Mammogram for breast cancer screening (age from 40 to 49 years old): Do I have to do it?

This guidance is for people with a normal injury possibility and not for people with a high risk of injury. The figures are apparent for women over the age of 60 and dependent on women who live in Europe. Regarding breast cancer screening with a mammogram: a mammogram examination reveals small cancers before they are felt or show symptoms. You will place each breast between two surfaces of the X-ray machine. This examination causes flatness of the breast and may be uncomfortable at times.

Do a mammogram year	Do a mammogram every two years	Not doing a mammogram	Patients Questions
You will have a mammogram every year. If something unusual is seen, you may have other tests, such as an additional mammogram or a breast sample	You will have a mammogram every two years. If something unusual is seen, you may have other tests, such as an additional mammogram or a breast sample	You will not be examined mammogram scheme. In the event that you find a lump or notice any changes, a medical specialist may recommend a diagnostic mammogram	**What does the options include?**
Almost 32 of the 1000 people (3 0.2%) is diagnosed with breast cancer	Almost 32 of the 1000 people (3 0.2%) are diagnosed with breast cancer	Nearly 26 out of 1,000 people (2.6 %) are diagnosed with breast cancer	**What is my chance to be diagnosed with breast cancer within ten years**
Almost 4 out of 1,000 people (0.4%) will die from breast cancer. Your total chance of death will not change	Almost 4 out of 1,000 people (0.4%) will die from breast cancer. Your total chance of death will not change	Almost 5 out of 1,000 people (0.5 %) will die from breast cancer. Your total chance of death will not change	**What is my chance to die in ten years?**
Of every 1000 people, almost: 200 (20%) may have one wrong examination that calls for other tests, but then no cancer is detected. 29 (2.9%) may have taken a sample from them to examine the breast, but no cancer was detected. 6 (0.6 %) were found to have cancer, which would have been impossible to cause symptoms or death if it had not been detected by examination. But the treatment followed may cause harm to the patient	Of every 1000 people, almost: 140 (14%) may have one wrong examination that warrants other tests, but then no cancer is detected. 20 (2%) may have taken a sample from them to examine the breast, but no cancer was detected. 6 (0.6 %) were found to have cancer, which would have been impossible to cause symptoms or death if it had not been detected by examination. But the treatment followed may cause harm to the patient.	Of every 1000 people almost: 1 (0.1%) would die from breast cancer which would have been avoided if they had had a mammogram	**What is the damage in ten years?**

This patient decision aid (Mammogram for Breast Cancer Screening (Age 40-49): was created by the EBSCO Health Innovations and Evidence-Based Medicine Development Team (Brian S. Alper, MD, MSPH, FAAFP, FAMIA; Martin Mayer, DMSc, MS, PA-C; Eric Manheimer, PhD; Bonnie Johnson, MBA; Khalid Shahin, BA). Review for clinical accuracy and patient-friendly readability was provided by DynaMed Shared Decision reviewers and editors (Susan Troyan, MD, FACS; Joseph S. Wislar, MS; Ryan Kelly, MS). Translation to Arabic was provided and reviewed by Fatima Al Hannan, Faye Al Khalifa, Julie Sprakel, RGN, MSc, FFNMRCSI, PhD and Haitham El-Baghdady, MD, MHA. The currency and accuracy of the content of this patient decision aid is maintained with a systematic process of:

1) systematically searching for the best available evidence to answer the scoped patient questions using DynaMed, PubMed with limiters for systematic reviews, PubMed with limiters for original research reports, and citation tracing
2) critically appraising articles which meet inclusion criteria for results and certainty of those results with consideration of risk of bias, directness, consistency and precision (based on GRADE Working Group methodology)
3) selecting the best available method of synthesis of evidence results based on certainty of evidence, magnitude of important differences, and expected patient perception
4) synthesizing evidence results to provide the best answer to represent the body of evidence
5) translating the summary of findings (synthesized evidence results) to patient-friendly language and presentation
6) confirming that patient-friendly presentation accurately represents the evidence synthesis
7) reviewing all feedback from clinical review, surveys of people who may face this decision, and feedback from users of the decision aid to revise content at any of the prior steps as warranted (and continue through subsequent steps)
8) continuously repeating the systematic searches and repeating subsequent steps as warranted

