

Summary of criteria that should be met when establishing a screening program:

- the disease is an important health problem with a high prevalence.
- The natural history of the disease is understood.
- The disease has a recognisable early stage.
- Early treatment is more successful than later treatment.
- The test is effective.
- The test is acceptable to the target group.
- Treatment is available following diagnosis.
- The benefits of testing outweigh the risks.

## General principles of screening

BreastScreen SA is the accredited South Australian component of BreastScreen Australia. This is an organised national breast cancer screening program aimed at reducing the morbidity and mortality from breast cancer. The WHO principles of screening are applied to the breast cancer screening program, which is regularly and strictly monitored to ensure that national standards are met.

Screening refers to the use of simple tests across a healthy population in order to identify individuals who have disease, but do not yet have symptoms.

A screening test should ensure that:

1. as few people as possible with the disease get through undetected (high sensitivity,) and
2. as few people as possible without the disease are subject to further diagnostic tests (high specificity).

Given high sensitivity and specificity, the likelihood that a positive screening test will give a correct result (positive predictive value) strongly depends on the prevalence of the disease within the population.

The success of cancer screening programs depends on a number of fundamental principles:

- The target disease should be a common form of cancer, with high associated morbidity or mortality.
- Effective treatment, capable of reducing morbidity and mortality, should be available.
- The screening test should be acceptable to the intended target group, safe, and relatively inexpensive.

Guidelines to be applied in a national cancer control program concern:

- proportion of target group screened.
- the frequency of screening and ages at which screening should be performed.
- quality control systems for the screening tests.
- defined mechanisms for investigation, referral and treatment of abnormalities.
- an information system that can send out invitations for initial screening, recall individuals for repeat screening, follow those with identified abnormalities, and monitor and evaluate the program.
- availability of personnel to perform the screening tests, and facilities available for subsequent diagnosis, treatment, and follow-up.

Reference: World Health Organisation website, *Screening for various cancers* ([www.who.int/cancer/detection/variouscancer/en/](http://www.who.int/cancer/detection/variouscancer/en/)).

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## Summary of major BreastScreen SA policies

- Screening is primarily recommended for asymptomatic women aged 50-69, who are actively recruited to the program.
- Asymptomatic women from the age of 40 are eligible to attend.
- Screening interval is every two years.
- Women who meet BreastScreen SA criteria for a strong family history are invited annually.
- Free service; a medical referral is not required.
- All x-rays are read independently by at least two radiologists.
- Every woman and her nominated GP will be notified in writing of the screening results.
- Women with screen-detected abnormalities are invited to attend the Wayville Assessment Clinic in Adelaide.
- Women diagnosed with breast cancer are referred back to their own GPs to arrange further management.



Fibroadenoma seen on a medio-lateral oblique screening mammogram.

*Many women are understandably anxious when they are recalled to assessment... we place great importance on explaining normal or benign findings...*



Ultrasound image of a fibroadenoma.

## Benign findings after assessment of a screen-detected mammographic abnormality.

Some of the articles in previous issues of *Keeping Abreast* have discussed the aims and limitations of screening mammography (March 2003), the procedures undertaken at the BreastScreen SA Assessment Clinic (March 2004), and the management of early breast cancer (September 2003). However, three out of four women who are recalled to assessment have normal findings or benign changes, and so this article looks at the common benign findings after assessment of a screen-detected breast lesion.

Around 3% of women are recalled to our Assessment Clinic at Wayville for further assessment after their screening mammogram. The screening examination consists of two standard views of each breast. Screening mammograms are not read at the time of screening, but are returned to our State Coordination Unit at Wayville for reading independently by two radiologists.

Any area on the screening films that may represent a cancer will need to have further investigation. Until this is done, the outcome of the screening mammogram is not known.

When our Nurse Counsellors contact women to inform them that further assessment is required, they emphasize that a recall to assessment does not automatically mean that a woman has breast cancer, or even that she has a significant problem. It means that our radiologists need more information before they can give a result.

Many women are understandably anxious when they are recalled to assessment, and at the clinic we place great importance on explaining normal or benign findings to women and reassuring them about the outcome.

Women with normal or benign findings at assessment are not at any greater risk of breast cancer, and can continue with routine screening.

