

Stage IIIB

T4, N0 to N2, M0: The tumor has grown into the chest wall or skin (T4), and one of the following applies:

- It has not spread to the lymph nodes (N0).
- It has spread to 1 to 3 axillary lymph nodes and/or tiny amounts of cancer are found in internal mammary lymph nodes on sentinel lymph node biopsy (N1).
- It has spread to 4 to 9 axillary lymph nodes, or it has enlarged the internal mammary lymph nodes (N2).

The cancer has not spread to distant sites (M0).

Inflammatory breast cancer is classified as T4 and is Stage IIIB unless it has spread to distant lymph nodes or organs, in which case it would be Stage IV.

Stage IIIC

Any T, N3, M0: The tumor is any size (or cannot be found), and one of the following applies:

- Cancer has spread to 10 or more axillary lymph nodes (N3).
- Cancer has spread to the lymph nodes under the clavicle (collar bone) (N3).
- Cancer has spread to the lymph nodes above the clavicle (N3).
- Cancer involves axillary lymph nodes and has enlarged the internal mammary lymph nodes (N3).
- Cancer has spread to 4 or more axillary lymph nodes, and tiny amounts of cancer are found in internal mammary lymph nodes on sentinel lymph node biopsy (N3).

The cancer has not spread to distant sites (M0).

Stage IV

Any T, any N, M1: The cancer can be any size (any T) and may or may not have spread to nearby lymph nodes (any N). It has spread to distant organs or to lymph nodes far from the breast (M1). The most common sites of spread are the bone, liver, brain, or lung. In addition to staging, the diagnosis of breast cancer, and formulating the strategy for treatment, also involves expression of genes and proteins. Gene expression can be analyzed by techniques based on hybridization or on the polymerase chain reaction (PCR), while protein expression is analyzed using antibodies. The relevant genes and proteins include estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor-2 (HER-2) (41,42). Overexpressed or amplified HER-2 is a relatively weak prognostic factor in untreated patients, but it is a strong predictive factor

⁴¹ Allred DC. The utility of conventional and molecular pathology in managing breast cancer. *Breast Cancer Res.* 2008;(10 Suppl 4):S4.

⁴² Peppercorn J, Partridge AH. Breast cancer in young women: a new color or a different shade of pink? *J Clin Oncol.* 2008;26:3303–3305.