

Early diagnosis of breast cancer: population survey on knowledge and access to screening

Diagnóstico precoz de cáncer de mama: relevamiento de una muestra poblacional sobre el conocimiento del tema y el acceso al cribado

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Submitted: 15-09-2025 | Revised: 22-11-2025 | Accepted: 28-12-2025 | Published: 30-12-2025

ABSTRACT

Background: Argentina has one of the highest incidences of breast cancer in Latin America, ranking third in the region. The prevalence is 675.9 cases per 100,000 women, and an increase of more than 40% in cases is projected by 2050 (1), highlighting the importance of early detection and equitable access to healthcare services. Mammography is the most extensively studied screening method and, when combined with other techniques, can improve early diagnosis and consequently reduce mortality rates. However, public knowledge about screening practices remains limited, considering sociocultural and psychological barriers such as fear and embarrassment. Material and methods: An online survey was conducted targeting the general population, using multiple-choice questions to assess knowledge about breast cancer and access to screening. Results: The surveyed population demonstrated good knowledge about breast cancer and its detection methods (89%). Conclusion: The study aims to identify gaps in knowledge and access to screening—key information to strengthen prevention and health education strategies.

Keywords: Breast cancer; Early diagnosis; Mammography screening; Knowledge; Healthcare access.

RESUMEN

Introducción: Argentina presenta una de las mayores incidencias de cáncer de mama en América Latina, ocupando el tercer lugar en casos en la región. La prevalencia es de 675,9 casos por 100.000 mujeres y se proyecta además un aumento de más del 40% en los casos para 2050 (1), lo que evidencia la importancia de la detección temprana y del acceso equitativo a los servicios de salud. La mamografía es el método de rastreo más estudiado y puede, junto a otros métodos mejorar el diagnóstico temprano y, por ende, disminuir la tasa de mortalidad. No obstante, el conocimiento de la población sobre las prácticas de screening sigue siendo escaso, tomando en consideración barreras socioculturales y psicológicas como el miedo y la vergüenza. Material y métodos: Se realizó una encuesta online dirigida a población general, con preguntas múltiple choice acerca del conocimiento sobre cáncer de mama y acceso al screening. Resultados: La población encuestada muestra buen conocimiento sobre el cáncer de mama y sus métodos de detección (89%). Conclusión: Se espera identificar brechas en el conocimiento y en el acceso al screening, información fundamental para fortalecer estrategias de prevención y educación en salud.

Palabras clave: Cáncer de mama; Diagnóstico precoz; Tamizaje mamográfico; Conocimiento; Acceso a la salud.

INTRODUCTION

Breast cancer is the most common cancer among women in Argentina; recent academic studies indicate approximately 21,631 new cases annually and more than 5,000 deaths attributable to this disease (2022) (2). Timely screening, especially through mammography, is the primary strategy validated by medical science for early detection, enabling less aggressive treatments, a better quality of life, and higher survival rates. (3).

Despite the availability of national programs and equipment, difficulties persist in adherence to screening. Factors such as the lack of health insurance, socioeconomic status, the shortage of primary care specialists, and geographic inequalities influence access to medical and diagnostic resources. Likewise, shame, personal beliefs, and sociocultural barriers limit participation in screening strategies, demonstrating that the problem is not only structural but also cultural and emotional (4).

In this context, the present study aims to assess how much the general population knows about breast cancer and what difficulties they face when accessing screening services.

MATERIALS AND METHODS

An observational, descriptive study was conducted with 141 respondents to assess the level of general knowledge about breast cancer and the use of screening strategies among the adult population in Argentina. An anonymous survey was administered via a Google Form, with multiple-choice options, targeting men and women aged 18 or older living in Argentina.

Statistical analysis: The data were analyzed using descriptive statistics (frequencies, percentages, and measures of central tendency).

RESULTS

Of the 141 respondents, 2.1% were under 20 years of age, 20.6% were between 20 and 29 years of age, 29.8% were between 30 and 39 years of age, 20.6% were between 40 and 49 years of age, 14.2% were between 50 and 59 years of age, and 12.8% 60 years of age or older; among the respondents, 84.4% are women and 14.9% are men.