Some of the common reasons for normal or benign findings at assessment include dense fibroglandular tissue, cysts, fibroadenomas and benign calcifications. These are discussed in more detail below.

### 1. Normal breast tissue and normal fibroglandular tissue

There may be an area on the screening mammogram that initially could not be graded as normal, but after extra views is shown to have been due to superimposition of normal tissues. The radiology report usually describes this as a "composite shadow".

Areas of fibroglandular tissue which are more dense than surrounding breast tissue on the screening films may need to have extra mammographic views or ultrasound to ensure that a breast cancer is not being obscured.

### 2. Normal intramammary lymph nodes

Normal lymph nodes are present within breast tissue, and occasionally show on the screening mammogram as a possible abnormality. No further investigation is necessary once extra imaging has demonstrated a normal lymph node.

### 3. Fibroadenoma

Fibroadenomas are more common in younger women, but are frequently detected by screening mammography in women of all ages. A needle biopsy may be done at assessment to confirm imaging findings that suggest a fibroadenoma.

A benign, stable fibroadenoma does not need to be excised. However, excision is recommended if the fibroadenoma is growing, to exclude the possibility of other pathology. It is rare for invasive cancer to develop within a fibroadenoma, and the two are not considered related.

#### 4. Cysts

Cysts are often detected on screening mammograms, however ultrasound is required to confirm that the lesion is a simple cyst, and these women will be recalled to assessment.

Cysts are more common in younger women and in women using hormone replacement therapy, and can be seen in women of all ages.

Once a lesion has been confirmed as being a simple cyst on high-resolution ultrasound, no further investigation is required. Routine aspiration of simple cysts is unnecessary, as cysts often resolve spontaneously. If ultrasound demonstrates a complicated cyst, fine needle aspiration (FNA) is necessary. This will often confirm a benign lesion such as an inspissated cyst.

#### 5. Benign calcifications

Calcium deposition is common in benign breast tissue, most often in association with benign fibrocystic change. It can also be seen in cysts and cyst walls, fat necrosis, fibroadenomas and arterial walls.

Radiological assessment of calcifications involves examining their size, shape, density and distribution, and most often requires magnification mammography. When the overall pattern of calcifications clearly fits the pattern of a benign condition, no further investigation is required.

Often however, it is not possible to make this decision based on imaging alone, and biopsy is required to exclude ductal carcinoma in-situ. Biopsy of calcifications is done using the Mammotome, a suction-assisted wide bore needle biopsy using stereotactic guidance.

#### 6. Radial Scar

A stellate lesion on a mammogram is highly suggestive of an infiltrating carcinoma. A similar appearance can however be produced by a benign process called a radial scar (also known as a complex sclerosing lesion).

Radial scars sometimes contain areas of premalignant change, ductal carcinoma in-situ or invasive carcinoma. Management of a radial scar is therefore always surgical excision biopsy, since a benign fine needle or core biopsy result does not exclude the possibility of abnormal cells elsewhere within the lesion. If the lesion is shown to be a completely benign radial scar at excision biopsy, the woman can return to routine screening.

#### 7. Other benign lesions

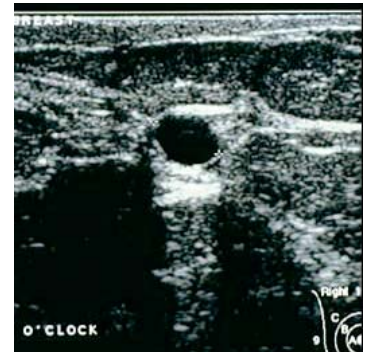
There is a range of other benign lesions, some of which can be diagnosed on imaging and clinical findings, and some which require needle biopsy or surgical biopsy for diagnosis. Examples of other benign lesions include oil cysts, fat necrosis, hamartomas, lipomas, haematomas and papillomas.

#### Summary

The screening mammogram is a test which looks only for signs of breast cancer. The screening result letter therefore does not include a detailed narrative report of any benign findings, and women are not recalled for further assessment of lesions that are clearly benign on the screening mammogram.

Women are recalled to the Assessment Clinic for further investigation when there is a lesion on the screening mammogram which, with the available information on the screening films, cannot be determined as benign. Ultimately however, three out of four women recalled to Wayville for further assessment will have a benign outcome, and will be re-invited for routine screening.

