Who Might Benefit?

The Canadian Cancer Society recommends that all women 50 to 69 years of age be screened for breast cancer every two years, using mammography (mammograms). A mammogram gives a detailed photograph of the breast from different angles using X-rays, allowing breast tissue changes and differences to be viewed clearly in the majority of women. However, mammography is less useful for telling normal tissue apart from cancerous tissue in women with dense breasts; that is, women whose breasts have less fatty tissue. In Canada, more than 1 million women who are 50 to 69 years old have dense breasts.

Current Practice

Among women with no signs of breast cancer who meet current criteria for breast cancer screening, a mammogram is usually the first screening tool to be used. Mammograms can also be used as a diagnostic tool when there is a suspicious finding; for example, a breast lump. However, since the ability of mammography to detect breast cancer may be decreased in women with dense breasts, these women can be offered alternative tests, such as magnetic resonance imaging (MRI) or ultrasound. If an abnormality is found, further tests are usually required. A biopsy is normally done to confirm if breast cancer is present. The biopsy test involves taking a small sample of breast tissue and examining it in a lab.

> A new type of imaging system may provide additional, useful information for breast cancer detection in women with dense breasts

What's New?

A new type of imaging system may provide additional, useful information when used in combination with mammography in women with dense breasts, or when mammography results do not agree with physical findings (e.g., when a lump can be felt in the breast). A special device, called a breast-specific gamma camera, is used to scan the breast tissue. Just before the scan, those being tested receive a small amount of an injectable drug called a "tracer," such as technetium-99m sestamibi. More of the tracer is absorbed by cancerous cells than by normal, healthy cells, meaning that breast cancer typically appears as darker spots in comparison with normal tissue in the image that is produced.

Potential Advantages

Breast-specific gamma imaging (BSGI) has shown moderately better performance in identifying breast cancer in women with dense breasts when used in combination with mammography compared with MRI, and was found to be approximately one-quarter of the cost of an MRI in an American study. BSGI is generally found to be comfortable, and image data are received within 5 to 10 minutes of the procedure. A potential concern is the increased radiation dose with BSGI compared with mammography, but recent developments in detector technology have shown that it is possible to provide screening at a lower dose.