

# Understanding the Patient “Doorway” to Mammography

## A look into the sources of early breast cancer awareness

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### INTRODUCTION

The benefits of mammography for women’s breast health are well known. We often hear the phrase, “Early detection is the best defense against breast cancer,” and timely screening can be key to successful treatments and outcomes. We know from randomized controlled trials and countless studies that mammography screening can help reduce deaths from breast cancer among women at average risk of breast cancer, with the strongest benefit for women aged 50 to 69 years.<sup>1,2</sup>

But before a woman can comply with the recommendations for annual mammograms, she first needs to be aware of the importance of breast care and early detection.

So, where and when does this awareness come about? Despite the wealth of studies on how mammography helps protect women in later life, there is surprisingly little research into how women first learn of breast cancer and mammography.

To address that gap, we undertook a groundbreaking quantitative study to better understand who first informs women about breast cancer and mammography—and *when*.<sup>3</sup> From the answers to these questions, we can learn how to increase both awareness and compliance.

We also anticipate that the study results might allow extrapolation of how women’s introduction to breast cancer risks influence their perceptions and behaviors regarding mammography screening as they get older.

### METHODOLOGY AND ANALYSIS

From November 11–19, 2021, the research team conducted a 20-minute online survey of 913 women in the United States. Three groups of approximately 300 women each were set for three age spans: 25 to 34 years old (Y), 35 to 44 years old (M), and 45 to 54 years old (O).

Within each age span, there were:

- Approximately 100 women with a family history of breast cancer, defined as having a biological mother, sister, aunt, cousin, or grandmother diagnosed with breast cancer
- Approximately 200 women with no family history of breast cancer, defined as not having a close family member diagnosed with breast cancer

The online survey addressed these primary areas of inquiry into the first steps in women’s awareness of breast health:

- Age at which the respondent became aware of breast cancer and the source of her awareness
- Age at which the respondent became aware of mammography and the source of her awareness
- Age at which the respondent would have preferred to be informed about mammography and her preferred source of information

### KEY FINDINGS

- Mothers are the most preferred (49%) and most compelling source of breast cancer and mammography compliance.
- Physicians, as well as mothers, are key to women’s early awareness of breast cancer and mammography.
- Awareness starts at an early age, but many women wish they had known about the benefits of mammography screening far earlier.
- In general, mammography awareness is high—93% of women are aware. 86% of respondents who have never received a mammogram, are aware of mammograms. Of all survey respondents, 50% were getting screened, but this percentage also includes women younger than 40 years. (For context, the Centers for Disease Control and Prevention reported that about 66% of women aged 40 years and over had a mammogram within the past 2 years.<sup>4</sup>)
- Increasing mammography screening may require only simple steps, such as educating mothers about their important role in their daughters’ breast health. When healthcare providers do all they can to empower, encourage, and remind their patients to have “the talk” with their daughters, it can be a difference maker for both groups.

## METHODOLOGY AND ANALYSIS (cont.)

The survey questions also covered several relevant aspects of women’s breast health, including perception of breast cancer risk, family history of breast cancer, compliance with mammography recommendations, and respondent demographics.

Analysis of the survey response categories focused on the total number of women and the number in each of the three age spans: 25-34 years (Y), 35-44 years (M), and 45-54 years (O). The age spans were further categorized as Family history (F) and No family history (N).

Significant differences were tested at the 90% level of confidence where appropriate. An alphabetic character (Y, M, O, F, N) was used to designate a group as significantly higher than another group for a particular metric.

Tiering analysis was performed for long lists. The percentages of each list component were rank ordered, and all percentages were tested versus the highest score. Those at parity to the highest score were in Tier 1. The remaining percentages were then tested against the top score in Tier 2. Those at parity to that score were in Tier 2. The same procedure was followed for each tier. Components within a tier therefore were considered at parity to each other and separate tiers were considered to represent significant differences.

## SURVEY RESULTS

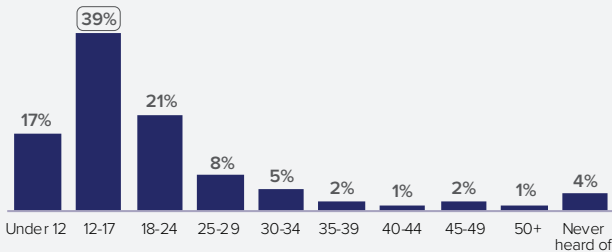
This summary focuses on the significant findings from the survey, specifically regarding at what age the respondents first learned of breast cancer and mammography, and at what age they would have rather been made aware and from which source.

