Testing for Cancer

MY OPTIONS. MY CHOICE.
The information in this booklet will help you to:
- understand your testing options;
- identify if you are at risk for getting specific cancers;
- consider your personal values regarding testing for cancer;
- understand how you can reduce your risk;
- find out where you can learn more.

You can reduce your risk by making healthy lifestyle choices:
- Participate in recommended cancer screening programs
- Speak to your health care provider about any changes in your health
- Limit how much alcohol you drink – men less than 2 drinks a day, women less than 1
- Don’t smoke
- Maintain a healthy body weight
- Eat a variety of healthy foods
- Exercise regularly
- Protect yourself from the sun and avoid using artificial tanning equipment
- Practice safe sex
- Follow health and safety instructions when using hazardous materials

Introduction

The possibility that we may get cancer is a real fear for many of us. We want to know what our risks are and what we can do to prevent it. If we do develop cancer, early detection and prompt treatment often increase our chances of surviving.

So what kinds of tests can we have to see if we have cancer? Which ones work best and what do they involve? Are there any downsides to testing? What kinds of things put us at risk for getting certain cancers and what can we do to live a healthier life?

The information in this booklet will answer these questions and help you to understand the tests that are available today. It will also help you to explore your personal values around making health decisions. Your personal values are influenced by the things that are important to you (e.g., family, career, and community) and how you deal with stress (casually or with high anxiety).

Knowing more about testing for cancer is important when you want to make an informed decision. It can also help you to better understand why your health care provider may recommend that you do or do not have certain tests.

You play an important role in testing for cancer. Understanding your risks and keeping an eye on potential problems are important steps in managing your health. You should talk with your health care provider about any symptoms you have and make sure that you understand the pros and cons of testing before you move forward.

The booklet is intended for average risk, healthy individuals. If you have a family history of cancer, or other medical conditions or diseases, you should speak to your health care provider about what testing is right for you.

Know your options. Make your choice.
**Your testing options**

Cancer tests can be used for two different purposes: screening and investigation.

The goal of both approaches is to detect disease at its earliest stages and to improve your chances for successful treatment.

1. **Cancer screening**
   - Tests that are recommended for people who do not have any signs or symptoms; this includes the general public and those who are at high risk.

   Currently in Canada, there are screening programs for three cancers: colorectal, cervical and breast cancer.

   Your health care provider will recommend that you are tested for these cancers once you reach a certain age or if you are at high risk (e.g., have a first-degree family member who has or has had one of these cancers), even if you have no signs or symptoms.

   Regular screening for these cancers has been proven effective to find cancer early and reduce mortality (death).

2. **Cancer investigation**
   - Tests that are recommended for people who have signs or symptoms.

   Your health care provider may recommend that you have certain cancer tests if you have signs or symptoms that could indicate the presence of disease.

   The reason we don’t have screening programs for all cancers is because not all tests have been proven effective for screening use. For example, some tests haven’t been shown to increase your chance of survival (you may just end up knowing that you have cancer for longer). Other tests are not accurate enough and may tell you that you have cancer when you don’t (false-positive) or tell you that you don’t have cancer when you do (false-negative).

**Testing for cancer is a team effort that includes you and your health care provider.**

**Health care provider**

Your health care provider considers the following factors when referring you for cancer tests:

**Your Age**

Most medical guidelines recommend that we stop testing after age 70.

The benefits of testing for cancer are not clear when considering older people. This is because:

a) Research trials do not usually include many people over 70 years of age;

b) As people get older, testing tends to over-diagnose disease when it is not there.

**Your general health**

As you age, a big factor to consider when testing for cancer is your health. Testing can tell you about issues that might not make a difference to your health in the long run and intervening can sometimes make things worse.

If your health is excellent, then your health care provider may recommend that you continue testing. If your health is poor, the recommendation may be that you stop testing earlier as the tests can further complicate your health.

