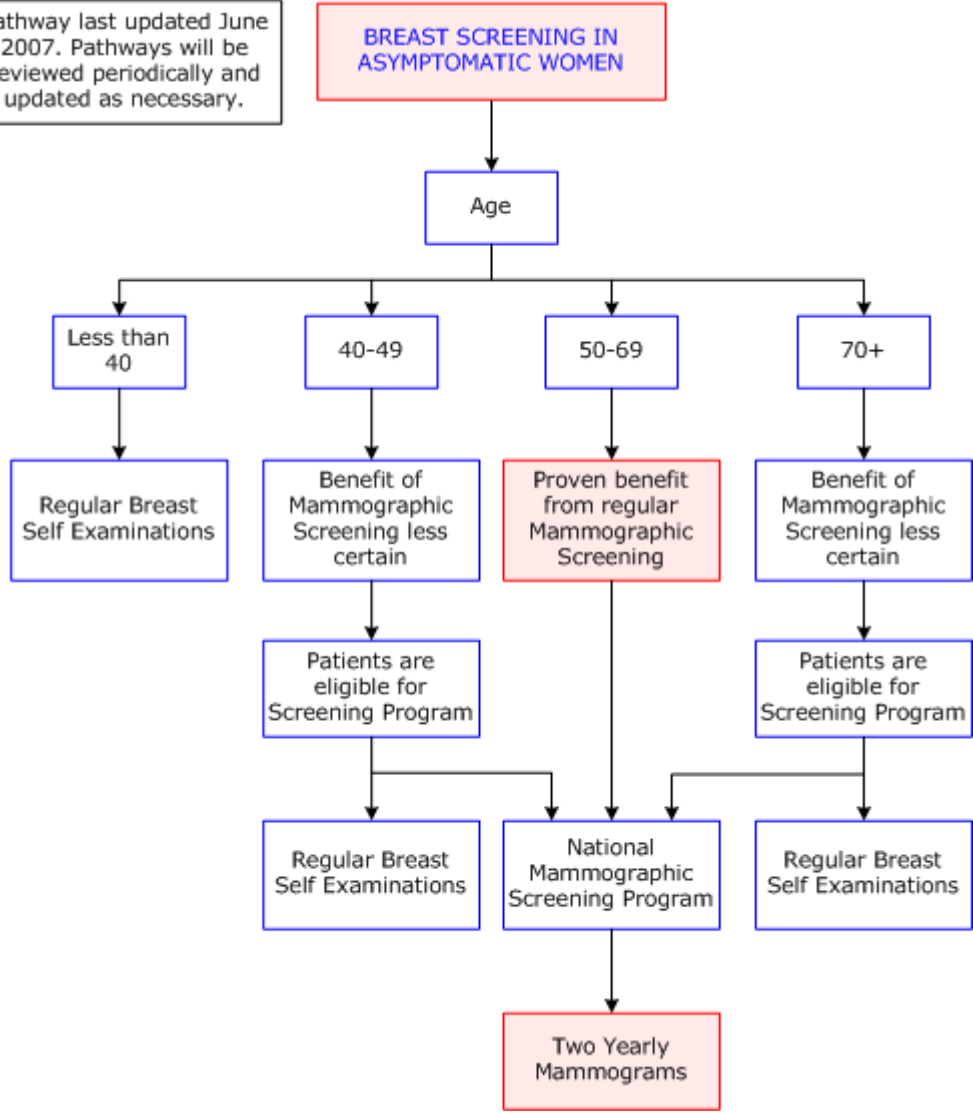




Pathway last updated June 2007. Pathways will be reviewed periodically and updated as necessary.



MAMMOGRAM SCREENING PROGRAM

- Mammographic screening has been shown to reduce up to 30% of breast cancer deaths in women aged 50-69. [1-3,16](#)
- The benefit of screening women younger than 50 is less certain. [4](#)
- The benefit of screening women aged 70-79 has been estimated to be one-third to three-quarters that achieved in women aged 50-69. [11](#)
- Screen-detected invasive cancers have been found to be smaller, less likely to involve nodes and, if node positive, more likely to involve fewer nodes. [12](#)
- BreastScreen Australia therefore targets women aged 50-69 for 2 yearly mammograms, with women aged 40-49 and over 70 also eligible to attend if they wish. [5](#)



- Routine imaging for women younger than 40 is not recommended. [5](#)
- If an abnormality is found on initial screening mammography, it is further investigated by one or more of the following methods, collectively known as the triple test . Not all patients will require all three tests to be performed. [17](#)
 - Clinical assessment.
 - Imaging: repeat mammography including special views, or sonography.
 - Tissue sampling: fine needle aspiration (FNA)
- The use of the triple test for breast lesions has shown sensitivity of 95%-100% (when each component of the triple test suggests malignancy), and specificity of 91%-100% (when each component of the triple test suggests a benign lesion). [18-21](#)

MAMMOGRAPHY

- Standard mammography involves two views: cranio-caudal and medio-lateral oblique. [5](#)
- The diagnostic accuracy of mammography is enhanced through the use of magnification views (magnified, coned compression views), which visualise only a small area of breast tissue but gives better contrast resolution and spatial detail. [5,8-10](#)
- Abnormalities on mammography are generally categorised as : [5](#)
 - Mass lesions
 - Asymmetric densities
 - Architectural disturbances
 - Calcifications
 - A combination of these
- Although it is an excellent tool for evaluating breast lesions, mammography does have an inherent false-negative rate. [13](#)
- Mammography is not as sensitive in detecting abnormal lesions in dense breast tissue and for this reason, ultrasound is preferred over mammography in women younger than 35. [5](#)
- The radiation exposure and hence risk of malignancy secondary to mammography is believed to be extremely low. [6](#)

