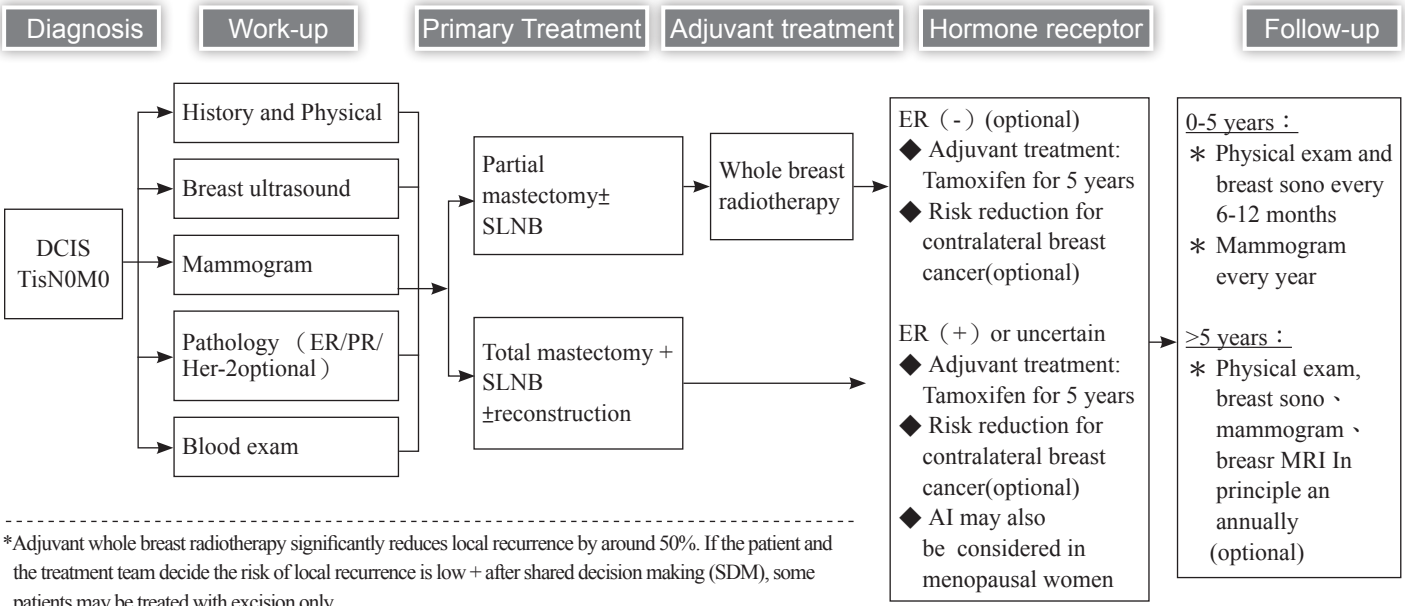
# Breast Cancer




*Adjuvant whole breast radiotherapy significantly reduces local recurrence by around 50%. If the patient and the treatment team decide the risk of local recurrence is low + after shared decision making (SDM), some patients may be treated with excision only.

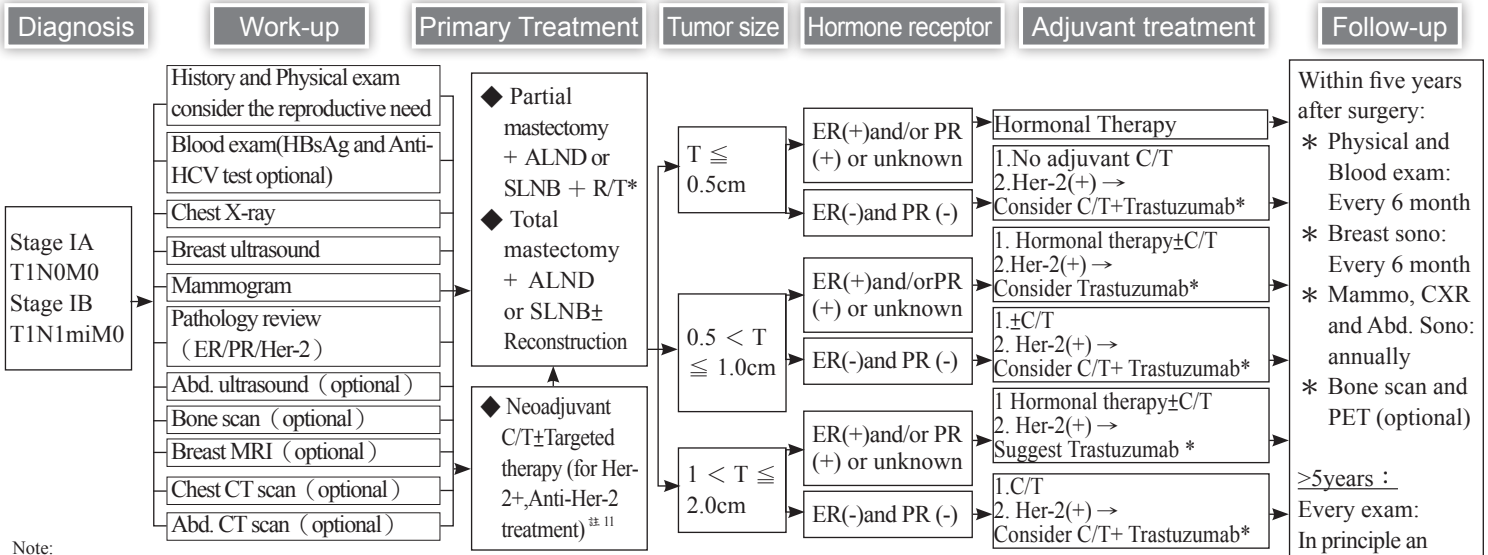
+ Risk factors for local recurrence: palpable mass, larger size, higher nuclear grade, close or involved tumor margins, and age<50 years

