, baseline staging tests, using PET/CT is the preferred modality and should be considered regardless of whether the patient is symptomatic for distant metastasis or not, and regardless of biomarker profile.

Qualifying Statements for Recommendation 2

- Staging tests should be considered at initial diagnosis, so that appropriate treatment recommendations can be made.

Added in November 2024:

- The following indications are funded for PET scanning in Ontario based on these eligibility criteria (https://www.ccohealth.ca/en/what-we-do/general-health/pet-scans-ontario/oncology-indications):
    - PET for the staging of patients with histologically confirmed clinical stage 2b or stage 3 breast cancer being considered for curative intent combined modality treatment; and/or repeat PET on completion of neoadjuvant therapy, prior to surgery (when there is clinical suspicion of progression)
    - PET for re-staging of patients with locoregional recurrence, after primary treatment, being considered for ablative or salvage therapy.
- March 2024: A prospective, randomized trial (registration # NCT02751710) of PET/CT versus conventional anatomic imaging in clinical stage III patients who will receive neoadjuvant therapy has shown that whole-body PET-CT resulted in upstaging 43 (23%) patients to stage IV compared with 21 (11%) conventional staged patients (absolute difference, 12.3% [95% CI, 3.9 to 19.9];P = .002). As a result the treatment was changed in 35 (81.3%) of 43 upstaged PET-CT patients and 20 (95.2%) of the 21 upstaged conventional patients.
- March 2024: In centres without access to PET scanners, baseline staging tests, using either anatomic (chest X-ray, liver ultrasound, chest-abdomen-pelvis CT scan) and/or metabolic imaging modalities (CT, MR, bone scintigraphy), may be used.