

Preventive Medicine: Breast Cancer

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Breast cancer in women is the most common type of cancer worldwide. Women have a much greater chance of developing breast cancer as compared to men. American Cancer Society (ACS), US Preventive Services Task Force, and the American Congress of Obstetricians and Gynecologists recommend screening for specific age groups to detect breast cancer at an early stage. The screening tests include clinical examination, mammography, and MRI. Mammography, however, remains the most favored method.



Introduction to Breast Cancer

Breast cancer is the disease of breast characterized by development of cancerous (malignant) cells from the tissues of the breast. It is second largest cause of death in American women. More than 3.1 million women in the U.S are either suffering from breast cancer or have a history. A woman's risk of developing breast cancer in a lifetime is about 1 in 8, whereas it is 1 in 1000 in the case of men. Following new cases of breast cancer are estimated to appear in the year 2017 :

- New cases of breast cancer - 252,710
- New cases of invasive breast cancer in men - 2,470

In 2017, about 30% of the diagnosed cancer cases in women were expected to be breast cancer. The mortality risk due to breast cancer is higher in African-American women as

compared to Asian, Native-American women, and Hispanic women.

Screening Tests

Breast cancer screening tests include the following:

1. Breast examination
 - Self-examination (generally discouraged)
 - Clinical examination (cannot replace Mammography)
2. Mammography (Most proven in reducing breast cancer mortality)
3. MRI (magnetic resonance imaging especially in women with a greater risk of breast cancer)

Institutes:

- American College of Obstetricians and Gynecologists (ACOG)
- American Cancer Society
- American Comprehensive Cancer Network
- National Cancer Institute
- U.S. Preventive Services Task Force

Screening Guidelines - What and When?

	Mammography	Clinical breast examination	Breast self-examination	Breast self-awareness
American college of obstetricians and gynecologists	Age 40 and older / annually	Age 20-39 / every 1-3 years	Consider for high-risk patients	Recommended
American cancer society	Age 40 and older / annually	Age 40 and older / annually	Optional for age 20 and older	Recommended
American comprehensive cancer network	Age 40 and older / annually	Age 20 - 39 / every 1 - 3 years Age 40 / annually	Recommended	Recommended
National cancer institute	Age 40 and older / every 1-2 years	Recommended	Not recommended	-
U.S. preventive services task force	Age 50-74 / biennially	Insufficient evidence	Not recommended	-

American Cancer Society (ACS) Guidelines

Following are the ACS guidelines for the screening of breast cancer:

- Screening with mammography is strongly recommended in women who are at the age of 45.
- Annual screening in the age groups of 45-54 years.
- Biennial screening in women who are 55 years or older.
- Screening should be continued for as long as the individual is in good health and has a life expectancy of at least 10 years.

US Preventive Services Task Force (USPSTF) screening guidelines:

Breast examination

There is no need for the clinicians to teach women breast self-examination.

There is insufficient data to state the additional benefits or harms of clinical breast examination in the presence of mammographic screening for women who are aged 40 or older.

Screening mammography

Recommendations for screening mammography are as follows:

- **Women aged 40-49 years should NOT be offered screening mammography.** Biennial screening mammography decision before 50 years of age should be an individual one. In this case, the values of a patient regarding specific benefit and harms should be taken into account before screening mammography.
- **Screening mammography should be offered every two years to women between the age group of 50 to 74.**
- There is insufficient data to state the additional benefits and drawbacks of screening mammography for women who are aged 75 or older.
- Currently, there is insufficient evidence on whether or not digital breast tomosynthesis (DBT) has any additional advantages or disadvantages when used as a priority screening method for breast cancer.

Note- these guidelines are applicable to asymptomatic women of age 40 years and above who don't have any family history, preexisting cancer, who are not at the risk of breast cancer or who don't have any history of chest radiation at the young age.

The American Congress of Obstetricians and Gynecologists (ACOG) Screening guidelines

The ACOG has updates for breast cancer screening for average-risk women. The guidelines for breast cancer screening are as follows:

Breast examination

Encourage breast self-awareness and breast self-examination. Any changes in the breasts should be reported to the healthcare provider.

- Clinical breast examinations for women of the age group 20-39 are recommended every 1 to 3 years.
- Clinical breast examinations for women of the age group 40 and above are recommended on an annual basis.

Mammography

It is important to educate women on the predictive values of mammographic screening

for breast cancer detection. The potential for false positive and false negative screening should be clearly communicated to the patient. The women receiving mammogram should be informed that there is a potential for additional imaging or biopsies that might be required based on results of mammography.

- All women who are 40 years or older should have annual mammographic screening.
- Based on individual risk and concerns, biennial screening can be recommended to the women who do not accept annual screening.
- Women who are at an average risk of breast cancer development should **NOT** be offered breast magnetic resonance imaging (MRI).
- Women who have positive test results for *BRCA1* and *BRCA2* gene mutations should be offered enhanced screening. Risk reduction methods should also be discussed with the individuals.
- Enhanced screening can be provided to those women who are either untested or have negative test results for *BRCA1* and *BRCA2* gene mutations in addition to high risk (20 percent or greater) for breast cancer.

There is a lot of variations in current guidelines that create challenges in the minds of both patients and physicians for the choice of the most appropriate approach in the screening of breast cancer in a particular patient.

References

Breast Cancer Guidelines: Breast Cancer Screening, Pharmacologic Interventions for Breast Cancer Risk Reduction, Lymph Node Biopsy and Dissection. (2017, January 31). Retrieved April 06, 2017, from <http://emedicine.medscape.com/article/2247407-overview>

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