

Section C

Promoting health and preventing cancer

Key messages

- The World Cancer Report (WHO, 2003) provides clear evidence that public health action by governments and the promotion of healthy lifestyles could prevent as many as a third of cancers worldwide
- Tobacco use accounts for almost a third of all cancer deaths. The single most effective measure against smoking is sharp price increases
- High consumption of alcoholic beverages increases the risk of cancers of the oral cavity, pharynx, larynx, oesophagus, liver and breast. In the last decade, Ireland has had the largest increase in alcohol consumption among EU15 countries
- Poor diet and obesity are cancer risks. Specific measures are required to improve nutrition and to control obesity. Regular physical activity is a significant element in cancer prevention and control
- Regulation of sunbed use, including restriction of use to adults only, should be put in place
- Inequalities in cancer risks, cancer occurrence, cancer services and cancer outcomes are evident and must be monitored and addressed
- Population-based screening programmes for cancer should only be considered where clear evidence exists of the benefit to the health of the whole population to be screened outweighing harm at reasonable cost
- Breast screening should be extended to include all women aged between 50 and 69
- The national roll-out of the Irish Cervical Screening Programme should be completed as a matter of priority
- A colorectal screening programme should be established following resolution of a range of implementation issues
- Population-based prostate screening should not be introduced in Ireland at present
- Opportunistic testing of asymptomatic individuals for cancer is not recommended
- For many cancers, population-based screening is not supported by evidence. Early detection of cancer through other means, therefore, must be a key element of an overall National Cancer Strategy.

C.1 Health promotion

Health promotion is a component of population health aimed at tackling the major determinants of health to achieve health and social changes that can improve the health of the whole population. Health research provides evidence for the value of health promotion in terms of cancer prevention.

It is well documented that lifestyle issues, particularly smoking, can increase the risk of cancer while others, including physical activity and exercise, can have a protective effect. The World Cancer Report (WHO, 2003) provides clear evidence that public health action by governments and the promotion of healthy lifestyles could prevent as many as a third of cancers worldwide.

C.1.1 The Health Promotion Strategy

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The recommendations of the Review of the National Health Promotion Strategy, 2004 should be implemented across all sectors.

The developments in health promotion in Ireland since the launch of the first National Cancer Strategy reflect the global trend to integrate health promotion in relevant health policies. These developments are underpinned by the strategic direction set out in the second National Health Promotion Strategy, *National Health Promotion Strategy 2000-2005*, and in many other related strategies. The purpose of the second National Health Promotion Strategy is to set out a broad policy framework within which actions can be carried out at an appropriate level to advance the key strategic aims and objectives of health promotion policy.

The Department of Health and Children conducted a review of the impact of the Health Promotion Strategy (*Review of the National Health Promotion Strategy 2004*). It found high levels of implementation at both national and regional level in relation to tobacco control, physical activity and nutrition. The review focused in its recommendations on a number of components of the National Health Promotion Strategy. For example, it advocated more effective intersectoral action, strengthening partnerships, building health promotion capacity, and strengthening the performance measurement, research and evidence base underpinning health promotion.

The recommendations of the *Review of the National Health Promotion Strategy, 2004* should be implemented. Given the particular risks that lifestyle-related factors among the young pose for cancer in later life, there should be a particular emphasis on reaching young people in the implementation of the National Health Promotion Strategy.

C.1.2 Smoking

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Compliance with all provisions of the Public Health (Tobacco) Acts, 2002 and 2004 should be monitored.

Tobacco use is the single largest causative factor for cancer, accounting for 30% of all cancer deaths in developed countries. Environmental tobacco smoke (passive smoking) is also carcinogenic to humans. Many advances have been made with regard to smoking and smoking control in Ireland in recent years.

Towards a Tobacco Free Society, produced by the Department of Health and Children in 2000, proposes an integrated strategy for tackling tobacco consumption and promoting a tobacco-free society. The Office of Tobacco Control (OTC) was established as a statutory structure in May 2002 to increase the capacity of the health services to tackle the problem of smoking.