**Your risk factors**

Your risk for developing cancer depends on many factors, including lifestyle and age. Some people develop cancer without having any risk factors. However, research tells us that making healthy choices (e.g., not smoking, getting regular exercise, eating well) reduces your risk. When estimating your risk for developing cancer, your health care provider uses health statistics which are based on clinical research.
Your personal options

When the benefits of testing for cancer are not clear, your decision may be based on a combination of your personal values, advice from others (especially your health care providers) and an assessment of your unique risk.

Consider the pros and cons of testing for cancer before you move forward.

<table>
<thead>
<tr>
<th>PROS</th>
<th>CONS</th>
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<tbody>
<tr>
<td>Testing for cancer can detect cancer early, improving your chance of survival.</td>
<td>Testing can produce false-negatives (telling you that you don’t have cancer when you actually do).</td>
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<td>Some tests can be done easily and without much discomfort.</td>
<td>Testing can be uncomfortable and further complicate your health, especially if you are elderly or in poor health.</td>
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<tr>
<td>Having the tests can make you feel more at ease and in control of your health.</td>
<td>Testing can produce false-positives (telling you that you may have cancer when you actually don’t) which need follow-up investigation, causing stress and anxiety.</td>
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Review the list below and consider what applies to you. Talk to your health care provider about your personal options before you move forward.

Why I might want to get tested:
- I am concerned that I might be at high risk for a certain type of cancer.
- The test for this cancer is proven to be effective.
- I am generally in good health.
- I like to know what is going on with my body.

Why I might not want to get tested:
- There is no test that is proven effective for the cancer I am worried about.
- I am in poor health and the testing may further complicate my health.
- I like to take it slow and don’t want to go digging for problems.
- I am an older person (age 70 and over) and therefore the tests results may be less accurate.
Testing for colorectal, cervical and breast cancers.

Currently in Canada, there are screening programs for three cancers: colorectal, cervical and breast cancer.

Your health care provider will recommend that you are tested for these cancers once you reach a certain age or if you are at high risk (e.g., have a first-degree family member who has or has had one of these cancers), even if you have no symptoms.
2. A **colonoscopy** is an examination of the lining of your rectum and colon using a long flexible tube with a camera on the end. A doctor can view the entire colon to see if there are polyps present. Polyps can be “pre-cancer” and are removed during the colonoscopy. This procedure requires that your colon and rectum be thoroughly cleaned out; bowel preparation begins the day before the procedure. Typically you will be sedated for this procedure.

3. A **flexible sigmoidoscopy** is similar to a colonoscopy but only examines the lower colon and rectum (where most cancers develop). This procedure requires some bowel preparation on the day of the procedure.

4. During a **double contrast barium enema**, barium (a thick fluid that shows up on an x-ray) is gently inserted into your rectum and a series of x-rays are taken to show a picture of your lower colon. This procedure requires the same bowel preparation as a colonoscopy.

5. A **CT colonography**, also called a ‘virtual colonoscopy’, uses a series of x-rays to make detailed images of the colon. These images show polyps and any other abnormal areas of the colon and rectum. This procedure requires the same bowel preparation as a colonoscopy. CT colonography is still being evaluated and is not currently recommended under Canadian guidelines.

What are the benefits of screening?

FOBT testing helps identify polyps before they become cancerous. There are virtually no symptoms in the early stages of colorectal cancer when the disease is most treatable. When caught early through regular screening, there is a 90% chance that colorectal cancer can be cured.
What is my chance of getting the disease and then dying from it?

In Canada, colorectal cancer is the third most common cancer diagnosed in men and women.

**Men:** 1 in 14 men is expected to develop colorectal cancer during their lifetime and 1 in 27 will die of it.

**Women:** 1 in 16 women will develop colorectal cancer during their lifetime and 1 in 31 will die from it.

**What is the current screening recommendation?**

Men and women age 50 and over should have a fecal occult blood test (FOBT) at least every 2 years.