Regarding screening methods, mammography is the most commonly cited (97%), followed by breast self-examination (84%), ultrasound (77.3%), and clinical examination by a healthcare professional (70.2%); magnetic resonance imaging (MRI) is mentioned less frequently (43.3%)

Regarding prevention, 76.6% believe that screenings should be performed once a year, 9.2% every 6 months, and the remainder is split between every 2 years (8.5%) and "I don't know" (5.7%).

Regarding the age at which screenings should begin, the results vary widely: 33.3% at age 40 or older, 28.4% between ages 30–39, 24.1% before age 30, 9.9% "don't know," and 4.3% at age 50 or older.

The use of health screening services is also high: 73% reported having a medical checkup at least once a year, 17% every 3–5 years, and 9.9% rarely or never. Overall, 49.6% had ever had a mammogram, 29.1% had never had one, and 21.3% responded "not applicable (due to age or gender)," as expected in a sample mixed by sex and age.

Regarding educational level, the majority of respondents reported having a college degree (69.5%), while 25.5% had completed high school, suggesting a sample with a predominance of medium- to high-level education.

Regarding health coverage, 38.3% reported having public health insurance, 26.2% had private health insurance, and 35.5% stated they had no health coverage, a relevant finding for access to preventive care.

Regarding place of residence, 75.2% of participants lived in the Autonomous City of Buenos Aires (CABA), while 24.8% resided in the Province of Buenos Aires, reflecting a predominance of urban population.

Nearly all respondents (99.3%) reported having heard of breast cancer, and 92.2% indicated knowing of a method for its early detection.

Among those who reported not undergoing regular medical checkups, the main reasons identified were lack of time (31.3%), financial difficulties (21.3%), lack of a doctor's recommendation (16.3%), fear of the results (6.3%), and lack of information (1.3%). In addition, 42.5% grouped their response under the category "other reason," which could include personal or contextual reasons not specified in the questionnaire. Taken together, these results show that, despite the high level of general knowledge about breast cancer and the importance of early diagnosis, practical and structural barriers persist—primarily related to available time and economic conditions—that limit sustained adherence to recommended preventive screenings.

DISCUSSION

The results of this study show that 92.2% of respondents are aware of breast cancer and its early detection methods, consistent with previous research. These findings are consistent with reports from the National Cancer Institute and the Pan American Health Organization, which indicate that Argentina has a solid foundation of knowledge regarding breast cancer but inconsistent adherence to regular mammography screenings (6). According to the national Ministry of Health, these screenings should be performed every two years starting at age 50 (3). At the same time, the Argentine Society of Mastology recommends annual checkups starting at age 40 for asymptomatic women with normal clinical findings and no history of the disease (6).

A limitation of the study was that most respondents were urban residents with higher education (69.5% with higher education; 75.2% in the City of Buenos Aires) and high levels of knowledge and service utilization; therefore, caution is warranted when extrapolating the results to rural populations or those with lower educational levels. Although the proportion without health insurance (35.5%) has a high perception of access and relies on urban public services, they view this access as limited by indirect costs such as transportation, waiting times, and lost work hours—reported as an economic difficulty (21.3%)—which may discourage them from undergoing screening. According to data from the National Cancer Observatory and the National Cancer Control Plan, women without health insurance or with low incomes have significantly lower rates of mammogram utilization (3), another significant finding also observed in the survey.

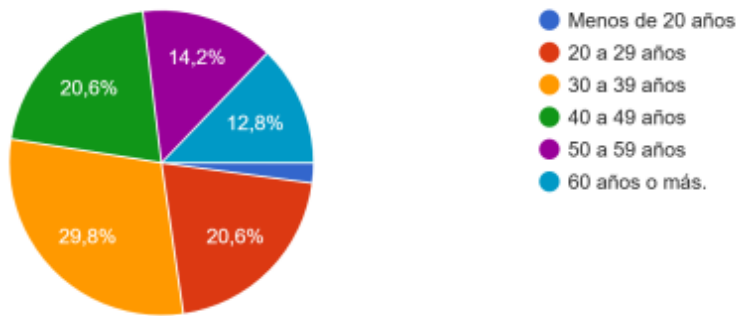
Regarding male respondents (14.9% of the sample), although breast cancer in men is rare, promoting basic awareness messages is relevant due to their value for the community and support networks.