The national smoking prevalence declined from 31% in 1998 to 27% in 2003 (Survey of Lifestyle, Attitudes and Nutrition (SLÁN), 1999 and 2003). The most recent survey by the OTC in October 2005 shows smoking prevalence is now down to 23.93%. This is most probably because of the strong policy measures introduced in recent years and further strengthened through the Public Health (Tobacco) Acts, 2002 and 2004. This legislation *inter alia* places significant restrictions and conditions on the advertising, sale and consumption of tobacco and includes the ban on smoking in indoor workplaces. Compliance with all its provisions should be monitored and all necessary enforcement action should be taken.

The ban on smoking in indoor public places, which was implemented in Ireland in 2004, is a very significant success. It is an example of how Ireland can play a leadership role in cancer control internationally.

4 Excise duty on cigarettes should be substantially increased each year above the rate of inflation. To this end the National Cancer Forum should produce a pre-Budget submission to the Minister for Finance each year in order to continue advocating for price increases on tobacco.

Evidence shows that the most effective measure against smoking in the short term consists of sharp price increases. There is a strong social gradient evident in smoking patterns in both adults and teenagers in Ireland with the highest rates among lower socio-economic groups. Children and those in the lower socio-economic groups are most sensitive to price increases.

5 Nicotine replacement therapy should be made available free of charge to all medical card holders.

Smoking cessation support has increased significantly in Ireland in recent years. There is strong evidence to show that helping smokers quit is cost-effective in terms of years of life gained, reduction in cost of treatment and potential savings on drugs. The evidence shows that pharmacological aid in the form of nicotine replacement doubles a person's chance of successfully quitting. The provision free of charge of nicotine replacement therapy will particularly benefit medical card holders.

C.1.3 Alcohol

6 The Report of the Strategic Task Force on Alcohol, 2002 should be implemented in full.

A high consumption of alcoholic beverages increases the risk of cancers of the oral cavity, pharynx, larynx, oesophagus, liver and breast. In the last decade, Ireland has had the largest increase in alcohol consumption among EU15 countries. Between 1989 and 2001, per capita alcohol consumption in Ireland increased by 49% while ten of the EU member states showed a decrease and three other countries showed a modest increase during the same period.

The Report of the Strategic Task Force on Alcohol, 2002 sets out the way forward in terms of what is effective to reduce alcohol-related harm. The policy measures that have been shown to be most effective in reducing the consumption of alcohol involve regulating the market availability of alcohol beverages and drink-driving counter-measures.

C.1.4 Nutrition

7 The recommendations of the Report of the National Task Force on Obesity, 2005 should be implemented in full. In particular, there is a need for measures that raise awareness of the links between diet and cancer.

It is estimated that around a third of all cancers are related to diet. Diet has been recognised as contributing to the development of cancers of the colon, rectum, stomach, lung, and prostate. Overweight and obesity, which are increasing throughout the western world, are risk factors for developing certain forms of cancer. In Western Europe, it has been estimated that being overweight or obese accounts for approximately 11% of all colon cancers, 9% of breast cancers, 39% of endometrial cancers, 37% of oesophageal adenocarcinomas, 25% of renal cell cancers and 24% of gall bladder cancers.

8 The health services should work with the food industry in order to encourage it to produce, market and improve access to attractive and healthy options.

There is an increasing body of evidence indicating that health promotion in nutrition leads to health gains at a much lower cost than medical treatment of either high-risk groups or patients. But improving knowledge alone is ineffective in improving people's diets; affordability and lack of accessibility to foods such as fruit and vegetables have been identified as key barriers to eating a healthier diet.

C.1.5 Physical activity

9 The recommendations of the Report of the National Task Force on Obesity, 2005 in relation to physical activity should be implemented in full.

The WHO states that regular physical activity is a significant element in cancer prevention and control. There is consistent evidence that some form of regular physical activity is associated with a reduction in the risk of colon cancer. There is also a suggestion of a risk reduction in relation to cancer of the breast, endometrium and prostate. The protective effect of physical activity on cancer risk improves with increasing levels of activity. According to the 2002 SLÁN Survey, only 51% of the population reported engaging in some form of regular physical activity.

C.1.6 Ultraviolet radiation

10 In conjunction with campaigns to promote safe sun practices and to reduce exposure to ultraviolet radiation, regulation of sunbed use, including restriction to use by adults only, should be put in place.