Those at increased risk because of having one or more first-degree family members (e.g., parent, sibling, or child) with colorectal cancer or those with positive FOBT results should get a colonoscopy. Those with other risk factors (such as inflammatory bowel disease or known hereditary conditions) should design a personal surveillance strategy with their health care provider.

What are the risk factors for cervical cancer?

Our understanding of cervical cancer has changed significantly in recent years. Cervical cancer is now seen primarily as the result of a very common infection called **human papillomavirus (HPV)**. Some HPV types can cause ordinary and genital warts, but rarely cause cancer. Other HPV types can cause cancer of the cervix.

What are the tests available today?

1. **A Pap test** is an examination of your cervix by your health care provider. During the examination they will gently take a sample of cells with a small, soft brush. Although it can be uncomfortable, it should not be painful.

A **pelvic examination** may be performed at the same time as your Pap test. This allows your health care provider to feel your ovaries, fallopian tubes and uterus by inserting one or two gloved fingers into your vagina. With their other hand they will push gently on the lower part of your belly and check for any abnormalities. A pelvic examination is often performed to assist with the diagnosis of pelvic disease when you have complaints, signs or symptoms.

What are the benefits of screening?

Regular Pap tests can detect changes or abnormalities in the cells of the cervix before cancer develops. Early detection allows for treatment of pre-cancerous growths.

Cases of and deaths from cervical cancer have gone down by over 60% in the last 30 years, mostly due to screening using regular Pap tests. Having regular Pap tests and early treatment, if necessary, can prevent most cancers of the cervix.
What is my chance of getting the disease and then dying from it?

During their lifetime, 1 in 148 Canadian women will develop cervical cancer and 1 in 423 will die from it. This makes cervical cancer the eleventh most common cancer diagnosis in Canadian women.

What are the risk factors for breast cancer?

The two strongest risk factors for breast cancer are:

- **Gender**: being a woman;
- **Age**: being 50 years or older.

Taking hormone replacement therapy (HRT) has also been shown to increase the risk of developing breast cancer in some women.

What are the tests available today?

1. **A mammogram** is an x-ray of your breasts which provides a picture of the breast tissue.

   While mammograms can be very effective at detecting breast cancer, they can also produce “false positives”. These are results that tell you that you need to follow up with more tests but upon further investigation, turn out to be normal. This can be stressful for you. Your chance of having a false positive over 10 years of screening (5 mammograms) is about 1 in 4.

2. **A clinical breast examination** is a breast exam done by a health care provider. During the exam, your health care provider will feel your breast tissue and under your armpits for any lumps or abnormalities.

What are the benefits of screening?

Early detection of breast cancer greatly improves a person’s chance of survival. When breast cancer is caught in its earliest stages, the five-year survival rate for women under the age of 70 is 90%. Regular screening using mammograms has been proven effective in detecting cancer and reducing mortality in women ages 50-70.

What is my chance of getting the disease and then dying from it?

Breast cancer is the most common cancer diagnosed in Canadian women and, second only to lung cancer, is the most common cause of cancer death among this group. During their lifetime, 1 in 9 women is expected to develop breast cancer, and 1 in 28 is expected to die from it.
What is the current screening recommendation?

Women between the ages of 50 and 69 should have a mammogram every 2 years. Women over the age of 40 should have a clinical breast examination at least every 2 years.

Current controversies in breast cancer testing

- **Breast Self Exam (BSE):** Periodic exams of your own breasts using a set method on a particular schedule have recently been shown to cause many false alarms and do not make a big difference in health outcomes. For this reason, most recent recommendations are not in favour of BSE.

  What remains important is for all women to be “breast aware”. Women do not have to follow a particular schedule or routine to feel for changes. Women of all ages should to learn what is normal for their breasts and report any changes to their health care provider.