*The standard dose of tamoxifen is 20 mg/day for 5 years. Low-dose* tamoxifen (5 mg/day for 3 consecutive years) can only be selected when the patient has symptoms when taking the 20 mg dose or the patient is unwilling or unable to take the standard dose

*Encapsulated or solid papillary carcinoma 已歸類在 DCIS

*This treatment consensus is only for reference. Since each person's situation is different, each physician chooses the most appropriate treatment method and is not intended to be used for medical litigation.

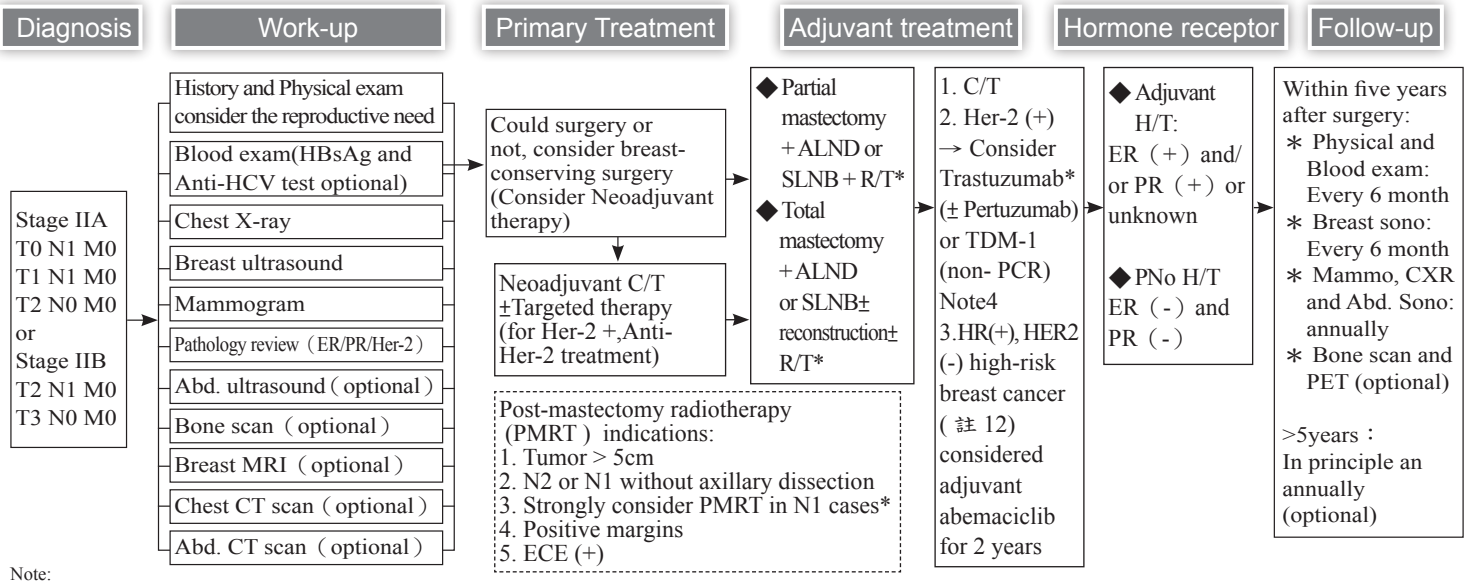
# 《Consensus on Guidelines for Diagnosis and Treatment of Breast Cancer -2》




Note:

