Recommendations for screening and surveillance for specific cancers
> Guidelines for general practitioners

Ovarian cancer

> Recommendation: Insufficient evidence for population based screening.

Method of screening

Ultrasound (abdominal, transvaginal, Doppler) and serum CA125 have been suggested, however none of these have the sensitivity or specificity to be recommended as a screening test and can be associated with significant harms, and there is no evidence that their use for screening is effective in reducing mortality.

Who should be screened?

Screening is not recommended for all women. Women at potentially high risk of ovarian cancer and perhaps other cancers comprise 1% of the population. These women should be referred to a familial cancer clinic for assessment of clinical risk and advice on risk reduction strategies and surveillance for other relevant cancers (such as bowel or breast cancer).

This group comprises women with the following:

- one first-degree relative diagnosed with epithelial ovarian cancer in a family of Ashkenazi Jewish ancestry, or;
- two first or second-degree relatives on the same side of the family diagnosed with breast or ovarian cancer, especially if one or more of the following features occurs on the same side of the family:
  - breast cancer diagnosed before the age of 40;
  - bilateral breast cancer;
  - breast and ovarian cancer in the same woman;
  - breast cancer in a male relative, or;
- three or more first or second-degree relatives on the same side of the family diagnosed with any of the cancers associated with Lynch syndrome (formerly known as HNPCC): colorectal cancer (particularly if diagnosed before the age of 50), endometrial cancer, ovarian cancer, gastric cancer, and cancers involving the renal tract, or;
- a member of a family in which the presence of a high risk ovarian cancer mutation in a gene such as BRCA1, BRCA2 or one of the DNA mismatch repair genes, has been demonstrated.

References

Clinical practice guidelines for the management of women with epithelial ovarian cancer> canceraustralia.gov.au/publications-resources/cancer-australia-publications/clinical-practice-guidelines-management-women

Familial aspects of breast cancer and epithelial ovarian cancer> gp.cancer.org.au/diagnosis-and-treatment-guides

Bowel (colorectal) cancer

> Recommendation: Good evidence for population based screening.

Method and frequency of screening

Faecal Occult Blood Screening (FOBT) at least every two years for average risk people aged 50 and over. Those with a positive test result should be referred for a colonoscopy.

Who should be screened?

For people of average or slightly above average risk (98% of the population), two-yearly screening should occur from the age of 50. In addition, it is acceptable to offer flexible sigmoidoscopy every five years.

People of moderately increased risk (<2% of the population) may need screening with colonoscopy every five years starting at age 50, or at an age 10 years younger than the age of first diagnosis of bowel cancer in the family (whichever comes first). FOBT may be offered in the intervening years. These people are those who have:

- one first-degree relative with bowel cancer diagnosed before the age of 55 years (without potentially high risk features described below), or;
- two first-degree or one first-degree relative and one second-degree relative/s on the same side of the family with bowel cancer diagnosed at any age (without potentially high risk features described below).

People at potentially high risk (<1% of the population) require close surveillance. These people may have:

- three or more first-degree relatives or a combination of first-degree and second-degree relatives on the same side of the family diagnosed with bowel cancer.
- two or more first-degree or second-degree relatives on the same side of the family diagnosed with bowel cancer, plus any of the following high risk features:
  - multiple bowel cancers in a family member.
  - bowel cancer before the age of 50.
- a family member who has/had a cancer related to Lynch syndrome (formerly known as hereditary non-polyposis colorectal cancer or HNPCC) including endometrial, ovarian, stomach, small bowel, renal pelvis or ureter, biliary tract, or brain cancer.
- at least one first-degree or second-degree relative with a large number of adenomas throughout the large bowel (suspected familial adenomatous polyposis - FAP).
- member of a family in which a gene mutation that confers a high risk of bowel cancer has been identified.

Refer those at potential high risk to a familial cancer service for further risk assessment and possible genetic testing. They should also be referred to a bowel cancer specialist to plan appropriate surveillance and management. This may include:

- FAP: Flexible sigmoidoscopy yearly starting from age 12-15 years until polyposis develops, then prophylactic surgery. If family genetic testing is inconclusive and no polyposis develops, sigmoidoscopy reduced to every 3 years after the age of 35, then change to population screening if examinations normal to age 55. Prophylactic surgery e.g. restorative proctocolectomy is appropriate for those with proven FAP.
- Lynch syndrome (formerly known as HNPCC): Colonoscopy every one to two years from age 25, or five years earlier than the youngest diagnosis in the family (whichever comes first). FOBT should be offered in the intervening years or to subjects unwilling to accept frequent colonoscopy. Prophylactic surgery may be appropriate for some.