Although 76.6% of respondents believe that preventive screenings should be performed once a year, some national and international guidelines suggest biennial intervals for most of the target population (7). These findings align with previous studies conducted across Argentina and Latin America, which describe persistent gaps between the level of information and the actual practice of screening.

The following statistical graphs are shown below:

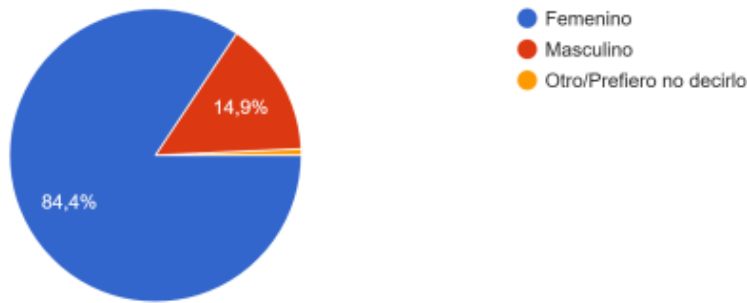
Edad

141 respuestas



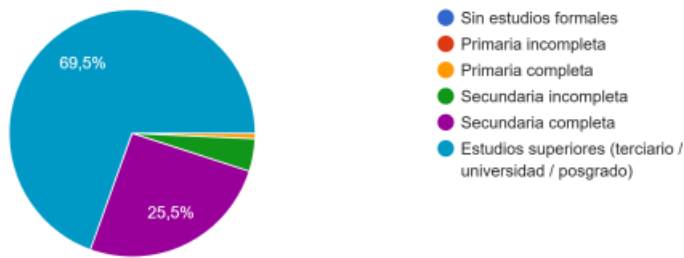
Sexo

141 respuestas



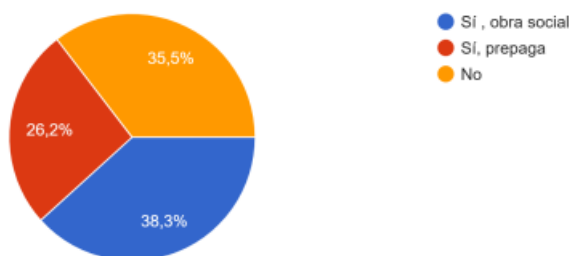
Nivel de estudios alcanzado

141 respuestas



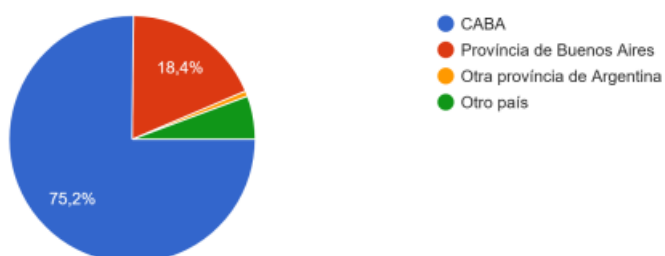
¿tiene alguna cobertura en salud? Si tiene ¿ obra social o prepaga?

141 respuestas



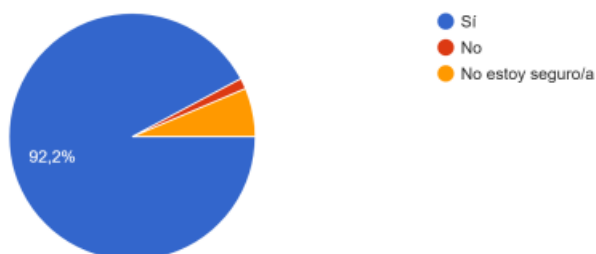
¿Dónde vive actualmente?