Enabled by the large sample size, results reveal significant differences in responses according to demographic cut, specifically among race. We will not address those findings in this paper but hope to do so in future literature.

FIGURE 1

### Age first became aware of breast cancer

Mean age first became aware of breast cancer is 19 yrs.



Trend is moving to learning of breast cancer significantly younger

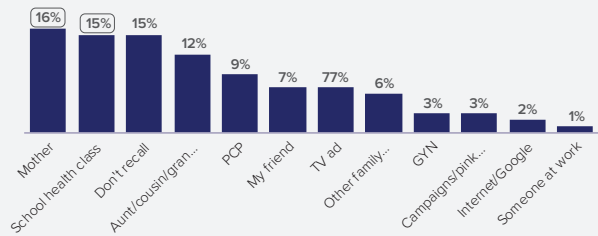
Age	(Y) 25-34 (N=302) %	(M) 35-44 (N=305) %	(O) 45-54 (N=306) %
11 or younger	22 <sup>o</sup>	18 <sup>o</sup>	9
12-17	42 <sup>o</sup>	42 <sup>o</sup>	33
18-24	18	19	26 <sup>YM</sup>
25-29	8	7	9
30-34	5	3	6
35 or older	-	7 <sup>Y</sup>	15 <sup>YM</sup>
Mean age	17	18 <sup>Y</sup>	23 <sup>YM</sup>
Never heard of breast cancer	5	4	2

Q. 2 Approximately how old were you when you first became aware of breast cancer?

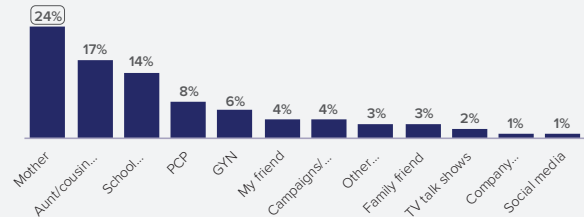
FIGURE 2

### “Mother” and “school health class” primary unaided original sources of breast cancer awareness

Unaided source first became aware of Breast Cancer



Aided Source First Became Aware of Breast Cancer

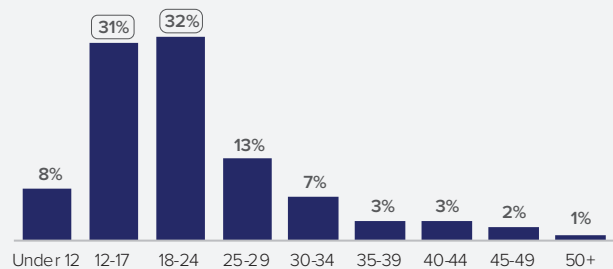


Q. 3a To the best of your recollection, from which one source did you first become aware of breast cancer?

FIGURE 3

### Age first became aware of mammograms

Mean age first became aware of mammograms is 22 yrs.



Q. 9 Approximately how older were you when you first became aware or mammograms or mammography?

## SURVEY RESULTS (cont.)

### Age at which the respondent became aware of breast cancer and the source of her awareness

In their survey responses, the greatest number of women named the age range 12-17 years (39%) as the age they first became aware of breast cancer (Figure 1). The mean age for first awareness was 19 years, with a trend toward learning of breast cancer significantly younger.

In unaided responses, the survey respondents listed mothers (16%) and school health class (15%) as the top two sources of breast cancer awareness, with “don’t recall” and relatives also common responses (Figure 2). In aided responses, mothers were listed more often (24%) than in unaided responses, with relatives (17%) more common than school health class (14%).

### Age at which the respondent first became aware of mammography and the source of her awareness

Survey respondents named 12-17 years (31%) and 18-24 years (32%) as the two most common age ranges for when they first became aware of mammography (Figure 3). The mean age for first awareness was 22 years.

### Age at which the respondent would have preferred to be informed about mammography and preferred source of information

The mean age for respondents’ preferred awareness was 22 years, but more than half of the women over age 25 years wished they had learned about mammography earlier than they did (Figure 4).

Survey respondents listed 12-17 years (30%) and 18-24 years (31%) as the two most common age ranges for when they would have preferred to become aware of mammography.