- **Testing in women between ages 40 to 50, and over 70:** Regular mammograms in average-risk women from 40 to 50 years of age save less than 1 life per 1000 and cause 450 false alarms. For women over 70 there is very little evidence to support testing. As you get older, more pressing health problems and personal priorities can greatly influence your decision to test.
Testing for cancers which do not have screening recommendations

If you have signs or symptoms that could indicate the presence of disease, your health care provider may recommend that you have certain cancer tests.

Knowing what changes in your body to watch for (signs or symptoms) can help you find disease early and increase your chance of survival.

The decision to be tested should be made after a discussion with your health care provider determines that the benefits of testing outweigh the possible downsides.

Read on to learn about some of the tests that may be used if you have signs or symptoms of prostate, testicular, ovarian, skin, or lung cancer.
The PSA test is probably the most controversial of all the cancer tests and, because of this, it is difficult to make a clear recommendation on testing. Review the following information before making your decision.

Here are the key issues that impact the decision to test:

- The PSA test is not as accurate as we would like.
  - 2 out of 3 men who have a high PSA will NOT have prostate cancer. They will usually require ultrasounds and biopsies to prove this.
  - Up to ¼ of men with low PSA actually have prostate cancer, particularly men over the age of 70.

- There are no definitive research results that can tell us whether testing for prostate cancer does, or does not, save lives.
  - There are ongoing trials now but they won’t give us answers for a few years.

- It is difficult to generalize about what usually happens to men with prostate cancer.
  - Most men diagnosed with prostate cancer will have slow growing cancer which probably won’t kill them. A much smaller group will have more aggressive prostate cancer that needs to be treated.
  - Those with fast growing cancer will benefit from the test but the majority (those with slow growing cancer) will not benefit and may have more stress and health complications from invasive testing.

Finding prostate cancer, especially in older men, may not increase lifespan.

- Studies of men over the age of 70 who had their prostates removed because of prostate cancer showed that they had a poorer quality of life and no difference in lifespan than those with prostate cancer who did not have surgery.
  - Because of this, for many older men with prostate cancer, the prescribed strategy will not be removal of the prostate or other treatments but “active surveillance” (assessing the prostate at periodic intervals).

What are the risk factors for prostate cancer?
The strongest risk factors for prostate cancer are:
- Age: being 50 years or older;
- Diet: notably one high in red meat and low in fibre, fruits and vegetables;
- Family History of prostate cancer;
- African ancestry.

What are the tests available today?

1. A digital rectal exam (DRE), during which your health care provider inserts a finger into your rectum to feel one side of your prostate for any abnormality. A normal prostate feels smooth and rubbery.
   - Cancers are often missed by this examination so even if your health care provider finds nothing, you may still have cancer. Some health care providers have stopped doing this test as the chance of finding cancer is low.

2. A prostate specific antigen (PSA) test is a blood test that measures the amount of a substance (PSA) in the blood.
   - PSA is produced by the prostate and is normally present in a man’s blood in very small amounts. High levels of PSA may indicate the presence of cancer although high levels can be caused by a large prostate and/or other prostate problem.
TO TEST OR NOT TO TEST?

The results of PSA testing vary significantly with men of different age groups. As you age, your risk of developing prostate cancer increases but so does your chance of getting a false-positive result on a PSA test. Given the stress and anxiety associated with a potential diagnosis of cancer, men in the older age group (70-80) may opt out of testing for prostate cancer.

What is my chance of getting the disease and then dying from it?

Other cancers are more deadly but prostate cancer is the most common cancer diagnosed in Canadian men. On average, a 50 year old man has a 15% chance of being diagnosed with prostate cancer by age 80. However, his chance of dying from prostate cancer over this 30 year period is only 1.4%.

What are the risk factors for testicular cancer?

The strongest risk factors for testicular cancer are:

• Delayed descent of the testicles (if not corrected early);
• Age, particularly between 15 and 40 years;
• Family or personal history of testicular cancer;
• Abnormal development of the testicle.

What are the tests available today?