141 respuestas



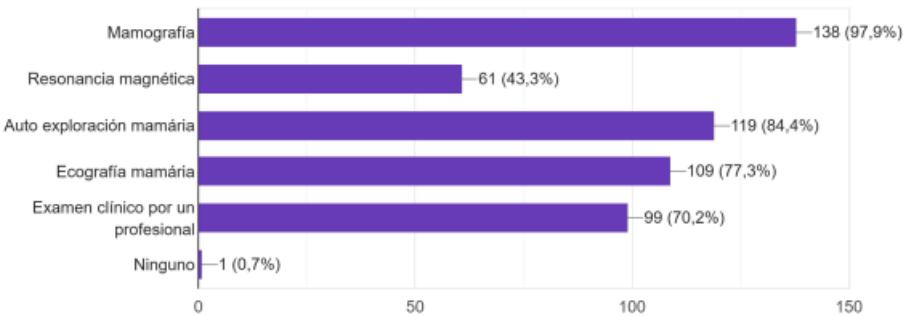
¿Conoce algún método para detectar precozmente el cáncer de mama?

141 respuestas



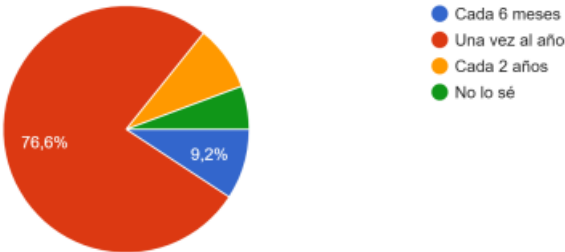
¿Cuál de los siguientes métodos conoce? (Marcar todos los que correspondan)

141 respuestas



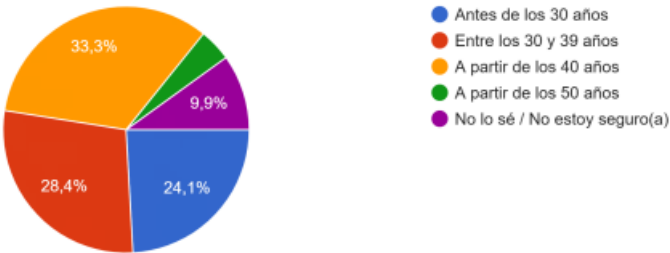
¿Con qué frecuencia se recomienda realizar estudios para prevenir el cáncer de mama?

141 respuestas



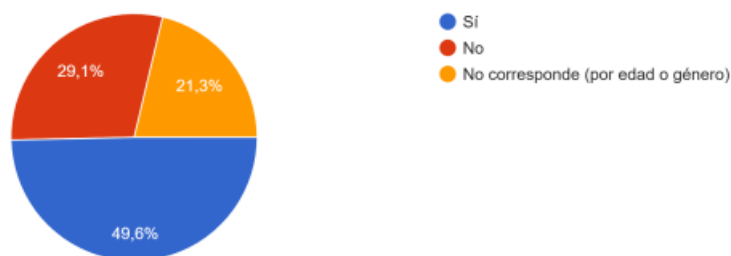
¿A partir de qué edad se recomienda comenzar los estudios de control para la detección precoz del cáncer de mama? correcto

141 respuestas



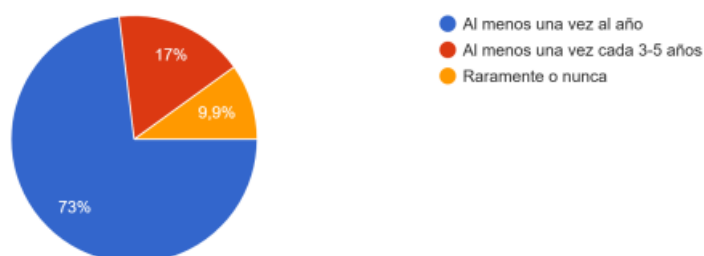
¿Alguna vez se ha hecho una mamografía?