1. Stage I & II favorable histology include tubular and colloid. Refer to the NCCN guideline to discuss treatment options through a team meeting
2. Clinical trial is always an option of treatment.
3. Oncotype, Mammoprint, Pam50 test, or Endopredict is optional examination for ER(+) HER2(-) N1 ambiguous patients.
4. *Trastuzumab is used according to health insurance regulations or at its own expense
5. Consider receiving chemotherapy or carrier blood tests (including HBsAg and Anti-HCV test before chemotherapy (optional))
6. Whole breast irradiation is the preferred radiotherapy technique. For details, please refer to the consensus on radiotherapy for breast cancer.
7. If the patient meets all of the following conditions (1) >= 70 years old, (2) undergoing breast cancer preservation surgery, (3) pT1N0, (4) ER + PR + and has received hormone therapy, the team will discuss it instead of Receive adjuvant radiation therapy
8. Hormonal therapy: Tamoxifen takes 5-10 years; AI takes 5-10 years.
9. Main treatment Total mastectomy=Simple mastectomy
10. cT1cN0 HER2+ 和 TNBC 可考慮 Neoadjuvant C/T
11. Pure tubular、Pure mucinous、Pure cribriform、Encapsulated or solid papillary carcinoma(ER+ and/or PR+,HER2-): pT1-3 and pN0: consider Adjuvant endocrine therapy only (See Consensus on Guidelines for Diagnosis and Treatment of Breast Cancer -5)
12. This treatment consensus is only for reference. Since each person's situation is different, each physician chooses the most appropriate treatment method and is not intended to be used for medical litigation.

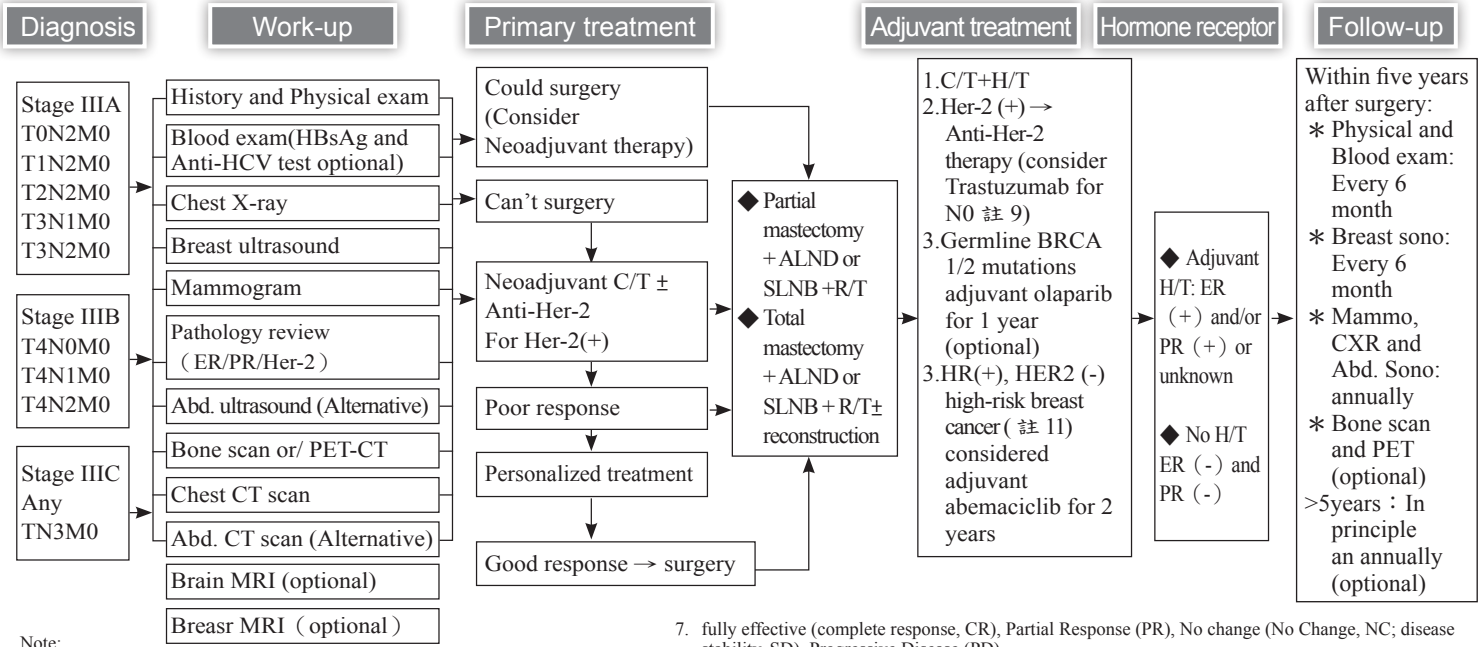
# 《Consensus on Guidelines for Diagnosis and Treatment of Breast Cancer -3》




Note:

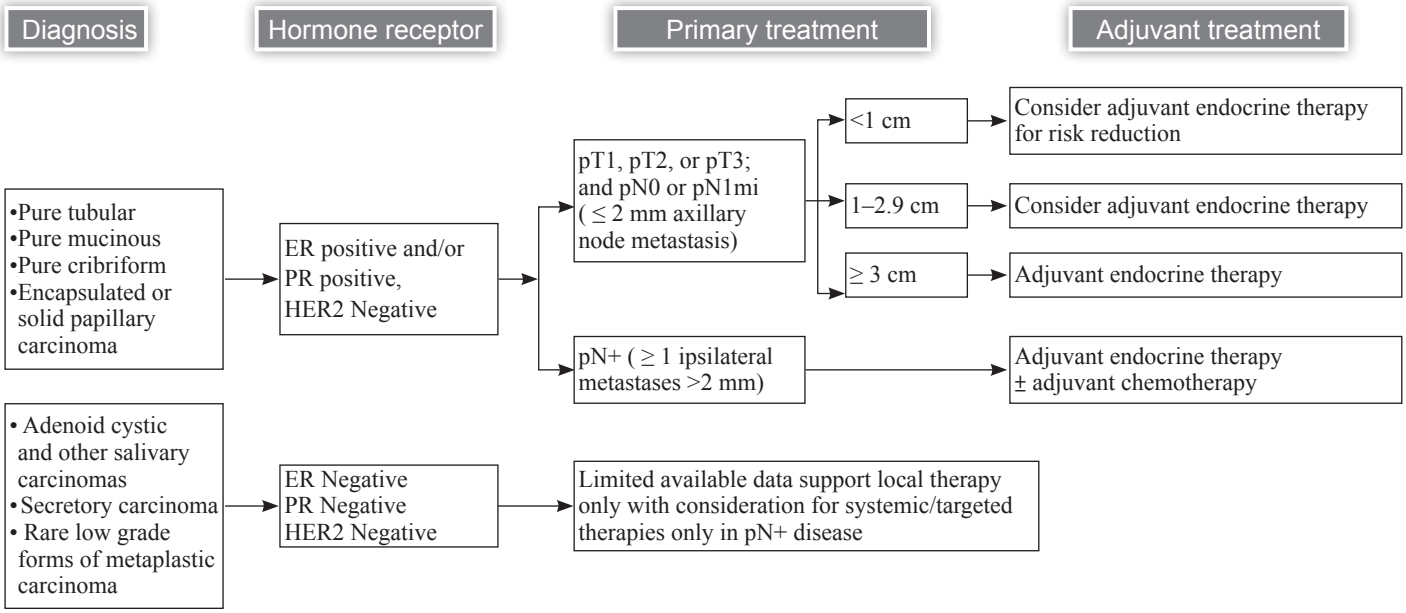
1. Stage I & II favorable histology include tubular and colloid. Refer to the NCCN guideline to discuss treatment options through a team meeting
2. Clinical trial is always an option of treatment.
3. Oncotype, Mammoprint, Pam50 test, or Endopredict is optional examination for ER(+) HER2(-) N1 ambiguous patients.
4. Anti-Her2 treatment is used in accordance with health insurance regulations or at own expense , N+ patients: Consider adjuvant chemotherapy + Trastuzumab + Pertuzumab (category 1)
5. Consider receiving chemotherapy or carrier blood tests (including HBsAg and Anti-HCV test before chemotherapy)
6. *N1 Patients with low recurrence risk can omit post-mastectomy radiotherapy after a shared decision-making discussion. Patients with low risk of recurrence must meet all the following conditions: age>=40 years old, T1, single lymph node invasion, no lymphatic vessel invasion, Her2/Neu (-)
7. Main treatment Total mastectomy=Simple mastectomy
8. TNBC following standard neo/adjuvant therapy: consider Capecitabine maintenance therapy (self-pay)
9. Stage II/III TNBC neoadjuvant chemotherapy combination with immunotherapy as treatment can be considered
10. Pure tubular、Pure mucinous、Pure cribriform、Encapsulated or solid papillary carcinoma(ER+ and/or PR+,HER2-): pT1-3 and pN0: consider Adjuvant endocrine therapy only (See Consensus on Guidelines for Diagnosis and Treatment of Breast Cancer -5)
12. high-risk : breast cancer (with ≥ 4 positive lymph nodes, or 1–3 positive lymph nodes with one or more of the following: Grade 3 disease, Ki67 ≥ 20% ,tumor size ≥ 5 cm。

# 《Consensus on Guidelines for Diagnosis and Treatment of Breast Cancer -4》




Note:

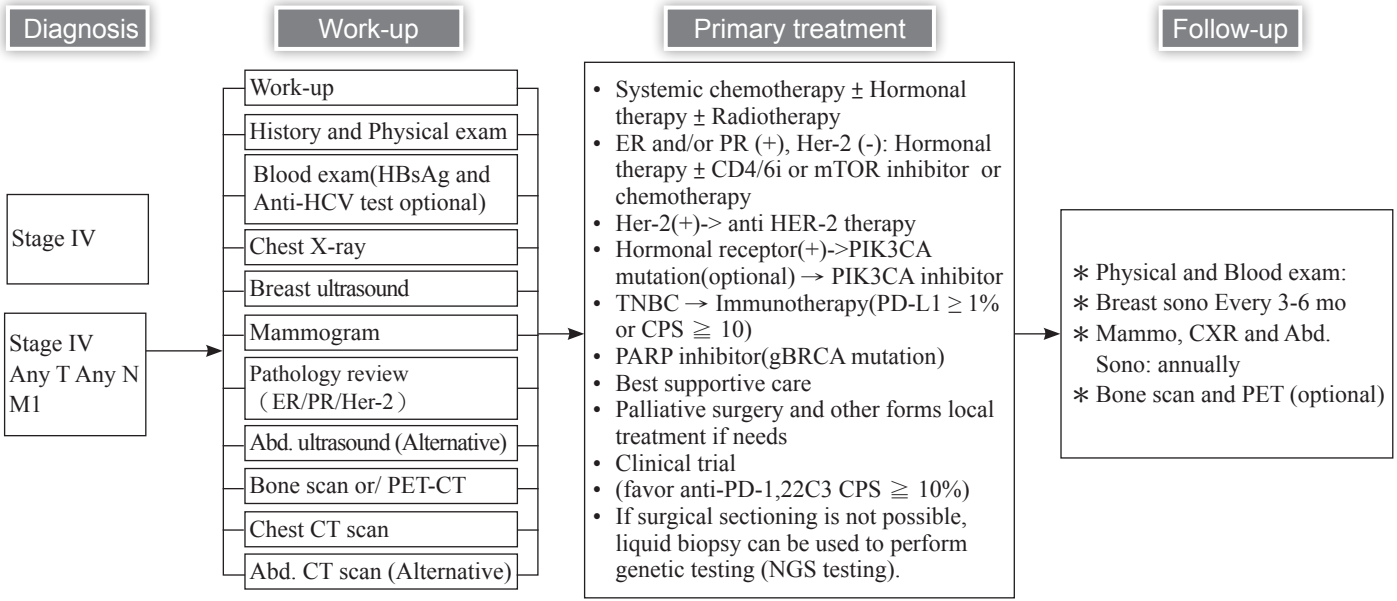
1. Stage I & II favorable histology include tubular and colloid. Refer to the NCCN guideline to discuss treatment options through a team meeting
2. Clinical trial is always an option of treatment.
3. RT Refer to Consensus on Radiotherapy for Breast Cancer
4. Abdomen sono or abdomen CT Alternative
5. Main treatment Total mastectomy=Simple mastectomy
6. TNBC following standard neo/adjuvant therapy: consider Capecitabine maintenance therapy (self-pay)
7. fully effective (complete response, CR), Partial Response (PR), No change (No Change, NC; disease stability, SD), Progressive Disease (PD)
8. Consider neoadjuvant and adjuvant immunotherapy for TNBC high risk
9. Use according to health insurance usage regulations or at your own expense, N+ patients: Consider adjuvant chemotherapy + Trastuzumab + Pertuzumab (category 1)
10. This treatment consensus is only for reference. Since each person's situation is different, each physician chooses the most appropriate treatment method and is not intended to be used for medical litigation.
11. high-risk : breast cancer (with ≥ 4 positive lymph nodes, or 1–3 positive lymph nodes with one or more of the following: Grade 3 disease, Ki67 ≥ 20% ,tumor size ≥ 5 cm。




附註：

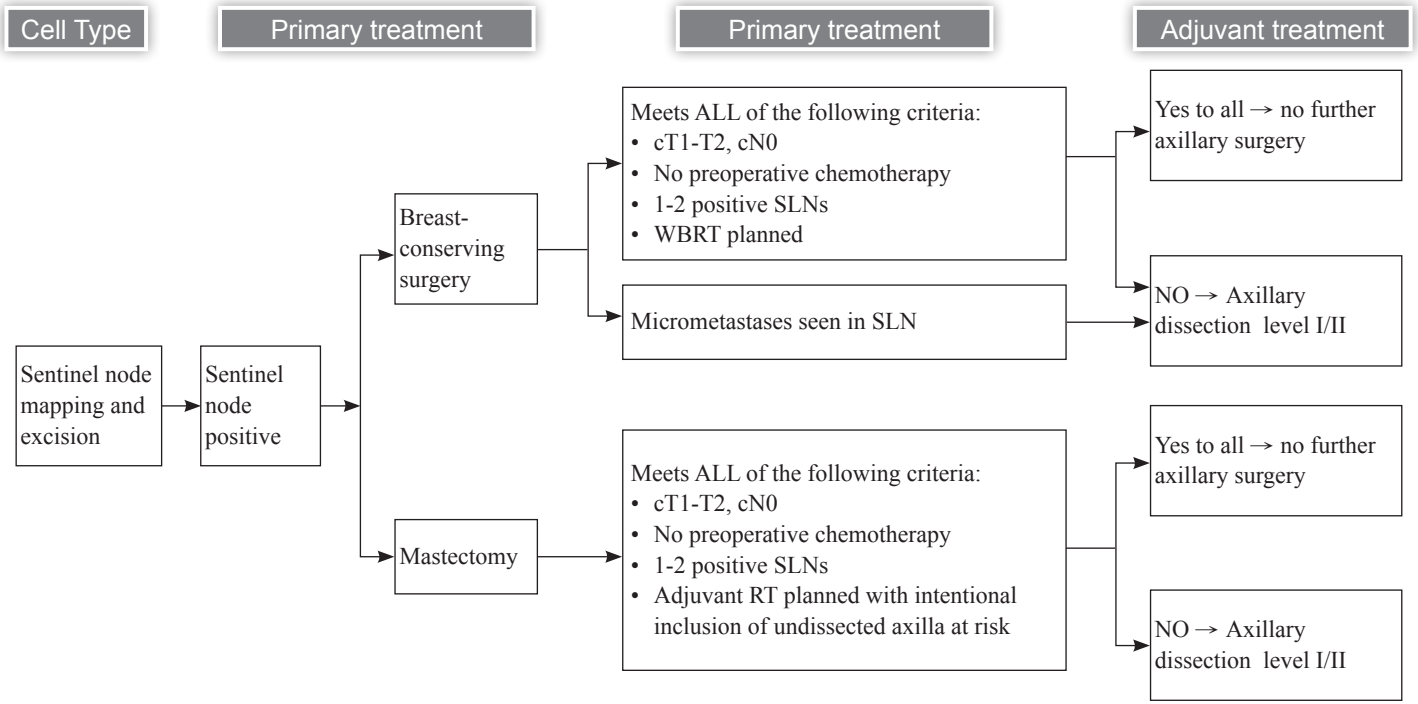
1. There are rare subtypes of metaplastic carcinoma (eg, low-grade adenosquamous and low-grade fibromatosis-like carcinoma) that are considered to have a favorable prognosis without adjuvant systemic therapies.
2. To be associated with favorable prognosis, the favorable histologic type should not be high grade, should be pure (>90% as classified on the surgical excision, not core biopsy alone), and should be HER2 negative. If atypical pathologic or clinical features are present, consider treating as ductal/NST.
3. This treatment consensus is only for reference. Since each person's situation is different, each physician chooses the most appropriate treatment method and is not intended to be used for medical litigation.

