

Monitoring your health

This chapter is about keeping track of your health. First of all, we'll look at what you and your doctors should be looking for—the most important aspects of your physical and mental health. Next, we'll look at how that's done—the various tests and procedures used to make sure you're staying healthy and to spot problems that need attention.

This includes the tests you may have heard about—CD4+ cell counts and viral load tests. While those are critical to HIV care, there's a lot more to monitoring your health. We'll look at how your CD4+ cell counts and viral load fit into the overall picture.

CD4+ cell counts and viral load are especially important for deciding when to start anti-HIV treatment, and for monitoring your response to that treatment. We'll take a first look at those issues here, and revisit them at greater length in Chapter 10 (Treatments).



About the author

Paul MacPherson is an assistant professor of medicine and a specialist in the division of infectious diseases at the Ottawa Hospital General Campus. His clinical practice is primarily dedicated to the treatment of patients with HIV infection. He is also appointed to the department of biochemistry, microbiology and immunology at the University of Ottawa and is a staff scientist at the Ottawa Health Research Institute. His primary research focus is on understanding at the molecular level how HIV disables the immune system.

CONTENTS

- Why your health is monitored
- Monitoring your HIV infection
- Other things to monitor
- How your health is monitored
- Tests specific to women
- Tests specific to men

9

MONITORING YOUR HEALTH

Because each individual progresses at his or her own rate, and because loss of immune function can become evident in different ways, it is important that you see your doctor regularly.

Why your health is monitored

You should monitor your health and overall state of well-being on a regular basis. The saying, “an ounce of prevention is worth a pound of cure,” is particularly true if you are HIV-positive, whether or not you are on anti-HIV treatment.

Once inside your body, HIV slowly disables your immune system. While it infects and lives in CD4+ cells, it also affects many other immune cells and prevents your body from mounting a normal immune response. Without an intact immune system, you are not able to fight off other germs, including bacteria and other viruses that can make you sick. Without treatment, the length of time it takes HIV to destroy the immune system is different for different people, but on average it requires about eight to 10 years (see Chapter 2, HIV... the basics). Some people, however, progress much more rapidly while others progress very slowly, if at all. Because each individual progresses at his or her own rate, and because loss of immune function can become evident in different ways, it is important that you see your doctor regularly.

If you are *not* taking anti-HIV drugs, it is important that you and your doctor:

- monitor the effects of HIV on your immune system;
- watch for the appearance of life-threatening infections; and
- consider when to start therapy.

If you *are* taking anti-HIV drugs, you should still see your doctor regularly to:

- monitor for side effects;
- ensure that the drugs continue to work at preventing HIV from making new copies of itself; and
- watch for any drug resistance that might develop.

Monitoring your HIV infection

In order to monitor how HIV is affecting you and your immune system, your doctor will especially want to do blood tests to follow your CD4+ cell count and your viral load, as well as your overall state of health.

CD4+ cell count

One key component of your immune system is a type of white blood cell, called a T-cell. T-cells help recognize and destroy germs that can harm you. CD4+ cells (sometimes known as T4 cells) are a specific type of T-cell. CD4+ cells are crucial in co-ordinating your immune system and ensuring a number of other immune cells function properly (see Chapter 2, HIV... the basics). CD4+ cells are infected and killed by HIV. Initially, your body will be able to replace the lost CD4+ cells. But as HIV continues to make copies of itself and your overall immune system weakens, the CD4+ cell count will fall.

The CD4+ cell count, or simply CD4 count, is a measure of the strength of your immune system. A normal CD4+ cell count is generally between 500 and 1,500 cells per cubic millimetre (mm^3)—about the size of a pinhead—of blood. As with other tests, some people's CD4+ cell count may naturally fall above or below these values. The CD4+ cell count also fluctuates depending on how active your immune system is when the test is taken. Even tests done just 12 hours apart from each other can give different values. If one CD4+ cell count seems out of line with previous values, it may be worth repeating it. It is also a good idea not to measure your CD4+ cell count if you are feeling unwell or were recently vaccinated. Your immune response to the infection or vaccination may make your CD4+ cell count temporarily high or low.