REFERENCES

1. Tabar L, Fagerberg G, Duffy S, Day N. **The Swedish two county trial of mammographic screening for breast cancer: recent results and calculation of benefit.** J Epidemiol Community Health 1989;43:107-14. (Level II evidence). [Click here to view reference](#)





2. Andersson I, Aspegren K, Janzon L, et al. **Mammographic screening and mortality from breast cancer: the Malmo mammographic screening trial.** *BMJ* 1988;297:943-8. (Level II evidence). [Click here to view reference](#)
3. Shapiro S, Venet W, Strax P, Venet L, Roeser R. **Ten to fourteen year effect of screening on breast cancer mortality.** *J Natl Cancer Inst* 1982;69:349-55. (Level II evidence). [Click here to view reference](#)
4. Irwig L, Glasziou P, Barratt AL, Salkeld G. **Review of the evidence about the value of mammographic screening in 40-49 year old women.** Woolloomooloo (NSW): National Breast Cancer Centre, 1997. (Review article)
5. **Breast Imaging: a guide for practice.** National Breast Cancer Centre, 2002. (Review article)
6. Feig SA, Hendrick RE. **Radiation risk from screening mammography of women aged 40-49 years.** *J Natl Cancer Inst* 1997;22:119-24. (Review article)
7. Macmillan RD. **Screening women with a family history of breast cancer - results from the British Familial Breast Cancer Group.** *Eur J Surg Oncol* 2000;26:149-52. (Level IV evidence)
8. Echlund GW. **The art of mammographic positioning, in radiological diagnosis of breast diseases.** Berlin: Springer, 1997.
9. Faulk RM, Sickles EA. **Efficacy of spot compression-magnification and tangential views in mammographic evaluation of palpable breast masses.** *Radiology* 1992;185:87-90. (Level III evidence)
10. Feig SA. **The importance of supplementary mammographic views to diagnostic accuracy.** *AJR Am J Roentgenol* 1988;151:40-1. (Review article)
11. Berkowitz JE, Gatewood OM, Gayler BW. **Equivocal mammographic findings: evaluation with spot compression.** *Radiology* 1989;171:369-71. (Level IV evidence)
12. Barratt A, Irwig L, Glasziou P, et al. **Benefits, harms and costs of screening mammography in women 70 years and over: a systematic review.** *Med J Aust* 2002;176:266-71. (Review article)
13. Gøtzsche PC, Olsen O. **Is screening for breast cancer with mammography justifiable?** *Lancet* 2000;355:129-34. (Level II evidence). [Click here to view reference](#)
14. **Breast cancer size and nodal status.** Cancer monitoring No 2. Canberra National Breast Cancer Centre; Australasian Association of Cancer Registries; BreastScreen Australia; Department of Health and Aged Care; Australian Institute of Health and Welfare, October 2001.
15. Foxcroft LM, Evans EB, Joshua HK, Hirst C. **Breast cancers invisible on mammography.** *Aust NZ J Surg* 2000;70:162-7. (Level III evidence)
16. NHMRC National Breast Cancer Centre. **The investigation of a new breast symptom: a guide for general practitioners.** Woolloomooloo (NSW): NHMRC National Breast Cancer Centre, 1997. (Evidence based guideline)
17. Moss S. **Should women under 50 be screened for breast cancer?** *Br J Cancer* 2004;91:413-7. (Review article)
18. Taylor R, Morrell S, Estoesta J, Brassil A. **Mammography screening and breast cancer mortality in New South Wales, Australia.** *Cancer Causes and Control* 2004;15:543-50. (Level II evidence). [Click here to view reference](#)





19. Morris A, Pommier RF, Schmidt WA, Shih RL, Alexander PW, Vetto JT. **Accurate Evaluation of Palpable Breast Masses by the Triple Test Score.** Arch Surg 1998;133:930-34. (Level I evidence). [Click here to view reference](#)
20. Steinberg JL, Trudeau ME, Ryder DE, et al. **Combined fine-needle aspiration, physical examination and mammography in the diagnosis of palpable breast masses: their relation to outcome for women with primary breast cancer.** Canadian Journal of Surgery 1996;39:302-11. (Level II/III evidence)
21. Vetto JT, Pommier RF, Schmidt WA, Eppich H, Alexander PW. **Diagnosis of Palpable Breast Lesions in Younger Women by the Modified Triple Test Score is Accurate and Cost Effective.** Arch Surg 1996;131:967-74. (Level II evidence). [Click here to view reference](#)
22. Vetto J, Pommier RF, Schmidt WA, et al. **Use of the "Triple Test" for Palpable Breast Lesions Yields High Diagnostic Accuracy and Cost Savings.** Am J Surg 1995;169:519-22. (Level I evidence). [Click here to view reference](#)
23. Bulter JA, Vargas HI, Worthen N, Wilson SE. **Accuracy of Combined Clinical-Mammographic-Cytologic Diagnosis of Dominant Breast Masses.** Arch Surg 1990;125:893-6. (Level III evidence)

Website

For more information go to www.imagingpathways.health.wa.gov.au

Copyright

© Copyright 2007, Department of Health Western Australia. All Rights Reserved.

This web site and its content has been prepared by The Department of Health, Western Australia. The information contained on this web site is protected by copyright.

Legal Notice

Please remember that this leaflet is intended as general information only. It is not definitive and The Department of Health, Western Australia can not accept any legal liability arising from its use. The information is kept as up to date and accurate as possible, but please be warned that it is always subject to change.