## 《Consensus on Guidelines for Diagnosis and Treatment of Breast Cancer -6》




PS：

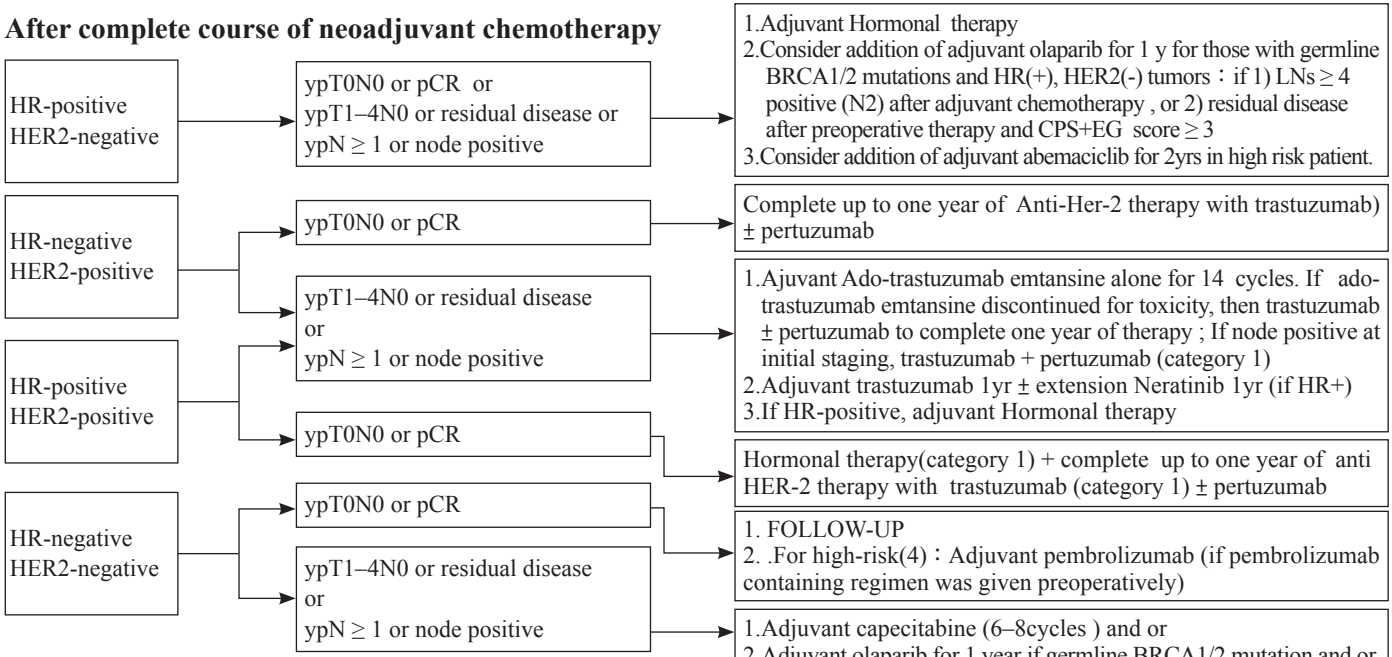
1. Stage I & II favorable histology include tubular and colloid. Please refer to NCCN guideline and recommendation of breast tumor board
2. Clinical trial is always an option of treatment.
3. Abdomen sono or abdomen CT Alternative
4. Anti -HER-2 therapy according to the policy of reimbursement by national health insurance or at their own expense
5. CPS: combined positive score
6. This treatment consensus is only for reference. Since each person's situation is different, each physician chooses the most appropriate treatment method and is not intended to be used for medical litigation.




