Breast Disease

Guide to Prevention, Diagnosis and Treatment®
Brigham and Women’s Hospital Breast Care Recommendation Authors

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Brigham and Women’s Hospital and Faulkner Hospital merged in October, 1998, to form Brigham and Women’s/Faulkner Hospitals. Since that time our physicians and administrators have been working together to integrate the programs and services of the two hospitals.

Medical Impact of Breast Cancer

Breast cancer accounts for one-third of all cancers in women. Each year, there are about 180,000 new breast cancers and 46,000 deaths from the disease. Epidemiologic data indicate that African American women have higher mortality from breast cancer (31.4 deaths per 100,000 compared with 25.0 per 100,000 for African Americans and white women, respectively). Factors responsible for the higher mortality in African Americans include late presentation of the disease, higher frequency of poorly differentiated tumors, and socioeconomic factors.

Yet the picture is improving. There is increasing evidence that mammographic screening alone can reduce the breast-cancer death rate by 30%, primarily through the identification of smaller, node negative invasive breast cancers. Studies have shown that compliance with screening is significantly increased by in-person and telephone counseling, especially in minority populations. Advances in biopsy techniques, surgery, chemotherapy, hormonal treatment, and supportive therapy have substantially reduced morbidity. The identification of high-risk women and the use of tamoxifen for chemoprevention and prophylaxis have demonstrated potential in preventing the disease in the most vulnerable population.

The primary care physician can play an important role in further reducing the morbidity and mortality associated with the disease by encouraging women to undergo screening and by referring women who have findings suggestive of breast cancer to the appropriate channels for diagnosis and treatment.

These guidelines include:

- Methods for determining women at elevated risk for breast cancer
- Recent recommendations for screening mammography
- Suggestions for managing benign breast symptoms
- An algorithm for managing common breast problems

The goal of this guide is to provide physicians with clear guidelines for screening as well as clinical pathways for risk counseling, diagnosis, and treatment of symptomatic breast disease. It is also designed to distinguish the roles of the primary care physician, Breast Center, and breast surgeon.

The recommendations presented herein are designed to provide women with optimal and personalized care. They are based on a comprehensive assessment of the recent literature on breast cancer and the CRICO Breast Care Management Algorithm. This guide is not intended to convey rigid standards, but instead should be tailored to the needs of the individual woman.
Recommendations For Screening

Mammography
It is well established that annual mammography reduces breast cancer mortality by about 30% in women age 50-69. The effects of screening in women age 40-49 have been a source of controversy, with legitimate arguments on both sides. On the one hand, data indicates that over a 10-year period, the cumulative risk of a false positive mammogram is about 50%, and the rate of benign biopsy approaches 20%. Moreover, several trials have shown no reduction in mortality from breast cancer in women routinely screened in this age group. On the other hand, two recent large trials have shown reductions in mortality from breast cancer in women under age 50, although these reductions did not reach statistical significance. Several organizations, including the American Medical Association, the American Cancer Society, the National Cancer Society, and the American College of Radiology now recommend annual mammograms for women beginning at age 40, while the American College of Physicians, the United States Preventive Services Task Force and the Canadian Preventive Services Task Force do not. Brigham and Women's and Faulkner Hospitals support the recommendation of annual screening mammograms for women in this age group.

Clinical breast exam
A clinical breast exam (CBE) should be performed annually in all women 20 and older. It should include inspection of the nipple for recent inversion or excoriation and examination of the skin for erythema and retraction. To check for retraction, the patient is asked to place her hands on her waist and contract her pectoralis muscles, then to bring her arms over her head. Palpation should begin with the periclavicular and axillary nodes and should progress to a systematic examination of the entire breast, including tissue overlying the sternum, the inframammary fold and the retroareolar area.