141 respuestas



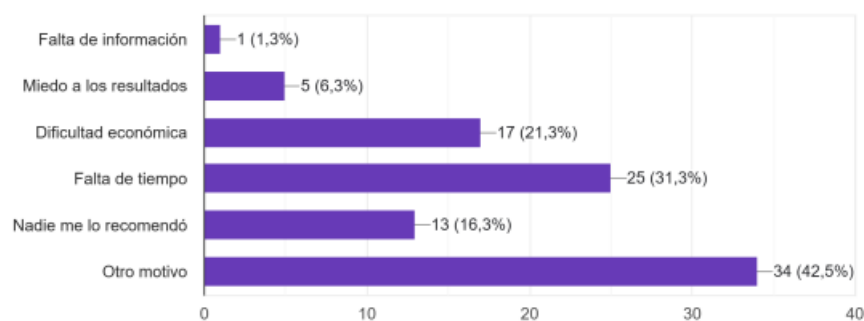
¿Con qué frecuencia realiza controles médicos preventivos?

141 respuestas

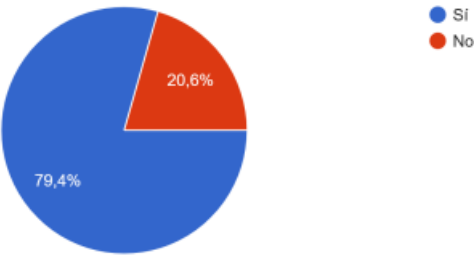


Si no realiza controles médicos regularmente, ¿por qué? (Marcar todos los que correspondan)

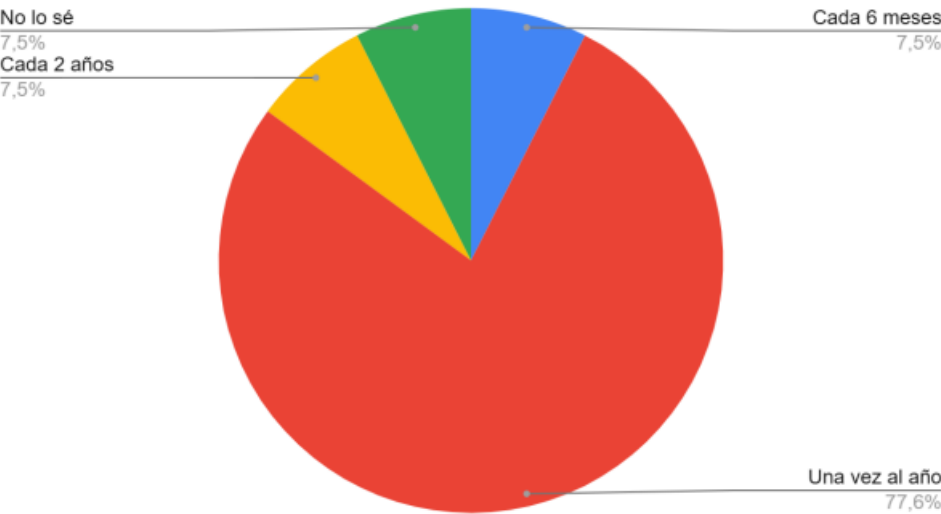
80 respuestas



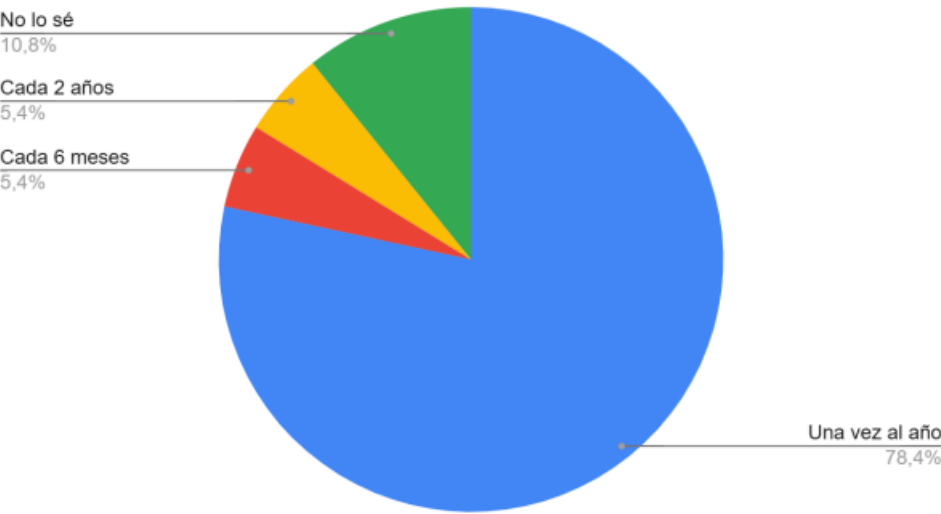
¿Puede acceder fácilmente a servicios de salud para controles médicos?
141 respuestas