Note:
This treatment consensus is only for reference. Since each person's situation is different, each physician chooses the most appropriate treatment method and is not intended to be used for medical litigation.

# 《Consensus on Guidelines for Diagnosis and Treatment of Breast Cancer -8》

## After complete course of neoadjuvant chemotherapy




1.CPS+EG score: a score based on pre-treatment clinical stage (CS) post-treatment pathologic stage (PS), ER status (E) and grade (G) after neoadjuvant therapy
2.Postoperative report is DCIS regarded as pCR after neoadjuvant chemotherapy
3.This treatment consensus is only for reference. Since each person's situation is different, each physician chooses the most appropriate treatment method and is not intended to be used for medical litigation.
4. High-risk criteria include stage II–III TNBC. The use of adjuvant pembrolizumab (category 2A) may be individualized

## 《 Reference 》

1. NCCN Clinical Practice in Oncology: Breast Cancer V.4.2024
2. Jemal A, Siegel R, Xu J, Ward E. Cancer statistics, 2010. CA CancerJ Clin 2010;60:277-300.
3. Effects of chemotherapy and hormonal therapy for early breast cancer on recurrence and 15-year survival: an overview of the randomised trials. Lancet 2005;365:1687-1717.
4. Edge SB, Byrd DR, Compton CC, et al., eds. AJCC Cancer Staging Manual, 7th Edition. New York: Springer; 2010
5. Allred DC, Carlson RW, Berry DA, et al. NCCN Task Force Report:Estrogen Receptor and Progesterone Receptor Testing in Breast Cancer by Immunohistochemistry. J Natl Compr Canc Netw 2009;7 Suppl 6:1-1.
6. Dybdal N, Leiberman G, Anderson S, et al. Determination of HER2 gene amplification by fluorescence in situ hybridization and concordance with the clinical trials immunohistochemical assay in women with metastatic breast cancer evaluated for treatment with trastuzumab. Breast Cancer Res Treat 2005;93:3-11.
7. Chuba PJ, Hamre MR, Yap J, et al. Bilateral risk for subsequent breast cancer after lobular carcinoma-in-situ: analysis of surveillance, epidemiology, and end results data. J Clin Oncol 2005;23:5534-5541.
8. Anderson BO, Calhoun KE, Rosen EL. Evolving concepts in the management of lobular neoplasia. J Natl Compr Canc Netw 2006;4:511-522.
9. Fisher B, Costantino JP, Wickerham DL, et al. Tamoxifen for the prevention of breast cancer: current status of the National Surgical Adjuvant Breast and Bowel Project P-1 study. J Natl Cancer Inst 2005;97:1652-1662.
10. International Commission on Radiation Units and Measurements. ICRU Report No 62: Prescribing, Recording and Reporting Photon Beam Therapy (Supplement to ICRU Report 50). Bethesda, MD: ICRU Publications 1999.
11. Radiation therapy for the whole breast: Executive summary of an American Society for Radiation Oncology (ASTRO) evidence-based guideline, Practical Radiation Oncology, 2018; 8:145-152
12. Vargas C, Kestin L, Go N, et al. Factors associated with local recurrence and cause-specific survival in patients with ductal carcinoma in situ of the breast treated with breast-conserving therapy or mastectomy. Int J Radiat Oncol Biol Phys 2005;63:1514-1521.
13. McCormick B. Randomized Trial Evaluating Radiation following Surgical Excision for “Good Risk” DCIS: 12-Year Report from NRG/RTOG 9804. Int J Radiat Oncol Biol Phys 2018;102: P1603

## 《Consensus on Radiotherapy for Breast Cancer-2》

### Regional nodal irradiation

CT should be the standard to define target volume and critical organs

**Indications:** invasive cancers with >= T3 diseases after mastectomy; clinical or pathological N1 diseaese

**Target volume:** ipsilateral axillary basin, subclavicular and supraclavicular fossa. May include internal mammary chain when IMC lymph nodes are clinically involved or when such plans do not violate normal tissue constraints.

**Dose:** 50-50.4 Gy in 25-28 fractions

**Techniques:** Radiation is delivered in tangential fields, intensity modulated radiotherapy, volumetric modulated arc therapy, and tomotherapy. Image guidance and cardiopulmonary sparing techniques are optional.