Ultraviolet light, either through natural exposure or sunbed exposure, increases the risk of developing skin cancer. There are three main forms of skin cancer. Squamous and basal cell carcinomas (usually collectively referred to as NMSC) account for a third of all cancers but are rarely fatal and are rarely associated with distant spread. However, in relation to melanoma, which is associated with significant mortality, detection in its early stages increases a person's likelihood of survival. Medical and associated costs are also reduced.

In the development of skin cancer, using a sunbed leads to damage from ultraviolet radiation in the same way as sunlight exposure. Exposure in childhood is associated with even greater risks of subsequent melanoma. It is necessary to complement current efforts to promote safe sun practices and to reduce exposure to ultraviolet radiation, with the regulation and restriction of the use of sunbeds to use by adults only.

C.1.7 Radon

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The public should be made aware that radon measurements can be undertaken by the Radiological Protection Institute of Ireland. Consideration should be given to providing financial support for testing in high-radon areas and for any necessary remedial work, on a means-tested basis.

Radon is a naturally occurring radioactive gas that originates from the decay of uranium in rocks and soils. When radon surfaces in the open air, it is quickly diluted to harmless concentrations, but when it enters an enclosed space, such as a house or other building, it can sometimes accumulate to unacceptably high concentrations. When inhaled into the lung, radon may damage cells in the lung and eventually lead to lung cancer. It accounts for approximately 9% of all cases of lung cancer.

C.2 Health inequalities

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The HSE should put in place arrangements to monitor inequalities in cancer risks, cancer occurrence, cancer services and cancer outcomes.

Inequalities in health are differences in the experience of health or health services between various groups, whether defined by age, sex, geography, ethnicity or social class. Almost all health conditions show evidence of inequalities. They have been demonstrated to varying degrees in all health care systems. The occurrence of cancer and the experience that people have of services for cancer also demonstrate inequalities. Section B shows that these inequalities exist in survival from cancer and in many other aspects of cancer in this country.

There are a number of reasons for these inequalities in cancer. These include genetic factors and different exposure to risk factors such as smoking, alcohol and diet. They also include differences in the awareness of, and response to, cancer symptoms, lower uptake of screening and variations in access to high-quality services.

There is a need for a consistent focus on risk factors for cancer, incidence of cancer, access to services, and outcome from services to help to reduce health inequalities between various groups. The HSE should put in place arrangements to monitor inequalities in cancer risks, cancer occurrence, cancer services and cancer outcomes. The policy indicators proposed in Section G of this Strategy will provide an important means of maintaining a policy focus on cancer inequalities.

C.3 Screening

C.3.1 What is screening?

Screening is a means of detecting disease before it has developed to the point where it results in symptoms. It can allow detection of cancers at an early stage of invasiveness, or even before they become invasive. Screening aims to improve survival, limit morbidity and to improve the quality of life of those who have developed cancer.

Screening is different from most other forms of health care and there is often uncertainty about its purpose. Screening does not diagnose illness; its purpose is risk reduction. It is not a guarantee of diagnosis and cure; those who have a positive screening test require confirmatory diagnostic testing before definitive diagnoses can be established and appropriate treatment planned.

Screening may be population-based or focused on high risk groups. Population screening is aimed at an entire cohort group in the population, selected on the basis of general demographics, e.g. all women aged 50–64. High risk screening is usually based on more individual characteristics, e.g. family history.

Screening may be undertaken pro-actively or opportunistically. In **pro-active screening** members of a target population will attend for testing in a systematic programme that will cover the whole of that population over a defined period of time, e.g. BreastCheck. Conversely, **opportunistic screening** is a test for an unsuspected disorder carried out when a person visits a health professional for another reason, e.g. blood pressure screening.

C.3.2 Population-based screening for cancer

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Population-based screening programmes should only be introduced where their population health benefit can be demonstrated using the National Cancer Forum criteria.

Given the complexity of issues surrounding screening for cancer, there is a need for the National Cancer Forum to provide advice based on a continuous examination of the evidence base for population-based screening, high risk screening and early detection of cancer. Its main role should be to consider evidence on an ongoing basis and to make recommendations relating to:

- the introduction of programmes of population screening for specific cancers
- the introduction of programmes of high risk screening for specific cancers
- the introduction of measures designed to enable early detection of cancer through means other than screening
- priorities in cancer screening and prevention (in overall cancer control)
- policy changes to existing screening programmes.