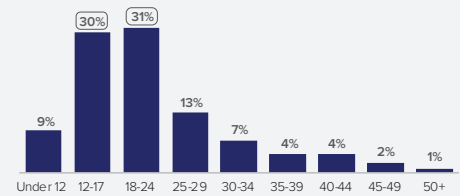
Respondents said they would have preferred being aware at 12-17 years because that is when their bodies underwent the changes of puberty. Those who chose 18-24 years said they felt that is when they were “coming of age” and taking responsibility for their own health.

When asked about their preferred source of mammography information, the women overwhelmingly named their mothers (49%) before healthcare practitioners (21% combined), school health class (7%), and relatives (6%). (Figure 5)

FIGURE 4

### Mean age wish first became aware of mammograms is 22 yrs.

Age at Wish First Heard about Mammograms



Most wish they became aware by age 24; especially 25-34 yr. olds

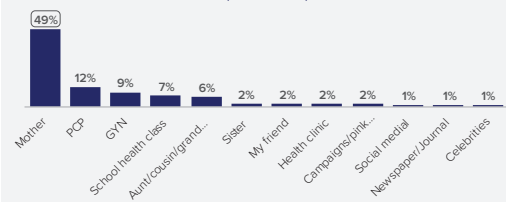
Age	(Y) 25-34 (N=302) %	(M) 35-44 (N=305) %	(O) 45-54 (N=306) %
11 or younger	13 <sup>MO</sup>	9 <sup>O</sup>	4
12-17	38 <sup>MO</sup>	31 <sup>O</sup>	21
18-24	27	34 <sup>Y</sup>	33 <sup>Y</sup>
25-29	12	10	15 <sup>M</sup>
30-34	7	6	10 <sup>M</sup>
35-39	2	5 <sup>Y</sup>	5 <sup>Y</sup>
40-44	-	5 <sup>Y</sup>	6 <sup>Y</sup>
45-49	-	-	4 <sup>YM</sup>
50 or older	1	-	2
Mean age	19	21 <sup>Y</sup>	25 <sup>YM</sup>

Q. 15a Regardless if or when you first heard about mammograms, at what age do you wish you first became aware or informed of mammograms or mammography? Breast cancer?

FIGURE 5

### Mother: overwhelming preferred source to hear about mammography

Aided Source Wish First Heard / Read About Mammography



Q. 15c And from which source do you wish you first heard/read about getting mammograms or mammography?

## DISCUSSION

Analysis of the survey responses demonstrated some interesting findings, trends, and implications.

### 1. Mothers are the most preferred (49%) and most compelling source of awareness of breast cancer and mammography.

The most conclusive finding is that mothers play a very important role in their daughters' awareness of breast cancer risk and mammography. In fact, the research points to the fact that a mother's influence may be even more powerful than that of healthcare providers.

Given that mothers have an outsized influence on their daughters, it follows that the information they pass on should be accurate. Healthcare providers should be sure both mothers and daughters receive up-to-date education about the risk factors for breast cancer, especially those that are controllable, and the benefits of mammography.

### 2. PCPs and GYNs are key to women's awareness of breast cancer and mammography.

In each age group, respondents reported that mothers and physicians would most compel them to get a mammogram.

As expected, women in the older age group (45-54 years) were more aware of breast cancer risk and of the importance of mammography, although not one of the 900+ respondents correctly identified all risk factors.

What was less expected was that 35% and 38% of the respondents said they did not get information about breast cancer at *any age* from their primary care physicians or gynecologists, respectively. It is important to note, we speculate many respondents may have already "first heard" of breast cancer or mammography from another source and may have introduced the topic in consultation with their PCPs or GYNs. This finding again points to the need for physicians to make it their responsibility to educate women of all ages about breast cancer risk and the preventive role of mammography.

### 3. Awareness of breast cancer and mammography starts at an early age, but many women wish they had known about the benefits of mammography screening earlier.

Answers to survey questions on why respondents wished they had learned about mammography earlier—between 12 and 17 years old—included:

"I could have started personal breast exams earlier and become better at knowing what to look for."

"I would have started getting mammograms sooner or learned how to suspect problems in my breasts at an earlier age."

"Those are the ages you learn about being a woman; having a monthly period and breast development."

"I think it is important for girls to become aware of their health needs as they go through adolescence and puberty."