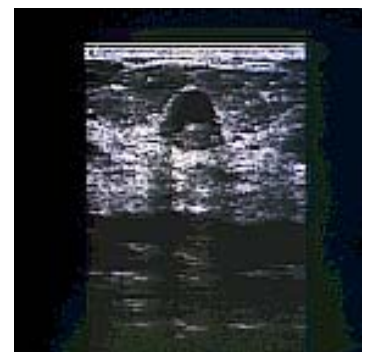
Each woman is informed of all available results on the day of assessment, and will receive a letter within a few days confirming the final outcome of her assessment visit. The woman's GP is sent a written report detailing the radiological findings and any relevant clinical findings. One of BreastScreen SA's Medical Officers will contact the GP to discuss the report if further investigation or treatment is required.



Ultrasound image of a simple cyst.

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*Radiological assessment of calcifications involves examining their size, shape, density and distribution, and...requires magnification mammography.*



Ultrasound image of a cyst, with a solid intracystic papilloma.

## Screening statistics at a glance

To 31 December 2004:

- **760,932** screening mammograms provided.
- **219,491** individual South Australian women screened.
- **63.9%** participation rate by women aged 50-69 over 24 months.

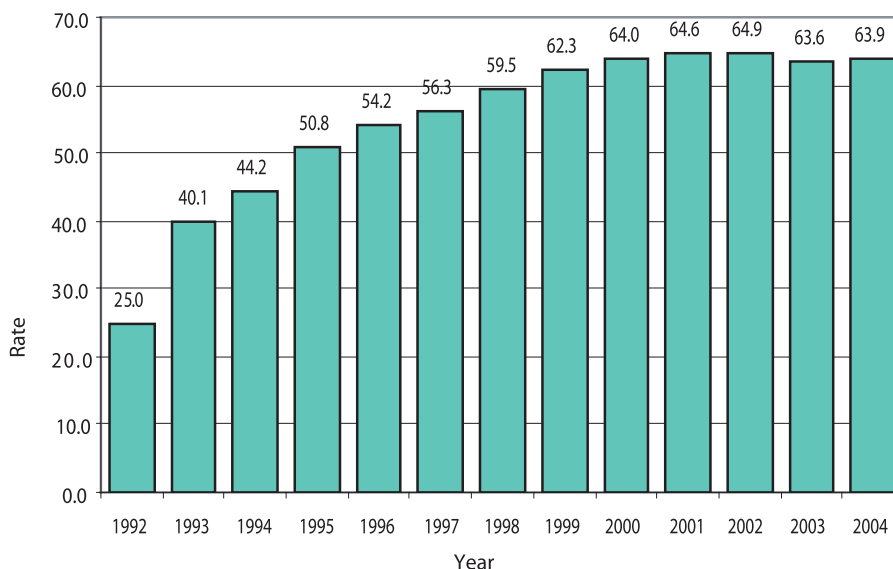
In the year 2004:

- **69,887** screening mammograms provided - record year to date.
- **6,525** screening mammograms provided in August 2004, a record month for this year.

Cancers detected:

- **403** in 2003.
- **4084** from 1 January 1989 to 31 December 2003.

24-month participation rate for women aged 50-69, 1992-2004.  
(Target participation rate is 70%)



Note: BreastScreen SA continues to screen more women in the target age group each year. However, the number of women in the target age group is increasing. This accounts for the slight fluctuation in the participation rates, as shown in the graph above.

*For more information please contact:*

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**WE'RE ON THE WEB**  
[www.breastscreen.sa.gov.au](http://www.breastscreen.sa.gov.au)

*Information in this newsletter is not a substitute for seeking appropriate specialist advice in individual clinical situations.*

## Strategies for General Practitioners

Building collaborative partnerships with GPs is an important strategy for BSSA. We offer:

- a range of free printed resources, including brochures in 15 different languages, and stickers with which to tag the files of your female clients over age 50.
- seminars for health professionals and practice managers – at BSSA or your venue.
- a Clinical Audit Activity developed by BSSA's Medical Officers.
- screening participation statistics by postcode.
- personalised contact with GPs via surgery visits.
- display materials.
- articles for professional magazines/newsletters.

Contact our Medical Officers for more information.

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