The Forum's activity in these areas is in keeping with international evidence and with similar national approaches to analysing these issues of complexity in other jurisdictions. This work shows that there is evidence pertaining to some specific cancers showing that population-based screening can improve population health in terms of survival, morbidity and quality of life. However, for other cancers the evidence is less clear. In spite of this, the predominantly healthy populations that population-based screening is aimed at generally perceive screening to be uncontroversial, with obvious benefits.

Whatever the beneficial effects of screening, there may also be negative side-effects on the screened population. The ethical responsibility attached to screening is therefore significantly higher than that attached to ordinary clinical practice. As a result, the introduction of population-based screening programmes for cancer should only be considered where clear evidence exists of benefit outweighing harm to the health of the whole population.

Criteria that should be satisfied before the introduction of population-based screening programmes were first published by the WHO in 1968 and have, in general, stood the test of time. However they require some modification in the light of the last 30 years' experience. In the development of the original criteria, insufficient emphasis was placed on the harmful effects of screening, the quality of the evidence on the effectiveness of screening was not specified, and the opportunity costs of implementing a screening programme were not considered.

Consequently, more comprehensive updated criteria have been agreed by the National Cancer Forum as a framework for guiding decisions concerning national population-based screening programmes (Box C.1). These criteria were then applied by the Forum in examining the case for population screening programmes for both colorectal and prostate cancer.

Box C.1: National Cancer Forum criteria for decisions on the introduction of population-based screening

The condition

- The condition should be an important health problem
- The epidemiology and natural history of the condition, including development from latent to declared disease, should be adequately understood and there should be a detectable risk factor, disease marker, latent period or early symptomatic stage
- All the cost-effective primary prevention interventions should have been implemented as far as is practicable.

The test

- There should be a simple, safe, precise and validated screening test
- The distribution of test values in the target population should be known and a suitable cut-off level defined and agreed
- The test should be acceptable to the population
- There should be an agreed policy on the further diagnostic investigation of individuals with a positive test and on the choices available to those individuals.

The treatment

- There should be an effective treatment or intervention for patients identified through early detection, with evidence of early treatment leading to better outcomes than late treatment
- There should be agreed evidence-based policies covering which individuals should be offered treatment and the appropriate treatment to be offered
- Clinical management of the condition and patient outcomes should be optimised by all health care providers prior to participation in the programme.

The screening programme

- There should be evidence from high-quality randomised controlled trials that the screening programme is effective in reducing mortality or morbidity
- There should be evidence that the complete screening programme (test, diagnostic procedures, treatment/intervention) is clinically, socially and ethically acceptable to health professionals and to the public
- The benefit from the screening test should outweigh the physical and psychological harm (caused by the test, diagnostic procedures and treatment)
- The opportunity cost of the screening programme (including testing, diagnosis and treatment) should be economically balanced in relation to expenditure on medical care as a whole
- There should be a plan for managing and monitoring the screening programme and an agreed set of quality assurance standards
- Adequate staffing and facilities for testing, diagnosis, treatment and programme management should be available prior to the commencement of the screening programme
- All other options for managing the condition should have been considered (e.g. improving treatment, providing other services).

C.3.3 Breast cancer screening

14 **Breast screening should be extended to include all women aged between 50 and 69.**

There are approximately 1,600 new invasive breast cancer cases annually. Breast cancer remains the most common cause of cancer death for women.

The National Breast Screening Programme (BreastCheck) was established in 1998 with the aim of screening women aged between 50 and 64 with mammography every two years. It is a very successful model of care, consisting not only of mammographic screening but also the follow-up and surgical management of women who are screened positive within the programme. It has provided quality-assured multidisciplinary care to women within internationally accepted time limits. It is imperative that the programme is rolled-out nationally as quickly as possible in line with current plans.

The European Council recommends mammography screening in women aged between 50 and 69. Following national extension of the programme, the upper age limit should be extended to 69.