1. **Clinical examinations**, where your health care provider can check your testicles for any changes or abnormalities.

If cancer is suspected, a biopsy or complete removal of one testicle may be necessary to confirm the diagnosis. You can still get an erection and have children with one testicle.

What is my chance of getting the disease and then dying from it?

Testicular cancer is uncommon overall, but is the most common cancer in young men, peaking between the ages of 25 and 29.

Early detection of testicular cancer likely increases a person’s chances of survival. With current treatments, outcomes are very favourable, with 5-year survival greater than 96%.

What is the current recommendation?

Know what is normal for your testicles (shape and texture) so that you will notice any changes and can report them to your health care provider. Your testicles should be soft, round and rubbery.

For men 15 to 40 years of age, your testicles may be checked at your periodic health exam. Men over age 15 should report any changes in shape and consistency to their health care provider.
What are the risk factors for ovarian cancer?

The strongest risk factor for ovarian cancer is family history. If you have a first degree relative (mother, sister, daughter, and/or aunt) who has had ovarian cancer, talk to your health care provider about your testing options.

Risk factors also include a family history of other types of cancer (breast, ovarian, endometrial, colon or pancreatic cancer).

What are the tests available today?

The following tests may play an important role in early detection, particularly for individuals at high risk, but have not been proven as screening tests.

A pelvic examination may happen at your periodic health exam, but the other tests listed below are typically reserved for high risk women or women with a few worrisome symptoms.

1. **A pelvic examination** is a physical examination during which your health care provider feels your ovaries, fallopian tubes and uterus by inserting one or two gloved fingers into your vagina. With their other hand they will push gently on the lower part of your belly and check for any abnormalities.

2. **A transvaginal ultrasound** involves having a transducer (probe) inserted into your vagina to produce images of your ovaries. This test cannot tell the difference between a cancerous and non-cancerous mass and therefore produces a high rate of false-positives.

3. **CA 125** is a tumour marker that leaks out of cancer cells and can be measured in the blood. For a woman at high risk of developing ovarian cancer, her CA125 is measured and then her levels are checked twice a year and compared to her baseline.

What is my chance of getting the disease and then dying from it?

During their lifetime, 1 in 72 Canadian women will develop ovarian cancer and 1 in 87 will die from it.

What is the current recommendation?

Speak with your health care provider if you experience symptoms that last for more than 2 weeks or are happening at least 12 times per month.

In its early stages, ovarian cancer may cause a wide range of symptoms, from back pain to constipation to fatigue, which are very common and can make it difficult to distinguish from the normal experience.

Pelvic or abdominal pain, increased urinary frequency or urgency, abdominal bloating, and difficulty eating (feeling full), although still common, are somewhat more specific to ovarian cancer.

This is the challenge of ovarian cancer as the symptoms can be hard to distinguish from the normal experience, yet many women have advanced cases of the disease at the time of diagnosis. Early detection increases a person’s chance of survival.
What are the risk factors for skin cancer?

There are two primary types of skin cancer: melanoma and non-melanoma. Persons with non-melanoma skin cancer are at higher risk for developing additional skin cancers. Melanoma, the rarest but most aggressive form of skin cancer, is responsible for about 3/4 of all deaths from skin cancer.

Risk factors for melanoma skin cancer include:
- Exposure to UV rays;
- Personal history of melanoma;
- Lots of moles, particularly atypical moles (dysplastic nevi);
- Family history of melanoma in more than one relative;
- Blond or red hair;
- Fair or freckled complexion;
- Severe sunburn during childhood.

Risk factors for non-melanoma skin cancer include:
- Age, particularly over 50;
- Fair or freckled complexion;
- Severe sunburn before the age of 20;
- Exposure to UV rays;
- Blond or red hair;
- History of keratoses (non-cancerous growths on the skin);
- Workplace exposure to a number of substances, including arsenic compounds and petroleum products;
- History of immune disorders;
- Severe skin damage, including burns.