Government programs

The National Bowel Cancer Screening Program aims to reduce the incidence and death from bowel cancer. The program currently offers screening to people turning 50, 55, 60 or 65 years of age. Invitees will receive an immunochemical faecal occult blood test (iFOBT) in the post. Those testing positive (i.e. blood found) are encouraged to visit their doctor for follow up testing. By 2020, biennial screening with iFOBT for those aged 50-74 will be implemented, starting with the addition of 70 and 74 year olds in 2015.

References

Familial aspects of bowel cancer: A guide for health professionals (Cancer Council Australia) www.cancer.org.au/clinicalguidelines

Department of Health and Ageing – National screening programs www.cancerscreening.gov.au

Lung cancer

> Recommendation: Insufficient evidence for population based screening.

Method and frequency of screening

There is emerging evidence that yearly low-dose CT scanning in high-risk patients may reduce lung cancer mortality. Further studies are currently underway to assess feasibility, cost effectiveness, and to define characteristics of high-risk patients most likely to benefit from CT screening. Low-dose CT scanning finds a lot of abnormalities that turn out not to be cancer but still need to be assessed to be sure. This introduces increased costs and risks to patients. Until further data becomes available, there is insufficient evidence to support population based screening at this time. There is no evidence to support the use of chest X-ray or sputum cytology for lung cancer screening.

Screening for lung cancer is not a substitute for quitting smoking. The most important thing anyone can do to reduce their risk of lung cancer is not smoke or use any form of tobacco. Most lung cancer cases occur in people who smoke or used to smoke.

Who should be screened?

Further studies are currently underway to define patients most likely to benefit from screening.

References

Practice Guidelines for the Treatment of Lung Cancer www.cancer.org.au/clinicalguidelines

American Cancer Society Lung Cancer Screening Guidelines. Published early online January 11, 2013 in CA: A Cancer Journal for Clinicians. First author: Richard Wender, MD, Thomas Jefferson University Medical College, Philadelphia.

This resource was published in May 2014. The recommendations stated here were correct at time of printing, however may be subject to review.

Breast cancer

> **Recommendation: Good evidence for population based screening.**

Method and frequency of screening

Women 50-74 years of age will be invited to attend for free two-yearly screening mammograms through BreastScreen Australia from 2013-14.

Who should be screened?

For women of average risk (95% of the population) two-yearly screening should occur from the age of 50 to the age of 74. **Women of moderately increased risk** (<4% of the population) may need screening with mammography beginning at a younger age or more often, however the evidence is not clear. These women have:

- one first-degree relative diagnosed with cancer before age 50, or;
- two first-degree relatives on the same side of the family, diagnosed, or;
- two second-degree relatives on the same side of the family, diagnosed with breast cancer, at least one before the age of 50.

Women of high risk (<1% of the population) should be offered appropriate clinical surveillance at a specialist cancer or genetic clinic. They may need more frequent screening, with different modalities (including possibly MRI), and earlier commencement of screening or genetic counselling.
These women have:

- potentially high risk of ovarian cancer, or;
- two first or second-degree relatives on the same side of the family diagnosed with breast or ovarian cancer plus one or more of the following features on the same side of the family:
  - additional relatives with breast or ovarian cancer
  - breast cancer diagnosed before the age of 40
  - bilateral breast cancer
  - breast and ovarian cancer in the same woman
  - Ashkenazi Jewish ancestry
  - breast cancer in a male relative
- one first or second-degree relative diagnosed with breast cancer at age 45 or younger plus another first or second-degree relative on the same side of the family with sarcoma at age 45 or younger, or;
- member of a family in which the presence of a high risk breast cancer gene mutation has been established.

Screening mammograms are not 100% accurate. This means that sometimes women might experience further tests, which would otherwise not have been necessary. It also means that for a small number of women, the screening mammogram might not find a breast cancer that is present. Based on the best available evidence, women are encouraged to participate in the BreastScreen Australia Program, but due to the limitations, it needs to be an informed personal choice.

Government programs

BreastScreen Australia aims to reduce mortality and morbidity from breast cancer by actively recruiting and screening women aged 50-74 years for a free mammogram every two years.