C.3.4 Cervical cancer screening

15 **The national roll-out of the Irish Cervical Screening Programme should be completed as a matter of priority.**

There are approximately 170 new cases of cervical cancer and approximately 76 deaths from cervical cancer annually. Cervical screening identifies abnormalities that may, if left untreated, develop into cervical cancer.

In 1996, the *Report of the Department of Health Cervical Screening Committee* recommended the introduction of a National Cervical Screening Programme. Phase one of the National Cervical Screening Programme began in the Mid-Western Area in October 2000. Under the programme, women in the 25 to 60 age group are being screened at five-year intervals free of charge. The Health Strategy commits the Government to the full extension of the programme. An evaluation of phase one of the programme was conducted by the former Health Boards Executive in 2004 and the findings of this review should inform the national roll-out of cervical screening.

C.3.5 Colorectal cancer screening

16 **A colorectal cancer programme should be established to encompass population screening, high risk screening and necessary developments in symptomatic colorectal cancer services. In preparation for this programme, the Department of Health and Children should establish a working group under the aegis of the National Cancer Forum to address a range of implementation issues.**

Colorectal cancer is the second most common cancer in Ireland and is a serious public health problem. The mortality-to-incidence ratio for this cancer is relatively high, with just over five deaths for every ten incident cases. Early detection can result in improved survival rates.

Screening for colorectal cancer may be population-based or focus on groups at particularly high risk. Population screening is aimed at an entire cohort in the population selected on the basis of general demographics e.g. everyone aged 50–74, and involves the detection of blood in faeces by faecal occult blood testing (FOBT). High risk screening is usually based on individual characteristics (e.g. family history) and

employs more invasive screening tests such as colonoscopy. Colorectal cancer in high risk individuals tends to occur at younger ages that would not generally be covered through population screening. However, the great majority of colorectal cancers occur in people who do not fall into these high risk categories.

FOBT is the most rigorously studied population screening option for colorectal cancer. Four randomised controlled trials (RCTs) have demonstrated that FOBT reduces mortality from colorectal cancer. A meta-analysis of these studies in 1998 found that those screened have a 23% reduction in mortality. This would equate to over 200 prevented deaths each year in Ireland. However, FOBT has poor sensitivity and specificity and has to be repeated at regular intervals. As a consequence, large numbers of well persons may undergo further assessment that leads to anxiety and the risk of possible complications.

The decision to introduce a screening programme for colorectal cancer, therefore, requires the potential risks and benefits to be assessed and compared. The European Council has recommended FOBT screening for colorectal cancer in men and women aged 50 to 74 and that this should be seriously considered based on professional expertise and priority setting for health care resources within each EU member state.

The National Cancer Forum has been monitoring emerging evidence and trends in other countries in respect of colorectal cancer screening. The Forum is now of the view that colorectal cancer screening using FOBT should be introduced in Ireland. However, it believes that substantial work is required to address a range of issues as a prerequisite to the development of an implementation plan. A working group should be established under the auspices of the National Cancer Forum to address each of the following issues:

- **Defining a clear population screening programme** – There are different approaches internationally concerning which FOBT test should be used; which age ranges should be initially prioritised; at what intervals screening should take place; and what follow-up tests should be carried out for those with a positive FOBT. A process to decide on all these key aspects of the design of a population screening programme will be required. International research and pilot colorectal screening programmes are ongoing and may add further clarity to these issues. As a result they should be kept under review
- **Organisation of services** – Consideration is needed of how many screening centres will be required. Treatment pathways and protocols with appropriate capacity to ensure a prompt follow-up will also have to be defined for people who are found to have colorectal cancer or other conditions identified through a screening programme
- **Quality assurance** – As with other population screening programmes, a quality assurance system is a critical requirement and must be embedded in any programme from the outset. This should include risk management strategies to minimise the potential harmful effects of screening and follow-up
- **Call and recall system** – A colorectal cancer screening programme will require a population frame for the appropriate target population. This will include invitations to screening and follow-up, issuing of results and systematic tracking of all contacts
- **Symptomatic services** – A screening programme will increase the requirement for services for colorectal cancer, yet significant numbers of cancers will continue to present directly as a result of people experiencing symptoms rather than having been screened. It is necessary to ensure that services for those identified with cancer outside of a screening programme be reviewed and developed side by side with screening services to ensure that cancer services respond appropriately to the needs of both groups of patients
- **High risk screening** – As cancer in high risk groups frequently occurs outside the likely age ranges for population screening, a programme to detect these cancers will also be required as part of an overall programme of colorectal cancer screening.

