

# Clinical practice guidelines for pre-operative evaluation of breast cancer: Chinese Society of Breast Surgery (CSBrS) practice guidelines 2021

Chao Zheng, Zhi-Gang Yu; Chinese Society of Breast Surgery

Department of Breast Surgery, The Second Hospital, Cheeloo College of Medicine, Shandong University, Jinan, Shandong 250033, China.

Breast cancer is the most common cancer in women in China. Since Halsted introduced radical mastectomy, surgery has remained the cornerstone of breast cancer treatment. Before performing such surgery, a comprehensive and standardized evaluation should be undertaken. This should include identification of factors that could increase the risk of surgery or prejudice recovery, as well as factors that may affect the subsequent course of the disease. The Chinese Society of Breast Surgery (CSBrS) has conducted a literature review and experts have discussed key clinical issues related to standardizing pre-operative evaluation of patients with breast cancer; evaluated the relevant evidence with reference to the grading of recommendations assessment, development, and evaluation system; combined the accessibility under China's national conditions; and formulated the following written Clinical Practice Guidelines for Pre-operative Evaluation of Breast Cancer (2021 Edition) with the aim of providing a reference for Chinese breast surgeons.

## Level of Evidence and Recommendation Strength

### Level of evidence standard<sup>[1]</sup>

### Recommendation strength standard<sup>[1]</sup>

### Recommendation strength review committee

A total of 84 members of the voting committee of this guideline, including 71 breast surgeons (84.52%), four oncologists (4.76%), four radiologists (4.76%), two pathologist (2.38%), two radiation therapist (2.38%), and one epidemiologist (1.19%).

## Target Audience

Chinese breast disease specialists.

## Recommendations

### Recommendation 1: General evaluation.

Component	Level of evidence	Strength of recommendation
1.1 Evaluation of vital signs <sup>[2,3]</sup>	I	A
1.2 Laboratory evaluation <sup>[3,4]</sup>	I	A
1.3 Clinical examination <sup>[3,4]</sup>	I	A
1.4 Blood pressure monitoring and related pre-operative management <sup>[5]</sup>	I	A
1.5 Glucose monitoring and related pre-operative management <sup>[6]</sup>	I	A
1.6 Specific clinical conditions in patients with breast cancer		
1.6.1 Cardiovascular disease or risk factors <sup>[2,7]</sup>	I	A
1.6.2 Respiratory disease, smoking habit, obstructive sleep apnea syndrome <sup>[2,3]</sup>	I	A
1.6.3 Liver disease <sup>[3,4]</sup>	I	A
1.6.4 Renal disease <sup>[2,3]</sup>	I	A
1.6.5 Diabetes <sup>[2,3]</sup>	I	A
1.6.6 Old age <sup>[2,8]</sup>	I	A
1.6.7 Obesity <sup>[2,8]</sup>	I	A
1.6.8 Anemia <sup>[2,3]</sup>	I	A
1.6.9 Coagulation disorders <sup>[2,3]</sup>	I	A
1.6.10 Risk factors for thrombosis <sup>[2,9]</sup>	I	A
1.6.11 Electrolyte disturbances <sup>[2,3]</sup>	I	A

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**Correspondence to:** Dr. Zhi-Gang Yu, Department of Breast Surgery, The Second Hospital, Cheeloo College of Medicine, Shandong University, Jinan, Shandong 250033, China  
E-Mail: yzg@medmail.com.cn

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**Recommendation 2: Anesthesia-related evaluation.**

Component	Level of evidence	Strength of recommendation
2.1 Evaluation of pre-operative medications <sup>[2]</sup>	I	A
2.2 Pre-operative evaluation of the airway <sup>[2,8]</sup>	I	A
2.3 Comprehensive evaluation of anesthetic safety <sup>[2,3]</sup>	I	A

**Recommendation 3: Tumor-related evaluation**

Component	Level of evidence	Strength of recommendation
3.1 Evaluation of primary tumor		
3.1.1 Breast ultrasound <sup>[10]</sup>	I	A
3.1.2 Mammography <sup>[11]</sup>	I	A
3.1.3 Breast MRI		
a. Uncertain findings on mammography, ultrasound, or physical examination <sup>[11]</sup>	II	A
b. To define extent of cancer or presence of multifocal or multicentric cancer in the ipsilateral breast <sup>[11]</sup>	II	A
c. Occult (or unidentified) primary breast cancer with axillary lymph node metastases <sup>[11]</sup>	II	A
3.1.4 Determination of tumor estrogen/progesterone receptor and human epidermal growth factor receptor-2 status <sup>[11]</sup>	I	A
3.2 Evaluation of regional lymph nodes		
3.2.1 Needle biopsy of suspicious lymph nodes <sup>[12]</sup>	I	A
3.3 Evaluation of distant metastasis		
3.3.1 Bone scan if patient has localized bone pain or high serum alkaline phosphatase <sup>[11]</sup>	II	A
3.3.2 Chest diagnostic CT with contrast if patient has pulmonary symptoms <sup>[11]</sup>	II	A
3.3.3 Abdominal ± pelvic diagnostic CT or MRI with contrast if high serum alkaline phosphatase, abnormal liver function tests, abdominal symptoms, or abnormal findings on physical examination of the abdomen and pelvis <sup>[11]</sup>	II	A
3.3.4 PET/CT can be performed to further investigate suspicious or inconclusive findings in	II	B

(continued)

(continued).