It is also interesting to note that more than one third of the respondents said they did not receive breast cancer information from their primary care physicians or gynecologists at any age.

### 4. In general, awareness of breast cancer and mammography is high.

Approximately 93% of respondents reported they were aware of mammograms, and 50% of total respondents of screening age were currently getting mammograms. Most women (81%) reported doing breast self-examinations, and incidence of mammograms and self-exams increased with age.

More than half of the women over 25 wished they had known at an earlier age about mammography. Concurrently, the survey showed that the average age of first awareness is dropping. This implies that information about mammography is becoming more widespread, as the younger age group listed more sources\* of mammography awareness than the older cohort.

More respondents knew about the need for annual mammograms than the correct age to start screening. Nearly half of the women surveyed who said they were unaware of mammograms, prior to the study, reported that they would go for screenings after reading a short description for the term "mammography." This indicates that a slight nudge, such as a simple definition of the procedure, could have a meaningful impact on screening compliance.

Interestingly, a family history of breast cancer did not lower the age of first awareness of mammograms in any age group, but it did increase the accuracy of responses about recommended frequency.

Accurate risk awareness was very weak. Almost two thirds of the respondents identified family history as the primary risk factor for breast cancer and were less aware of age and dense breast tissue as factors. Women with a family history of breast cancer also tended to feel "extremely/very" worried about getting breast cancer themselves, whereas women with no family history tended to be "not too/not at all" worried. It appears the respondents falsely attribute their level of concern to just one of many risk factors. After all, most women who get breast cancer have no family history.

It is not a stretch to extrapolate from these responses that the information passed on within families would affect women's perceptions of breast cancer risk and their compliance with recommended cancer screening.

### 5. Compliance with mammography screening can improve with better communication between mothers and daughters, even at a young age.

Inspiring more women to go for annual mammograms may be as simple as educating mothers about their important role in their daughters' breast health—and encouraging daughters to take an active role in reminding their mothers to be screened.

Several of the survey responses illustrate how vital that communication can be. When asked why she would have liked to know about mammography earlier, one respondent wrote,

**"I would have talked my mother into getting mammograms. If they found the cancer in an early stage, she would probably be alive today."**

## CONCLUSIONS

Women face many decisions throughout their lives regarding their health care, and what they perceive as most important determines the actions they take. This is certainly true when it comes to breast cancer screening. Although each woman becomes aware of her breast health needs as an individual, the results of this study illustrate some common threads in the experience.

A major insight from this survey is that mothers are daughters' doorway into the breast care journey. Daughters overwhelmingly prefer to talk to their mothers about breast health and mammography. Once they are aware of screening benefits, they are likely to remind their mothers to go for mammograms as well. Knowing this, it's especially important for healthcare providers to educate mothers with daughters on how to have "the talk" about breast cancer, risk factors, and breast screening.

A more surprising finding is that more than one third of respondents said they do not recall receiving breast cancer information from either their primary care physician or gynecologist *at any age*. This statistic should motivate

providers to step up their education efforts to improve the 67% compliance rate we see today. Slight nudges like sharing a simple definition of mammography or sharing risk factor information beyond family history could be all it takes. That in-office conversation can be a woman's first step toward her first mammogram—and keep her coming back for annual screening throughout her life.

This study also points out that personal risk and the risk factors of breast cancer are not well understood. Many respondents did not recognize the importance of risk factors other than family history, highlighting another area that requires better education.

By sharing their experiences, the respondents to this survey have given us deeper insight into their perceptions of both awareness and compliance along the breast care continuum. We hope that this better understanding of the existing "doorways" to breast cancer and mammography awareness can lead to a better healthcare journey for all women in the future.

“The earlier that women can be educated, the better it is for them. They can be prepared.” –18-24

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\*Sources listed: Mother; Sister; Aunt, cousin or grandmother; Other extended family member; My friend; Family friend/neighbor; Someone at work; Primary care doctor; Health clinic; Gynecologist; Health insurance company; Health class in school; Religious or community group; Company/associations which are experts in breast health; Social media (please specify); Online acquaintance; Newspaper, journal or book (please specify); Breast cancer awareness campaigns/pink ribbons; Celebrities/celebrities featured in ads; Workplace health initiatives; Saw mobile mammography van; TV talk shows (please specify); and Other (please specify).

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