Educational Objectives:

1. Describe the major benefits and harms of screening mammography in women of different age groups
2. Compare and contrast available breast cancer screening modalities
3. Apply breast cancer screening guidelines in women of different age groups
4. Identify screening controversies in women with dense breasts

Background:

Mammography has been the mainstay of screening for breast cancer in women for more than 30 years and is credited with decreasing mortality from this disease. Current studies, however, point to the limitations of this technology and its potential harms. A particular concern is the harm of over-diagnosing cancers that may never become clinically significant, resulting in unnecessary treatment and surgery. In 2009, the U.S. Preventive Services Task Force (USPSTF) changed existing screening guidelines to acknowledge the limitations of mammography in decreasing mortality, especially in younger age women, and highlighted its benefits and harms in all age groups. Updated guidelines from the USPSTF (Siu, 2016), the American Cancer Society (ACS) (Oeffinger, 2015), and other policy-making groups are reviewed here and provide additional information to guide screening decisions in the following areas:

- The age to start and stop screening
- The optimal screening interval
- The efficacy of newer screening technologies, such as digital mammography and digital breast tomosynthesis (DBT)
- Screening in women with dense breasts

CASE ONE:

A 47-year-old woman with no family or personal history of breast cancer or current breast symptoms presents for routine care. She takes no medications. She has never had a mammogram and asks you when screening should start.
Questions:

1. What are the potential benefits of screening mammography in this patient?

2. What are the potential harms?

3. What are the similarities and differences between the USPSTF and ACS guidelines regarding screening mammography in women in your patient’s age group?

4. How do you engage your patient, as well as other women in your patient panel, in shared clinical decision making?

5. Your patient is not particularly concerned about developing breast cancer and wishes to minimize medical testing that is not “essential.” You obtain more history and determine that she is at low risk for breast cancer. What is a reasonable screening decision in this patient?

6. Would you perform a clinical breast exam (CBE)?
CASE TWO:

A 63-year-old woman with no personal or family history of breast cancer presents to your office for routine health care. Since age 40, she has participated in routine annual screening mammography. An abnormal mammogram at age 50 led to a breast biopsy that showed normal fibro-glandular tissue. A follow-up targeted mammogram six months later was normal, and she returned to annual screening. She asks how often she should have breast cancer screening and with what test.

7. What are your screening recommendations? Upon what do you base your opinion?

CASE THREE:

A 75-year-old woman with well-controlled hypertension and type 2 diabetes has a 35-year history of normal annual mammograms. She asks you if she still needs mammograms.

8. How do you answer her question?

BONUS CASE:

A 43-year-old woman just completed her first mammogram. She receives a letter, copied to you, that includes the following statement, "Your mammogram demonstrates that you have dense breast tissue, which could hide small abnormalities. You might benefit from supplementary screening tests, which can include a breast ultrasound screening or a breast MRI examination, or both, depending on your individual risk factors. A report of your mammography results, which contains information about your breast density, has been sent to your physician's office and you should contact your physician if you have any questions or concerns about this report."
9. How do you respond to this information?
Primary References:


Additional References:

4. Lannin DR, Wang S. Are small breast cancers good because they are small or small because they are good? N Engl J Med. 2017;376:2286-91


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**Knowledge Questions:**

1. A 44-year-old woman presents for routine health care. She wishes to discuss breast cancer screening. In reviewing with her the benefits and risks of mammography, which of the following statements is true?

   a. Screening mammography has a major impact on saving lives from breast cancer in women age 40 to 49.
   b. The harms of screening are low in women age 40 to 49 and increase with age.
   c. False positive results leading to additional testing, including biopsies, are the most important harm of mammography.
   d. Overdiagnosis of breast cancers that would never become clinically significant is the most important harm of mammography.

2. Which of the following statements regarding dense breasts is true?

   a. The presence of dense breasts on mammography is the most important risk factor for developing breast cancer in women with this finding.
   b. DBT is more sensitive than digital mammography in detecting cancers in women with dense breasts and decreases recall rates.
   c. Used as an adjunctive test in women with dense breasts, ultrasound further increases cancer detection rates and decreases recall rates.
   d. Used as adjunctive tests in women with dense breasts, both ultrasound and MRI decrease mortality from breast cancer.

3. The USPSTF and the ACS screening guidelines agree or overlap for which of the following recommendations?

   a. Initiate screening in women at age 45
   b. Perform annual screening from ages 40 to 49 years
   c. Engage in shared decision-making in women less than 45 years
   d. Perform biennial screening in women ages 55 years and older
   e. Continue screening in women ages 75 years and older
   f. c and e
   g. c and d