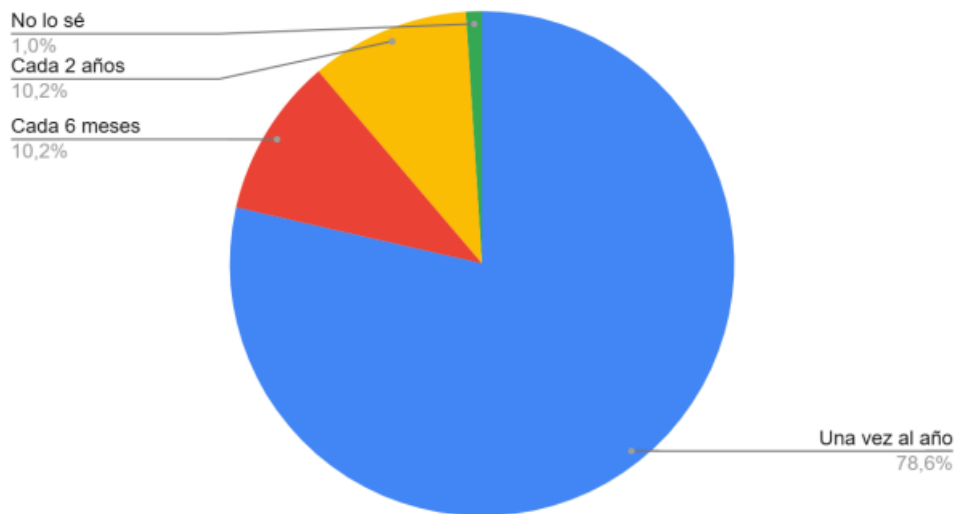
40-60 años. Frecuencia de control



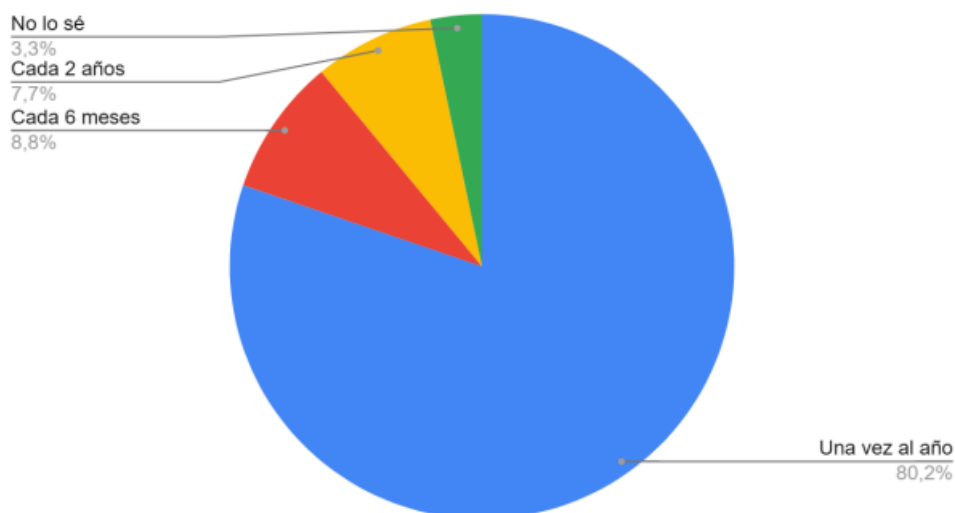
Frecuencia de control (nivel secundario completa)



Frecuencia de control (nivel de estudio superior)



Frecuencia de control (Prepaga / Obra social)



CONCLUSION

The results of this study show that participants possess a solid foundation of general knowledge about breast cancer, particularly regarding the importance of mammography as a method of early detection. However, it is observed that a proportion of women over 40 years of age—the age group for which regular screening is recommended—have never had a mammogram (10%), which highlights a disconnect between acquired knowledge and actual preventive practice.