## 《 Reference 》

1. NCCN Clinical Practice in Oncology: Breast Cancer V.4.2024
2. Jemal A, Siegel R, Xu J, Ward E. Cancer statistics, 2010. CA CancerJ Clin 2010;60:277-300.
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4. Edge SB, Byrd DR, Compton CC, et al., eds. AJCC Cancer Staging Manual, 7th Edition. New York: Springer; 2010
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6. Dybdal N, Leiberman G, Anderson S, et al. Determination of HER2 gene amplification by fluorescence in situ hybridization and concordance with the clinical trials immunohistochemical assay in women with metastatic breast cancer evaluated for treatment with trastuzumab. Breast Cancer Res Treat 2005;93:3-11.
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8. Anderson BO, Calhoun KE, Rosen EL. Evolving concepts in the management of lobular neoplasia. J Natl Compr Canc Netw 2006;4:511-522.
9. Fisher B, Costantino JP, Wickerham DL, et al. Tamoxifen for the prevention of breast cancer: current status of the National Surgical Adjuvant Breast and Bowel Project P-1 study. J Natl Cancer Inst 2005;97:1652-1662.
10. International Commission on Radiation Units and Measurements. ICRU Report No 62: Prescribing, Recording and Reporting Photon Beam Therapy (Supplement to ICRU Report 50). Bethesda, MD: ICRU Publications 1999.
11. Radiation therapy for the whole breast: Executive summary of an American Society for Radiation Oncology (ASTRO) evidence-based guideline, Practical Radiation Oncology, 2018; 8:145-152
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13. McCormick B. Randomized Trial Evaluating Radiation following Surgical Excision for “Good Risk” DCIS: 12-Year Report from NRG/RTOG 9804. Int J Radiat Oncol Biol Phys 2018;102: P1603

## Guidelines for Breast Cancer Radiotherapy

**Whole breast radiotherapy**

CT should be the standard to define target volume and critical organs

**Indications :** invasive cancers or carcinoma in situ after breast conserving surgery

**Target volume :** ipsilateral breast in entirety

**Dose :** 50-50.4 Gy/GyE in 25-28 fractions, or 40-42.5Gy/GyE in 15-16 fractions

**Boost irradiation :** lumpectomy cavity with adequate margins

**Boost Dose :** 10-16 Gy/GyE in 4-8 fractions

**Techniques :** Radiation is delivered in tangential fields, intensity modulated radiotherapy, volumetric modulated arc therapy, tomotherapy, and proton beam therapy. Image guidance and cardiopulmonary sparing techniques are optional. Boost dose can be delivered sequentially or concomitantly. Dose/fractionation for concomitant boost should be converted from standard boost irradiation based on biologically equivalent dose concept if proton beam therapy is planned.

**Chest wall radiotherapy**

CT should be the standard to define target volume and critical organs

**Indications :** invasive cancers with >= T3 diseases after mastectomy; clinical or pathological nodal positive disease; involved or close (<1mm) surgical margins

**Target volume :** ipsilateral chest wall, surgical scar and its margins

**Dose :** 50-50.4 Gy/GyE in 25-28 fractions, or 40-42.5Gy/GyE in 15-16 fractions if no further breast reconstruction.

**Boost irradiation :** surgical scar and its margins

**Boost Dose :** 10-16 Gy/GyE in 4-8 fractions

**Techniques :** Radiation is delivered in tangential fields, intensity modulated radiotherapy, volumetric modulated arc therapy,

tomotherapy, and proton beam therapy. Image guidance and cardiopulmonary sparing techniques are optional. Boost dose can be delivered sequentially or concomitantly. Dose/fractionation for concomitant boost should be converted from standard boost irradiation based on biologically equivalent dose concept if proton beam therapy is planned.

**Regional nodal irradiation**

CT should be the standard to define target volume and critical organs

**Indications :** invasive cancers with >= T3 diseases after mastectomy; clinical or pathological nodal positive disease

**Target volume :** ipsilateral axillary basin, subclavicular and supraclavicular fossa. May include internal mammary chain when IMC lymph nodes are clinically involved or when such plans do not violate normal tissue constraints.

**Dose :** 50-50.4 Gy/GyE in 25-28 fractions. A supplement boost of RT can be delivered to grossly involved or enlarged lymph nodes that have not been surgically addressed. Or 40-42.5Gy/GyE in 15-16 fractions if no further breast reconstruction.

**Boost irradiation :** grossly involved or enlarged lymph nodes that have not been surgical addressed

**Boost Dose :** 10-16 Gy in 4-8 fractions

**Techniques :** Radiation is delivered in tangential fields, intensity modulated radiotherapy, volumetric modulated arc therapy, tomotherapy or proton beam therapy. Image guidance and cardiopulmonary sparing techniques are optional. Dose/fractionation for concomitant boost should be converted from standard boost irradiation based on biologically equivalent dose concept if proton beam therapy is planned.

**《 Reference 》**

1. NCCN Clinical Practice in Oncology: Breast Cancer V6, 2024.
2. Jemal A, Siegel R, Xu J, Ward E. Cancer statistics, 2010. CA CancerJ Clin 2010;60:277-300.
3. Effects of chemotherapy and hormonal therapy for early breast cancer on recurrence and 15-year survival: an overview of the randomised trials. Lancet 2005;365:1687-1717.

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