What are the tests available today?

Individuals at risk should have regular clinical examinations, during which their health care provider can check their skin for any changes or abnormalities.

What is my chance of getting the disease and then dying from it?

Skin cancer, while common, only accounts for about 1.5% of all cancer deaths. Nearly all skin cancers occur in fair-skinned individuals who have been exposed to the sun, x-rays, or ultraviolet light for prolonged periods.

Men: 1 in 74 men will develop skin cancer and 1 in 284 will die from it.
Women: 1 in 90 women will develop skin cancer and 1 in 486 will die from it.

What is the current recommendation?

Pay close attention to a birthmark or mole that changes shape, colour, size, or surface. A new growth on your skin — pale, pearly nodules that may grow larger and crust over; red, scaly, sharply defined patches; or a sore that doesn’t heal — should also be monitored. You should have someone else check hard-to-see spots, such as your back or behind your ears. If you have noticed changes to your skin or are confused about what to look for, ask your health care provider.

With skin cancer, prevention is very important. Always wear sunscreen (15 SPF or more) and, when exposed to the sun, stay in the shade, wear tight knit clothing, a hat and sunglasses.

Most skin cancers can be cured if caught early enough.
What are the risk factors for lung cancer?

The strongest risk factors for lung cancer are:

- Smoking;
- Exposure to second-hand smoke;
- Working with materials such as asbestos, arsenic, nickel and petroleum products, especially if you are a smoker;
- Exposure to radon gas.

What are the tests available today?

If lung cancer is suspected after a physical examination and a discussion of your symptoms, your health care provider may recommend the following tests:

1. Imaging studies use x-rays, ultrasounds or other scanning techniques to look more closely at your lungs;
2. A sputum test involves having samples of the phlegm from your lungs checked for cancer cells;
3. Blood tests show different hormones and chemicals in your blood and may indicate whether cancer is present;
4. A biopsy is usually necessary to make a diagnosis of cancer. A biopsy involves having tissue removed from your lungs and examined under a microscope.

Even though lung cancer might be detected at an earlier stage by regular x-rays in cigarette smokers, studies have shown that there is no improvement in long term survival.

What is my chance of getting the disease and then dying from it?

Lung cancer, despite being the most preventable type of cancer, is the leading cause of cancer death in Canadian men and women.

Men: 1 in 12 men will develop lung cancer and 1 in 13 will die from it.
Women: 1 in 16 women will develop lung cancer and 1 in 18 will die from it.

What is the current recommendation?

Lung cancer is the most preventable of all cancers and you can take an active role in protecting yourself by not smoking and avoiding air quality hazards like asbestos, residential radon and second hand smoke.

Symptoms such as breathing problems, frequent lung infections, increased amount of phlegm or blood in your phlegm, chest pain and/or trouble swallowing should be discussed with your health care provider.
Learn more
To learn more, visit the following websites:

Canadian Cancer Society  www.cancer.ca
When you want to know more about cancer, visit the Canadian Cancer Society website or call their toll-free, bilingual Cancer Information Service at 1-888-939-3333.

Cancer Care Ontario  www.cancercare.on.ca
This website offers extensive screening information on breast, cervical and colorectal cancer. Click on “screening” at the top of the home page and follow the links to the topic you are interested in learning about.

Healthy Ontario  www.healthyontario.com
This is a website of the Ontario Ministry of Health Promotion, offering information and support on a variety of health issues. To find out about cancer, click on “conditions” at the top of the home page and follow the alphabetized links to the information you need.

Colon Cancer Check  www.coloncancercheck.ca
ColonCancerCheck is a collaboration between the Ontario Ministry of Health and Long-Term Care and Cancer Care Ontario. This website offers information and resources on colorectal cancer and methods of prevention and screening.

Note: All statistical information in this document was sourced from the Canadian Cancer Statistics 2008 (www.cancer.ca).