Breast self-exam
Optimally, breast self-exam (BSE) is performed 5-7 days after the onset of menstruation, when the breast tissue is least engorged in premenopausal women and on the same day of the month for postmenopausal women. Randomized controlled clinical trials have shown no reduction in mortality from breast cancer among women who performed monthly BSE. However, since BSE is inexpensive and noninvasive, most physicians recommend it as a screening method to their patients. Patients who find BSE to be anxiety-provoking can be reassured that annual CBE and screening mammography are sufficient for breast cancer screening.
Genetic testing for breast cancer

Up to 10% of breast cancers are inherited. Mutations in two genes, BRCA1 and BRCA2, appear to be linked to about 50% of inherited breast cancers. Any of several hundred known mutations in either gene confers a 50-85% chance of developing the disease by age 75. The prevalence of BRCA mutations is 2.5% among Ashkenazi Jews and 0.1% in the general population.

DNA testing is available for both genes. Because three distinct mutations are prevalent in Ashkenazi families, the charge - about $350 - is substantially lower than the $2,700 for testing the complete mutation panel in the general population.

There is evidence that prophylactic mastectomy in women with a family history of breast cancer can reduce the risk of breast cancer by 90%. Although tamoxifen prophylaxis is associated with a reduction in risk among women at increased risk by the Gail model, the benefits appear to be limited to ER+ tumors. There is some evidence of the effectiveness of prophylactic oophorectomy and tamoxifen prophylaxis in women with mutations, but concern about ER- breast cancers persists. These data are rapidly evolving and should be watched carefully.

Women with a family history who are considering prophylaxis should be informed about the tests and, if they desire, referred to a genetic counselor. The tests may be covered by health insurance. Although there was initial concern that a positive test result would affect a woman’s ability to obtain health or life insurance, there have been no known cases of such discrimination to date. Massachusetts enacted a genetic privacy law in 2000.

Risk Determination

Although a few lifestyle factors have been associated with an increased risk of breast cancer, the strongest risk factors are non-modifiable. Therefore, it behooves the PCP to identify the women at high risk who might benefit from genetic counseling or chemoprevention.

Major risk factors

- Genetic Predisposition
  - a. Family history of breast or ovarian cancer. BRCA1/2 mutation: family history of early onset breast cancer, often in more than one relative; may include ovarian cancer; or known mutation in patient or close relative.
  - b. Li Fraumeni Syndrome (p53): Family history of early onset breast cancer plus sarcoma, adrenal carcinoma, childhood cancers, or other cancers before age 45.
  - c. Family history, not genetically defined: Multiple close relatives in one lineage with breast cancer, particularly if premenopausal at diagnosis.

- Histologic risk factors. Previous breast cancer or ductal carcinoma in situ. Previous biopsy indicating lobular carcinoma in situ, atypical ductal hyperplasia, or atypical lobular hyperplasia.

- Therapeutic radiation including breast tissue in the field. Breast cancer risk usually increases 10-15 years after radiation completed.

- Age. Breast cancer incidence increases with age.

Weaker risk factors

- Reproductive history. Menarche before age 12, menopause after age 55, nulliparity, first live birth after 30.

- Alcohol consumption. Some observational studies suggest that risk increases with one drink a day and continues to rise linearly with amount of alcohol consumed.

- Postmenopausal hormone use. Majority of published data suggest an association between HRT use and breast cancer. The Nurses’ Health Study showed a RR of 1.3 to 1.4 in current users; risk increased with age and length of use (RR 1.45 with >5 years use). Progestin use may have additive effect on risk.

- Weight. Observational studies suggest that postmenopausal overweight women who are not on hormone replacement therapy may be at increased risk for breast cancer.

Recommendations for surveillance should be made on major risk factors exclusively.

Risk assessment

Breast cancer risk for postmenopausal women may be assessed using a tool adapted from the Gail model, which is available through the National Cancer Institute (http://bcra.nci.nih.gov/brc/q1.htm). After completing a brief questionnaire, a woman will receive an estimate of her chances of being diagnosed with breast cancer within the next five years. A score of 1.67 or higher indicates that she may benefit from tamoxifen prophylaxis. However, the potential disadvantages (an increased risk of endometrial cancer, vascular events, and menopausal symptoms) should be weighed against the advantages of tamoxifen use.
Screening Algorithm