The evidence review for this patient decision aid was first completed on January 30, 2020 and last updated on June 22, 2020. There were 58 articles screened through systematic searches and 12 articles included for critical appraisal. References providing the greatest contribution to this decision aid include:

1. Baines CJ, To T, Miller AB. Revised estimates of overdiagnosis from the Canadian National Breast Screening Study. Prev Med. 2016 Sep;90:66-71.
2. Centers for Disease Control and Prevention. Mammography use: Health, United States, 2018. Accessed November 8, 2019. Available at https://www.cdc.gov/nchs/fastats/mammography.htm and https://www.cdc.gov/nchs/data/hus/2018/033.pdf.
3. DevCan: Probability of Developing or Dying of Cancer Software, Version 6.7.8, April 2020. Surveillance Research Program, Statistical Methodology and Applications, National Cancer Institute, 2012. http://surveillance.cancer.gov/devcan/. Data used: SEER 21 Incidence and Mortality, 2000-2017, with Kaposi Sarcoma and Mesothelioma (November 2019 submission). SEER data are also available in various forms/analyses via an online platform (https://seer.cancer.gov/explorer/application.php) and SEERStat (https://seer.cancer.gov/seerstat/).
4. Scharpantgen A, Hofvind S, Seroczynski P, Morais A, Rodrigues V, Bento MJ, Gomes de Carvalho J, Natal C, Prieto M, Sánchez-Contador Escudero C, Zubizarreta Alberti R, Fernández Llanes SB, Ascunce N, Ederra Sanza M, Sarriugarte Irigoien G, Salas Trejo D, Ibáñez Cabanell J, Wiege M, Ohlsson G, Törnberg S, Korzeniewska M, de Wolf C, Fracheboud J, Patnick J, Lancucki L, Ducarroz S, Suonio E. False-positive results in mammographic screening for breast cancer in Europe: a literature review and survey of service screening programmes. J Med Screen. 2012;19 Suppl 1:57-66.
5. Hubbard RA, Kerlikowske K, Flowers CI, Yankaskas BC, Zhu W, Miglioretti DL. Cumulative probability of false-positive recall or biopsy recommendation after 10 years of screening mammography: a cohort study. Ann Intern Med. 2011 Oct 18;155(8):481-92. Erratum in: Ann Intern Med. 2014 May 6;160(9):658.
6. Marmot MG, Altman DG, Cameron DA, Dewar JA, Thompson SG, Wilcox M. The benefits and harms of breast cancer screening: an independent review. Br J Cancer. 2013 Jun 11;108(11):2205-40.
7. Miller AB, Wall C, Baines CJ, Sun P, To T, Narod SA. Twenty five year follow-up for breast cancer incidence and mortality of the Canadian National Breast Screening Study: randomised screening trial. BMJ. 2014 Feb 11;348:g366.
8. Qaseem A, Lin JS, Mustafa RA, Horwitch CA, Wilt TJ; Clinical Guidelines Committee of the American College of Physicians. Screening for Breast Cancer in Average-Risk Women: A Guidance Statement From the American College of Physicians. Ann Intern Med. 2019 Apr 16;170(8):547-560.
9. Nelson HD, Fu R, Cantor A, Pappas M, Daeges M, Humphrey L. Effectiveness of Breast Cancer Screening: Systematic Review and Meta-analysis to Update the 2009 U.S. Preventive Services Task Force Recommendation. Ann Intern Med. 2016 Feb 16;164(4):244-55.

Funding: This work was supported by Think Pink Bahrain.