Component	Level of evidence	Strength of recommendation
standard staging studies, locally advanced breast cancer (IIIA and above), and/or distant metastases <sup>[11]</sup>		
3.4 Concomitant evaluation of patients with breast cancer		
3.4.1 Genetic counseling if patient is at risk of hereditary breast cancer <sup>[10]</sup>	II	A
3.4.2 Pregnancy testing in all potentially pregnant women <sup>[11]</sup>	II	A
3.4.3 Assessment of mental health status <sup>[11]</sup>	II	A
3.5 Evaluation of neoadjuvant therapy		
3.5.1 Marking of tumor before commencing neoadjuvant therapy <sup>[13]</sup>	II	A
3.5.2 Imaging evaluation every two cycles <sup>[13]</sup>	II	A
3.5.3 Primary tumor evaluation after neoadjuvant therapy		
a. Breast ultrasound <sup>[13,14]</sup>	I	A
b. Breast MRI <sup>[14]</sup>	II	A
c. If the lesion was clearly shown on a pre-treatment mammogram, mammography can be repeated after neoadjuvant therapy <sup>[14]</sup>	II	A
3.5.4 Regional lymph node evaluation after neoadjuvant therapy		
a. Breast ultrasound <sup>[14]</sup>	I	A
b. Breast MRI <sup>[14]</sup>	II	A

CT: Computed tomography; MRI: Magnetic resonance imaging; PET: Positron emission tomography.

**Discussion**

Pre-operative evaluation is an important aspect of the surgical treatment of breast cancer, basically determining the success or failure of such surgery, including whether it is curative. Surgeons should make pre-operative evaluation a high priority, especially for older or frail patients and those with serious comorbidities.<sup>[2-4]</sup>

The CSBrS panel recommends that patients with breast cancer should also be subjected to pre-operative oncology evaluation<sup>[10,11]</sup> by breast ultrasound, mammography, and breast magnetic resonance imaging (MRI) to identify the number of lesions, their locations and size, regional lymph node status, and distant metastases.<sup>[10,15,16]</sup> Tumor node metastasis stage should be determined in accordance with the eighth edition of the Cancer Staging Manual issued by the American Joint Committee on Cancer.<sup>[17]</sup> The CSBrS panel stresses that the application value of breast MRI should be fully understood: it has high

sensitivity and can show multi-focal, multi-centric, or occult tumors, the relationship between tumor and chest wall, and axillary lymph node metastasis, thus providing a reliable basis for development of a surgical plan. However, it is only moderately specific, does not satisfactorily display microcalcification, and sometimes produces false positives. Thus, decisions about surgery cannot be made purely on the basis of MRI findings.<sup>[10-12,15,16]</sup>

Appendix: Additional discussion section

(Supplementary file, <http://links.lww.com/CM9/A804>)

### Conflicts of interest

The expert committee for these guidelines declares no conflict of interest.

These guidelines are a reference for breast disease specialists in clinical practice. However, the guidelines are not to be used as the basis for medical evaluation, and do not play an arbitrating role in the handling of any medical disputes. The guidelines are not a reference for patients or non-breast specialists. The Chinese Society of Breast Surgery assumes no responsibility for results involving the inappropriate application of these guidelines, and reserves the right to interpret and revise the guidelines.

### List of compiling committees (In alphabetical order by surname)

Zhong-Wei Cao, De-Dian Chen, Yuan-Jia Cheng, Xue-Ning Duan, Zhi-Min Fan, Pei-Fen Fu, Jian Huang, Jun Jiang, Hong-Chuan Jiang, Feng Jin, Hua Kang, Rui Ling, Jin-Ping Liu, Ke Liu, Qian Liu, Yin-Hua Liu, Yun-Jiang Liu, Zhen-Zhen Liu, Yong-Hui Luo, Rong Ma, Da-Hua Mao, Jiang-Hua Ou, Xiang Qu, Guo-Sheng Ren, Ai-Lin Song, Er-Wei Song, Li-Li Tang, Xing-Song Tian, Chuan Wang, Fei Wang, Jian-Dong Wang, Shu Wang, Shui Wang, Xiang Wang, Jiong Wu, Ke-Jin Wu, Fei Xie, Ling Xin, Zhi-Gang Yu, Jian-Guo Zhang, Jin Zhang, Jing-Hua Zhang, Yi Zhao, Zuo-Wei Zhao, Ang Zheng, Chao Zheng, Wei Zhu, Qiang Zou.

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