Your CD4+ cell count will give you and your doctor a rough idea of how strong your immune system is. Values above 500 cells/ mm^3 generally indicate your immune system is strong enough to fight off most infections. Values between 200 and 500 cells/ mm^3 raise some concern: they indicate that your immune system is becoming weak, and that you are more vulnerable to infections. CD4+ cell counts below 200 cells/ mm^3 mean that your immune system is very weak and that you are at risk of developing life-threatening infections such as Pneumocystis pneumonia (PCP). If the CD4+ cell count drops to less than 100 cells/ mm^3 , there is a high chance that you will develop other severe infections such as a vision-threatening virus infection known as cytomegalovirus (CMV), or activation of mycobacterium avium complex (MAC) or the parasite toxoplasma. For more information on these infections, see Chapter 12, HIV-related infections and cancers.

Your CD4+ cell count will give you and your doctor a rough idea of how strong your immune system is.

9

MONITORING YOUR HEALTH

Generally, as long as the CD4+ cell count rises or stays above 200 cells/mm³, you will not be at high risk of becoming ill.

Your doctor will use viral load testing regularly to monitor your response to treatment. You should see a significant reduction in your viral load within four to six weeks of beginning anti-HIV drugs, an indication that the drugs are effective.

The CD4+ cell percentage shows what proportion of the total T-cells are actually CD4+ cells. CD4+ cells usually make up between 35 and 50 per cent (one third to a half) of your total T-cells. As the number of CD4+ cells declines, they will make up less and less of the total T-cell population, and your CD4+ cell percentage will decline.

Anti-HIV treatment greatly reduces the ability of HIV to make copies of itself. Once HIV is suppressed, it no longer attacks the cells of your immune system, and your CD4+ cell count will begin to rise. How fast and how high the CD4+ cell count increases varies from person to person and depends a great deal on how advanced your HIV infection was before drugs were started. Some people have a very modest increase in their CD4+ cell count; in others the CD4+ cell count returns to normal. Generally, as long as the CD4+ cell count rises or stays above 200 cells/mm³, you will not be at high risk of becoming ill. Your doctor will continue to monitor your CD4+ cell count to ensure it remains within a safe margin.

Viral load

The viral load is a measure of the amount of HIV in your blood. The viral load test measures the number of copies of HIV in a millilitre (mL)—about a tea-spoon—of blood. In untreated individuals, it varies widely: some people have viral loads of only a few hundred, while others may have viral loads greater than 100,000. Perhaps more than any other test, the viral load test may show significant changes over time in untreated people. With this test, it is especially important not to focus on any one number, but to look at the trend over time. Generally speaking, the higher the viral load, the faster HIV will disable the immune system. For this reason, a high viral load may prompt your doctor to suggest beginning anti-HIV drugs sooner than if you have a low viral load.

Anti-HIV treatment reduces HIV's ability to make new copies of itself. When you start effective anti-HIV treatment, your viral load should begin to decline. The goal of treatment is to maximally suppress HIV to the point that it can no longer be detected using our current tests. The lower level of detection for HIV in the blood is 40 to 50 copies per mL, depending on which test is being used. So, if your viral load is less than 50 copies/mL, it is undetectable. Keep in mind

9

MONITORING YOUR HEALTH

that undetectable does not mean there is no virus present. It simply means there are fewer copies of HIV than can be measured by our current technology.

Your doctor will use viral load testing regularly to monitor your response to treatment. You should see a significant reduction in your viral load within four to six weeks of beginning anti-HIV drugs, an indication that the drugs are effective. Once HIV is fully suppressed (that is, becomes undetectable) in your blood, viral load tests should continue to be done on a regular basis to ensure HIV remains suppressed.

Resistance testing

HIV can become resistant to anti-HIV drugs. Drug-resistant strains of HIV can be transmitted from person to person, and can be identified by resistance testing (also called genotypic testing). Before you begin anti-HIV treatment, your doctor will likely have already obtained a genotype of the HIV strain you were infected with. The genotype will indicate which anti-HIV drugs the virus is sensitive to and which ones it is resistant to. If your viral load does not reach undetectable levels or if it rebounds after reaching undetectable levels, your doctor will likely do another genotype test and consider changing your drugs. Another type of resistance testing, called phenotyping, is not widely available in Canada.

