INSTITUTE OF MEDICINE AND
NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES

FACT SHEET • JUNE 2004

Understanding Breast Cancer Risk: What Are Your Chances Of Developing Breast Cancer?

If you are a woman, you are at some risk for breast cancer. The degree of risk increases for all women over a lifetime, especially after age 50. Even then, some women remain at very low risk, while others are at great risk. Knowledge of your own risks can help you make important medical decisions, such as when and how often you should be screened for breast cancer. However, more research is needed to better predict future risk in women and to use that knowledge to develop individualized screening and detection strategies for women.

Most guidelines in the United States now recommend mammograms every one to two years for every woman over age 40, but a more individualized approach to screening could be developed if each woman knew her own risk – whether high, normal or low. For example, most women gain no medical benefit from screening before age 40. Nor do most women benefit from twice-yearly screening or more intensive screening using supplemental imaging technologies. However, a small minority of women in both groups might benefit, if they could be identified. Conversely, some women over 50 will gain no benefit. The challenge will be to find techniques that permit such classification. This will demand a better and more precise understanding of risk factors.

Women fear breast cancer more than any other disease. Generally, women tend to overestimate their risk for breast cancer. The statistic that one in eight women who live to be 85 will develop some form of breast cancer in her lifetime is alarming. But it's important to recognize the influence of age on risk. Fewer than 5 percent of invasive breast cancers occur in women under age 40, whereas three-quarters are in women over age 50.

TABLE 1. Age Specific Probablilities of Deleoping Breast Cancer

If current age is:	Then the probability of developing breast cancer in the next 10 years is:	Or, 1 in:
20	0.05%	2,152
30	0.40%	251
40	1.45%	69
50	2.78%	36
60	3.81%	26
70	4.31%	23

SOURCE: American Cancer Society. Breast Cancer Facts and Figures 2003-2004. Atlanta, Georgia.

RISK FACTORS: KNOWN AND UNKNOWN

To date, the most significant risk factors are age (table 1) and gender. Screening guidelines take these two risk factors into account, but they could be improved. Earlier attempts to base screening strategies on factors other than gender and age, such as family history or reproductive factors have not been successful, largely because the relative risks of those factors are too low.

Creation of individual screening strategies that incorporate additional risk factors will improve early detection of breast cancer. Better risk assessment is an essential first step in accomplishing that goal.

MISPERCEPTION OF RISK

More than three-quarters of women in one large survey recognized family history of breast cancer as a risk factor for developing breast cancer themselves. Family history does increase risk, but not as much as many women believe. Eight out of nine women who develop breast cancer have no family history among their first-degree relatives (mother, daughter or sister). The amount of increased risk depends on how close a relation the affected relative is, the age at which they developed breast cancer, and the number of relatives affected.

For example, the relative risk of developing breast cancer for a woman whose mother had breast cancer after age 50 is estimated to be 1.8. If that woman is 40 years old, her risk of developing breast cancer within 10 years would be about 1.5 percent, on average. Incorporating family history, her 10-year breast cancer risk increases to 2.7 percent – higher than average, but still relatively low.

More worrying, however, is the fact that fewer than 1 out of 8 women surveyed correctly identified old age as a risk factor for breast cancer. According to several studies, older women are more likely to underestimate their risk than younger women, while younger women tend to overestimate their risk. In general, women's perception of risk does not reflect what the scientific data clearly show: that risk of breast cancer increases significantly and steadily with increasing age, especially after age 50.

What is needed are better tools for communicating risk – for health care providers, patients and the general public, including the news media.

THE BOTTOM LINE

Where does all this leave women right now? Women can continue to seek out and develop an open and trusting relationship with their physicians. They should inquire about their risk of developing breast cancer, and, with their physician, discuss the pros and cons of the screening options available to them. It is important that women continue to follow consensus guidelines for the minimum recommended use of mammography screening – mammograms every one to two years for every woman over age 40 – developed by nationally recognized organizations whose members are experts and have made these recommendations based on extensive data.

Media coverage of scientific debates as they unfold should always be viewed with caution, and women should rely more on expert consensus and analysis than on sensationalized controversies. More attention needs to be paid to how risk is communicated and understood.

Ultimately, though, women and their physicians need better tools for assessing and communicating risk. Such tools will some day permit more tailored approaches to breast cancer screening – reducing the number of unnecessary procedures for very low-risk women and intensifying screening for high-risk women. The results: fewer missed cancers and more lives saved, at a reduced cost.