This gap can be attributed to both structural factors—such as difficulties accessing the healthcare system or financial constraints—and personal factors, including fear of the results, lack of time, or lack of interest. These findings underscore the need to strengthen health education campaigns and improve access to diagnostic services, prioritizing the most socioeconomically vulnerable groups.

Early detection of breast cancer remains a fundamental tool for increasing survival and improving women's quality of life. Mammography, in particular, is the only imaging modality to have consistently demonstrated a reduction in mortality of 20% to 30% when systematically implemented within population-based screening programs. However, the incidence of the disease increases with age, with the majority of diagnoses occurring in women aged 50 and older, underscoring the importance of promoting equitable and continuous access to preventive screenings throughout a woman's adult life.

REFERENCES

1. Cáncer de mama y cuello uterino en Argentina: prevención y detección [Internet]. MSD | Argentina. [citado 19 de octubre de 2025]. Disponible en: <https://www.corporativo.msd.com.ar/news/argentina-entre-los-paises-con-mas-casos-de-cancer-de-mama-y-cuello-de-utero-de-america-latina/>
2. Chang Y-W, Ryu JK, An JK, Choi N, Park YM, Ko KH, et al. Artificial intelligence for breast cancer screening in mammography (AI-STREAM): preliminary analysis of a prospective multicenter cohort study. *Nat Commun* 2025;16:2248. <https://doi.org/10.1038/s41467-025-57469-3>.
3. Freeman K, Geppert J, Stinton C, Todkill D, Johnson S, Clarke A, et al. Use of artificial intelligence for image analysis in breast cancer screening programmes: systematic review of test accuracy. *BMJ* 2021;374:n1872. <https://doi.org/10.1136/bmj.n1872>.
4. Gao Y, Heller SL. Breast Cancer Screening in Men. *J Breast Imaging* 2023;5:104–11. <https://doi.org/10.1093/jbi/wbac095>.
5. Gordon PB. The Impact of Dense Breasts on the Stage of Breast Cancer at Diagnosis: A Review and Options for Supplemental Screening. *Curr Oncol* 2022;29:3595–636. <https://doi.org/10.3390/currncol29050291>.
6. Hernström V, Josefsson V, Sartor H, Schmidt D, Larsson A-M, Hofvind S, et al. Screening performance and characteristics of breast cancer detected in the Mammography Screening with Artificial Intelligence trial (MASAI): a randomised, controlled, parallel-group, non-inferiority, single-blinded, screening accuracy study. *Lancet Digit Health* 2025;7:e175–83. [https://doi.org/10.1016/S2589-7500\(24\)00267-X](https://doi.org/10.1016/S2589-7500(24)00267-X).
7. Hill H, Roadevin C, Duffy S, Mandrik O, Brentnall A. Cost-Effectiveness of AI for Risk-Stratified Breast Cancer Screening. *JAMA Netw Open* 2024;7:e2431715. <https://doi.org/10.1001/jamanetworkopen.2024.31715>.
8. Kuhl CK. What the Future Holds for the Screening, Diagnosis, and Treatment of Breast Cancer. *Radiology* 2023;306:e223338. <https://doi.org/10.1148/radiol.223338>.
9. Li M, Wang H, Qu N, Piao H, Zhu B. Breast cancer screening and early diagnosis in China: a systematic review and meta-analysis on 10.72 million women. *BMC Womens Health* 2024;24:97. <https://doi.org/10.1186/s12905-024-02924-4>.
10. Lui CY, Fong JCY, Wong MCS. Breast cancer screening-towards a broader coverage of the general population. *Hong Kong Med J* 2022;28:100–2. <https://doi.org/10.12809/hkmj215127>.
11. Ma Z, He W, Zhang Y, Mao X, Tapia J, Hall P, et al. First mammography screening participation and breast cancer incidence and mortality in the subsequent 25 years: population based cohort study. *BMJ* 2025;390:e085029. <https://doi.org/10.1136/bmj-2025-085029>.