Results of Screening Mammogram

- BIRADS 1, 2*: Routine follow-up by PCP
- BIRADS 0, 3: Follow radiology advice
- BIRADS 4, 5: Refer for image-guided core biopsy

Algorithm for Nipple Discharge

Nipple Discharge

- Bilateral
  - Physical exam
    - Bloody discharge: Refer to breast surgeon
    - Non-bloody discharge: Evaluation by PCP. Consider galactorrhea work-up: prolactin, TSH

- Unilateral
  - Refer to breast surgeon

*American College of Radiology Breast Imaging Reporting and Data System (BIRADS)

0 Assessment incomplete; additional imaging necessary
1 Negative
2 Benign finding
3 Probably benign finding - short interval follow-up
4 Suspicious abnormality - biopsy recommended
5 Highly suspicious of malignancy

§Results will be benign in 65% of cases, malignant in 25%, indeterminate in 10%. Procedure is not recommended in the following situations:
- Mammographic abnormality too close to chest wall or nipple
- Presence of coagulopathy
- Severe arthritis
- Mammographic lesions requiring magnification
- Mammographic finding of “complex sclerosing lesion” - best evaluated by complete surgical excision

BIRADS 1, 2* BIRADS 0, 3 BIRADS 4, 5
Routine follow-up by PCP Follow radiology advice Refer for image-guided core biopsy

Routine follow-up by PCP

Atypical, discordant, malignant
Refer to breast surgeon

Benign
Routine follow-up by PCP

Positive
Appropriate treatment

Negative
Refer to breast surgeon
Algorithm for Palpable Mass

- Mammography can be performed safely in pregnant women. Radiation exposure is <1rem, and radiation exposure < or equal to 500 rem above background is considered safe in pregnancy.
Algorithm for Breast Pain

Breast Pain

History and Physical

Mass

See “Palpable Mass” algorithm

Cyclical pain

Wait 2 cycles

Pain resolves; routine follow-up by PCP

Non-cyclical pain

Pain persists

Bilateral

Unilateral

Global

Age < 35

Symptom management

Age > 35

Bilateral mammogram

Ultrasound

Negative

Positive

Focal

Symptom management for 2 cycles or 2 months if postmenopausal

Cyst

Solid

Follow “Results of Screening Mammogram” algorithm

Follow “cyst” pathway on “Palpable Mass” algorithm

Follow “Solid Mass” pathway on “Palpable Mass” algorithm

Persists: Refer to breast surgeon

Resolves: Routine follow-up by PCP

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Management Recommendations for Mastalgia

History and physical
Consider other sources of chest pain or chest wall pain including pectoralis strain, cervical radiculopathy, costochondritis, hiatal hernia and cholelithiasis.

Reassurance/conservative therapy (effective in majority of cases)

- Supportive bra
- Eliminate caffeine
- Ibuprofen: up to 800 mg po tid
- Warm packs
- Some evidence of efficacy of vitamin E (400 IU qid) and vitamin B6 (10-20 mg qid), but neither have been evaluated in large clinical trials

For continued or severe symptoms

- There is some evidence for the effectiveness of evening primrose oil, but no data from large trials. Typically, it is administered in a 3 gm daily dose for 12 months, and requires 4 months of use before response is appreciated by patients. A minority have side effects—primarily nausea/bloating. In about half of patients, symptoms recur, but are less severe.
- If breast pain is cyclical and recurrent (particularly premenstrually) a diuretic may be helpful.
- Some reports indicate that danazol and bromocriptine are effective for breast pain, but these therapies are not commonly used at Brigham and Women's and Faulkner Hospitals.

For Tracking Abnormal Mammography Results

At Brigham and Women's and Faulkner Hospitals, patients are informed of the results of their mammogram by the radiologist on the day of their appointment. If further testing is necessary, the primary care physician (or ordering physician) is informed by the radiologist of the need for short interval follow-up, biopsy, or consultation with a breast surgeon. The primary care physician or ordering physician is responsible for ensuring that the recommended testing or follow-up is carried out. Physicians should have a tracking system to ensure that patients follow up appropriately and that results are communicated to patients in a timely manner.
References