Other things to monitor

Whether or not you are taking anti-HIV drugs, you should remain aware of your overall state of health. Monitoring your health means more than monitoring the effects of HIV.

General health

Keeping an eye on your overall health is important for everyone, regardless of HIV status. It's even more important for HIV-positive people, since HIV can make you more vulnerable to conditions, both minor and major, that can affect nearly any part of your body.

Strive to maintain a healthy lifestyle. Getting an appropriate amount of rest, eating a balanced diet and exercising regularly will help you to feel healthy and strong.

Before you begin anti-HIV treatment, your doctor will likely have already obtained a genotype of the HIV strain you were infected with. The genotype will indicate which anti-HIV drugs the virus is sensitive to and which ones it is resistant to.

9

MONITORING YOUR HEALTH

**For people with HIV,
there is a greater risk
of acquiring sexually
transmitted infections.**

**Make sure that mental
health monitoring is
part of your regular
check-ups.**

Sexual health

Sex is a natural and regular part of life for most people. It can reduce stress, express intimacy and simply feel good. To maximize your pleasure, you should take an active role in maintaining your sexual health. For those with HIV, there is a greater risk of acquiring sexually transmitted infections and, if you get one, the symptoms may be more severe. On the other hand, some sexually transmitted infections do not always cause symptoms right away. If you are sexually active with different partners, you may want to be tested regularly for diseases such as gonorrhea, chlamydia and syphilis (see Chapter 7, Your sexual health).

Using condoms greatly reduces the risk of transmitting HIV to your partner(s), and will also protect you from sexually transmitted infections like gonorrhea and chlamydia. Keep in mind, though, that condoms will not necessarily protect you from all sexually transmitted infections. Syphilis, herpes and genital warts can all be passed on even if you always wear a condom.

Mental health

Depression and other mental health problems are common, and often go unrecognized and untreated. Everyone feels down from time to time, but if you feel low or hopeless for an extended period of time, be sure to discuss this with your doctor. Depression, as well as stress and anxiety, are too frequently ignored and will negatively impact your health and sense of well-being (see Chapter 6, Your emotional health).

Other mental health problems can sometimes be caused by the effects of HIV on the brain, or by certain life-threatening infections (see Chapter 12, HIV-related infections and cancers). These problems are now very rare, since they are preventable by proper care; they are usually only seen in people with very advanced HIV disease. Early symptoms of dementia caused by HIV or other infections can include difficulty thinking, remembering or concentrating, as well as problems with co-ordination and body movement. Other problems, such as depression, can cause similar symptoms. You should immediately let your doctor know if you notice anything unusual.

Make sure that mental health monitoring is part of your regular check-ups. Try to be aware of your mental state, your coping skills and how you deal with

stress. Difficulty coping can lead to excessive alcohol and drug use, both of which can further compromise your health.

Infections, cancer and other complications

As HIV disables the immune system, people are more likely to get infections that a healthy immune system would fight off. For example, the fungal infection PCP causes fever and breathing difficulties and generally occurs in people with a CD4+ cell count less than 200 cells/mm³. As the CD4+ cell count drops further, the parasite toxoplasma may reactivate in the brain, or the virus CMV may flare up in the eye causing blindness. In addition, certain cancers such as lymphoma are more common in people with HIV with lower CD4+ cell counts. These infections are described in more detail in Chapter 12, HIV-related infections and cancers. They can usually be avoided by keeping your CD4+ cell count high enough.

An immune system that has been disabled may also malfunction and attack the body by mistake: this is known as autoimmune disease. One relatively common autoimmune disease in HIV-positive people is called ITP, or immune thrombocytopenia purpura. This occurs when your immune system mistakenly destroys your platelets. Low platelets can put you at significant risk of bleeding.