C.3.6 Population-based screening programmes

17 The Department of Health and Children in conjunction with the HSE and BreastCheck should plan the alignment of population-based screening programmes.

BreastCheck is a statutory organisation separate from the Irish Cervical Screening Programme, which is provided by the HSE. The rollout of these programmes nationally provides an opportunity to align their management and governance. In addition, any future development in relation to colorectal cancer screening should align with breast and cervical cancer screening.

C.3.7 Prostate cancer screening

18 Population-based prostate screening should not be introduced in Ireland at present. The National Cancer Forum should keep emerging international evidence on population screening for prostate cancer under review.

Prostate cancer is the second most common cause of cancer deaths in men. There are approximately 1,150 new invasive prostate cancer cases annually. It is a disease of older men with the majority of cases occurring in the 70–74 year age group and the majority of deaths in the 80–84 year age group.

The natural history of this condition is not well understood. The optimum treatment for localised prostate cancer is also controversial. The options of surveillance, radiation oncology and radical surgery all have benefits and potential side-effects. There is no compelling data to demonstrate the superiority of any of these treatment options for an individual patient. There are ongoing large randomised controlled trials to determine the most appropriate treatment option for localised disease.

The principal screening tests for prostate cancer are digital rectal examination (DRE), serum tumour markers such as prostate-specific antigen (PSA), and transrectal ultrasound. At present there is no direct evidence on the effectiveness of these screening tests in reducing the mortality from prostate cancer. However, randomised controlled trials are under way in Europe and the US to examine the benefits of PSA and DRE as screening tools. Results from these trials will not be available until at least 2008.

There is currently insufficient evidence to recommend the introduction of a prostate screening programme. This issue should be reassessed when the results of RCTs are available.

C.3.8 Opportunistic testing for cancer

19 Opportunistic testing of asymptomatic individuals for cancer is not recommended.

There is a considerable level of testing which is regarded as screening by health professionals. Examples of this include cervical smear tests outside the National Cervical Screening Programme, PSA testing and mammograms in asymptomatic women outside the BreastCheck Programme. While many of these tests may well be carried out as diagnostic procedures, significant numbers are conducted in the belief that they constitute screening and carry with them the benefits associated with organised screening programmes.

However, without appropriate quality assurance mechanisms, clear referral and follow-up procedures, call and recall processes, among many other organisational attributes, this form of testing does not carry the benefits of organised population-based screening and may actually be injurious to health.

Opportunistic testing for cancer among asymptomatic people is therefore not recommended. However, it is recognised that there is a considerable volume of opportunistic testing taking place at present. Patients should not undergo such testing unless they and their attending health professionals both know and understand its significant limitations.

The HSE should develop information material, both for health professionals and for the general public, on the use of screening tests outside national screening programmes. In developing such information, it would be worthwhile to have particular regard to the Prostate Cancer Risk Management Programme in the UK. This programme is aimed at primary care clinicians advising and counselling asymptomatic men who are worried about prostate cancer.

C.4 Early detection

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The HSE should develop specific programmes that promote early detection of cancer.

For many cancers, population-based screening is not supported by evidence. Early detection of cancer through other means, therefore, must be a key element of an overall National Cancer Strategy.

Early detection is an approach that promotes vigilance for signs and symptoms that may be indicative of early disease. It is based on the premise that it is easier to treat and cure the cancer if it is detected early. Detecting cancer early, before it has had a chance to spread, remains the best strategy for reducing cancer deaths. Examples of early detection include breast awareness, testicular examination and skin inspection, as well as early presentation for medical attention with worrying symptoms such as lumps, changing moles, abnormal bleeding, change in bowel habit and unexplained weight loss.

An important component of early detection initiatives is educating the public about early detection and the importance of recognising symptoms, performing self-examination, and early presentation with any suspicious symptoms. Such initiatives should also include programmes to increase public awareness of the early warning signs of cancer, including the warning signs of cancer in children, and use of cancer self-examination techniques and screening tests.