References

Cancer Australia www.canceraustralia.gov.au

Department of Health and Ageing – National screening programs
www.cancerscreening.gov.au

Cervical cancer

> **Recommendation: Good evidence for population based screening.**

Method and frequency of screening

Women should have a cervical smear (Pap test) every two years. Following a comprehensive review of the current evidence, the Medical Services Advisory Committee has recommended a new cervical screening protocol. It is anticipated that no changes will be implemented prior to 2016. For more information, visit *www.cancerscreening.gov.au*

Who should be screened?

Currently, all women who have ever been sexually active should commence having Pap tests between the ages of 18 to 20 years, or one to two years after commencing sexual activity, whichever is later. It is not advised for women to screen before the age of 18, unless they present with symptoms.

For women who have had a hysterectomy, Pap tests are needed if:

- the cervix was not completely removed
- the woman, prior to the hysterectomy, had a history of high grade abnormalities or the hysterectomy was performed as part of treatment for a gynaecological cancer, or;
- the woman has never had a Pap test.

If a woman over 70 years has never had a Pap test, or requests a Pap test, they should be screened.

The HPV vaccine does not protect against all strains of HPV that cause cervical cancer so it is still important for women who have had the vaccine to continue regular Pap tests.

Government programs

The National Cervical Screening Program aims to reduce incidence and death from cervical cancer, in a cost-effective manner, through an organised approach to cervical screening.

References

Department of Health and Ageing – National screening programs www.cancerscreening.gov.au

Department of Health and Ageing - National Cervical Screening Program Renewal
www.cancerscreening.gov.au/internet/screening/publishing.nsf/Content/ncsp-renewal#05

Melanoma

> **Recommendation: Insufficient evidence for population based screening.**

Method and frequency of screening

There is no conclusive evidence that regular examination by a medical practitioner or self are effective in reducing mortality from melanoma. Individuals should be encouraged to know what their skin lesions look like and report any changes noticed promptly to their doctor.

Who should be screened?

There is no conclusive evidence that screening of people who are not at increased risk decreases mortality from melanoma.

There is low grade evidence that individuals at high risk of melanoma could benefit from education to recognise and document lesions suspicious of melanoma, and to be checked by a clinician with total body photography and dermoscopy as required. High risk individuals are not well defined but may include combinations of the following factors: age and gender; history of previous melanoma or non-melanoma skin cancer; family history of melanoma, including age of onset and multiplicity of any melanoma cases; number of common melanocytic naevi; number of clinically atypical naevi; skin and hair pigmentation type and response to sun exposure; and evidence of actinic skin damage. These people should develop targeted surveillance programs with their GP.

Individuals with known inherited mutations in the genes encoded by the CDKN2A locus, p16INK4A and p14ARF have an increased melanoma risk, especially in the context of a family history of melanoma. Screening for a mutation in the CDKN2A gene should be contemplated only after a thorough risk assessment by a familial cancer or melanoma clinic.

References

Clinical practice guidelines for the management of melanoma in Australia and New Zealand
www.cancer.org.au/clinicalguidelines

Melanoma: An aide memoire to assist diagnosis
www.cancer.org.au/clinicalguidelines

Prostate cancer

> **Recommendation: Insufficient evidence for population based screening.**

Men should be informed about prostate cancer and the pros and cons of testing and treatment and from this make a decision based on their personal preferences and individual risk factors.

Method and frequency of screening

Digital Rectal Examination (DRE) and Serum Prostate Specific Antigen (PSA) are used as screening tests, although the accuracy of these tests is not high. The likelihood that a man has prostate cancer if his PSA is above 4ng/ml is less than 30% (positive predictive value). For every 100 men who have prostate cancer proven by biopsy, between 10 and 30 will have a PSA below 4ng/ml (false negatives).

Who should be screened?

The issue of population screening for prostate cancer remains controversial, as current evidence suggests the harms associated with screening and treatment outweigh the modest long term mortality benefits. Cancer Council Australia's position is that in the absence of direct evidence showing a clear benefit of population based screening for prostate cancer, a patient centred approach for individual decisions about testing is recommended. Ideally this takes the form of an informed, shared, decision-making process between the doctor and man, discussing the benefits, risks and uncertainties of testing, and discussion about treatment options and side effects. Screening discussions and decisions should always include and take into account, age and other individual risk factors such as a family history of the disease.

References

Cancer Council Australia position statement on prostate screening www.cancer.org.au/positionstatements

Andrology Australia position statement on prostate screening
www.andrologyaustralia.org/positional-statement

Early detection of prostate cancer in general practice: supporting patient choice
gp.cancer.org.au/diagnosis-and-treatment-guides