You do not have to have a low CD4+ cell count to develop an autoimmune disease. It is therefore important that in monitoring your HIV infection, you keep track of more than just your CD4+ cell count and viral load. You should see your doctor regularly and watch for any complications that may arise from HIV.

Cardiovascular (heart) health

Heart disease can creep up on you slowly, but once present it can be difficult if not impossible to reverse. Monitor your cholesterol and blood pressure with your doctor and consider treatment if either is elevated.

Maintain good heart health by eating a low-fat diet and getting regular exercise. Smoking is a major contributor to heart disease. If you smoke, consider a smoking cessation program.

**Monitor your cholesterol
and blood pressure
with your doctor and
consider treatment if
either is elevated.**

9

MONITORING YOUR HEALTH

You should consider vaccination for hepatitis A and hepatitis B if you travel or have multiple sexual partners.

Diabetes

Diabetes has often been referred to as “the silent killer,” as people may develop high blood sugar without being aware of it. You should have your blood sugar checked regularly, especially as you get older, if diabetes runs in your family or if you are on anti-HIV treatment. The blood sugar test should be done in the morning before you eat anything. Your doctor may also request a blood test called a hemoglobin A1C, which provides a rough idea of your blood sugar levels over the past couple of months.

Hepatitis A, B and C

Hepatitis B and C are viral infections that can remain in your liver for many years and cause permanent damage, including cirrhosis and liver cancer. Hepatitis A, another viral infection of the liver, is usually cleared by your immune system and only very rarely causes permanent damage. However, it can make you quite sick for a few weeks. If you already have hepatitis B or C, getting hepatitis A on top of that can be serious. Blood tests can check whether you have any of these infections (see Chapter 12, HIV-related infections and cancers).

If you do not have hepatitis B, consider getting vaccinated to protect against getting it in the future. You should especially consider vaccination for hepatitis A and hepatitis B if you travel or have multiple sexual partners. Unfortunately, there is no vaccine for hepatitis C. If you have tested positive for hepatitis B or C, you should get a referral to a hepatitis specialist.

How your health is monitored

Symptoms

Your doctor will monitor your health in a number of ways. First, he or she will ask how you have been feeling lately, whether you have been having any symptoms and, if so, when they started. These could include things like fevers or night sweats, diarrhea, headaches or losing weight unexpectedly.

Your doctor will likely ask if you have noticed any changes or problems yourself, then follow up with some specific questions about things you may

9

MONITORING YOUR HEALTH

not have mentioned. Be sure to take your time and answer honestly. Not every ache and pain is abnormal, but let your doctor know about anything persistent, that seems out of the ordinary, or is a definite change from the way you used to feel. You can make a note of any changes to your health in your personal health record (see page 317) so you don't forget to mention things to your doctor.

Physical examination

Next, your doctor will examine you. This may or may not occur with every visit. If you are feeling well and have no symptoms, your doctor may not examine you or may only look for a few specific things. Physical exams may be more frequent if you have just been diagnosed or if you mention that you have noticed any changes. For an especially thorough exam, you may be asked to undress and wear a hospital gown. In any case, your doctor should describe any concerns and what action he or she will take to follow up.

The physical exam generally begins with your vital signs: your pulse, blood pressure, breathing rate and temperature. Next, your doctor will likely look in your ears, eyes and mouth for any signs of infection, and feel the lymph nodes in your neck, armpits and groin. Your doctor will listen to your heart by placing a stethoscope on your chest and then listen to your lungs by placing the stethoscope at various places on your back as you breathe in and out. To examine your abdominal organs, your doctor will place his or her hands on your stomach and press, lightly at first and then more firmly. The edges of your liver and spleen may be felt with the fingers or identified by tapping on your stomach just below the ribs. Your nervous system may be examined by checking your reflexes and strength as well as your balance. Finally, your doctor may have a look at your skin for any rashes or new lesions.

Depending on whether you have been sexually active and whether you have symptoms, your doctor may also examine your genitals. For women, this means having a look at the outer labia (the outer lips of the vagina) for any sores or lesions. Then your doctor will insert a speculum to see the inside of the vagina and the cervix. For men, your doctor will examine the end of the penis for any discharge, and the shaft of the penis for sores or lesions. Next, your doctor will gently squeeze the scrotum just above the testicles to see if

Let your doctor know about anything persistent, that seems out of the ordinary, or is a definite change from the way you used to feel.