12. Mann RM, Athanasiou A, Baltzer PAT, Camps-Herrero J, Clauser P, Fallenberg EM, et al. Breast cancer screening in women with extremely dense breasts recommendations of the European Society of Breast Imaging (EUSOBI). *Eur Radiol* 2022;32:4036–45. <https://doi.org/10.1007/s00330-022-08617-6>.
13. Marcondes FO, Armstrong K. Reducing the Burden of Overdiagnosis in Breast Cancer Screening and Beyond. *Ann Intern Med* 2022;175:598–9. <https://doi.org/10.7326/M22-0483>.
14. Pace LE, Keating NL. New Recommendations for Breast Cancer Screening-In Pursuit of Health Equity. *JAMA Netw Open* 2024;7:e2411638. <https://doi.org/10.1001/jamanetworkopen.2024.11638>.
15. Salim M, Liu Y, Sorkhei M, Ntola D, Foukakis T, Fredriksson I, et al. AI-based selection of individuals for supplemental MRI in population-based breast cancer screening: the randomized ScreenTrustMRI trial. *Nat Med* 2024;30:2623–30. <https://doi.org/10.1038/s41591-024-03093-5>.
16. Shi J, Li J, Gao Y, Chen W, Zhao L, Li N, et al. The screening value of mammography for breast cancer: an overview of 28 systematic reviews with evidence mapping. *J Cancer Res Clin Oncol* 2025;151:102. <https://doi.org/10.1007/s00432-025-06122-z>.
17. Solla Negrao EM, Cabello C, Conz L, Mauad EC, Zeferino LC, Vale DB. The impact of the COVID-19 pandemic on breast cancer screening and diagnosis in a Brazilian metropolitan area. *J Med Screen* 2023;30:42–6. <https://doi.org/10.1177/09691413221122055>.
18. Spear G, Lee K, DePersia A, Lienhoop T, Saha P. Updates in Breast Cancer Screening and Diagnosis. *Curr Treat Options Oncol* 2024;25:1451–60. <https://doi.org/10.1007/s11864-024-01271-8>.
19. US Preventive Services Task Force. Screening for Breast Cancer. *JAMA* 2024;331:1973–4. <https://doi.org/10.1001/jama.2024.5535>.
20. Yaffe MJ, Mainprize JG. Overdetection of Breast Cancer. *Curr Oncol* 2022;29:3894–910. <https://doi.org/10.3390/currncol29060311>.
21. Zhang Z, Rao R, Omer A, Mango VL, Wilson-Gardner P, Ojutiku O. Breast cancer diagnosis in Inner-City African American and Hispanic women: The importance of early screening. *Clin Imaging* 2022;92:52–6. <https://doi.org/10.1016/j.clinimag.2022.09.006>.
22. 900-world-fact-sheet.pdf [Internet]. [citado 25 de octubre de 2025]. Disponible en: <https://gco.iarc.who.int/media/globocan/factsheets/populations/900-world-fact-sheet.pdf>
23. Argentina.gob.ar [Internet]. [citado 19 de octubre de 2025]. Argentina.gob.ar. Disponible en: <https://www.argentina.gob.ar/>
24. Aliu AE, Kerrison RS, Marcu A. A Systematic Review of Barriers to Breast Cancer Screening, and of Interventions Designed to Increase Participation, Among Women of Black African and Black Caribbean Descent in the UK. *Psychooncology*. febrero de 2025;34(2):e70093.
25. Mamografía [Internet]. [citado 25 de octubre de 2025]. Disponible en: <https://www.samas.org.ar/index.php/cancer-de-mama/mamografia>

26. ACS Breast Cancer Screening Guidelines | American Cancer Society [Internet]. [citado 25 de octubre de 2025]. Disponible en: <https://www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/american-cancer-society-recommendations-for-the-early-detection-of-breast-cancer.html>

FUNDING

No financing

CONFLICT OF INTEREST

None

AUTHORSHIP CONTRIBUTIONS

Drafting – original draft: Liliana Mendonça de Souza Filha, María Guillermina Améstica.
Writing–review and editing: Liliana Mendonça de Souza Filha, María Guillermina Améstica.