Physical exams may be more frequent if you have just been diagnosed or if you mention that you have noticed any changes.

9

MONITORING YOUR HEALTH

By looking at the levels of the substances that are carried in the blood, blood tests can tell you and your doctor a lot about how well your body's organ systems are working.

there are any signs of tenderness or inflammation. The testicles are also felt to be sure there are no lumps or bumps.

For more information on tests specific to men and women, see pages 119 and 120.

Blood tests

Blood is made up of many different kinds of cells suspended in a clear fluid called plasma. Blood transports oxygen from your lungs, nutrients from your digestive tract and hormones from your glands to cells and tissues throughout the body. It transfers waste products to the kidneys and liver for elimination. Your blood also carries important proteins to allow for clotting, and antibodies that help fight off infections.

By looking at the levels of the substances that are carried in the blood, blood tests can tell you and your doctor a lot about how well your body's organ systems are working. They may also help confirm a diagnosis that was suspected based on symptoms and the physical exam.

If you are interested, ask your doctor to explain your test results in a way that you can understand. Do not get too caught up in the numbers, but instead keep some of the following points in mind:

- Test results are compared to a normal range, which is a range of values within which the majority of healthy people would fall. Some people naturally have test results above or below the normal range, so the important thing is to identify what is normal for you.
- Keep an eye out for trends. Test results will normally vary from time to time but should generally stay within the normal range. Consistently rising or falling test results suggest that something is going on.
- Test results can vary from one lab to another. It is generally a good idea to have your blood work done at the same lab every time so changes in results can be more easily identified.
- Test results can be wrong. Try not to let a single abnormal, unexpected result worry you too much. Instead, consider repeating the test before making significant treatment decisions.

Common blood tests

Below is a list of the most common blood tests. For all of these tests, a small amount of blood (generally 5 to 10 mL—a couple of teaspoons) is taken from a vein in your arm and sent to the lab.

Complete blood count (CBC) The CBC is one of the most common tests, and can alert you and your doctor to a number of health problems. Results outside the normal range can suggest the presence of infections, poor nutrition or specific diseases of the blood. Because blood cells are made in your bone marrow, abnormal results may also suggest problems with the marrow, such as infection or drug side effects. The CBC is actually made up of several different tests:

- **White blood cell count** This test measures the total number of white blood cells (your immune system cells) in a sample of your blood. A high number may suggest the presence of an infection, while a low number could suggest problems with your bone marrow.
- **Differential** There are several different types of white blood cells. These include cells called neutrophils, lymphocytes and monocytes, each of which has different functions. The differential tells your doctor how many of each cell type are present in your blood. Increases or decreases in the numbers can suggest different problems.
- **Red blood cell count** Red blood cells, which give blood its red colour, contain iron and transport oxygen from your lungs to other tissues. They also transport carbon dioxide from the tissues back to the lungs where you breathe it out. The red blood count tells you how many red blood cells are present in a sample of your blood.
- **Hemoglobin** Red blood cells contain hemoglobin, a molecule that binds iron in your red blood cells to allow for the transport of oxygen. Even if you have enough red blood cells, you may not have enough hemoglobin. Low hemoglobin is called anemia and can leave you feeling tired, short of breath or pale in appearance.

9

MONITORING YOUR HEALTH

Common blood tests

- **Platelet count** Platelets help your blood to clot. When the platelet count is very low, you may bruise easily, bleed for longer than usual when cut or injured, experience frequent bleeding of the gums or develop a skin rash.

Urea and creatinine Urea and creatinine are normal waste products formed by the chemical processes in cells. They are filtered out of the blood by the kidneys and excreted into the urine. A build-up of urea and creatinine in the blood suggest that the kidneys may not be functioning normally.

Electrolytes Electrolytes, including sodium, potassium, chloride and calcium, are dissolved in your blood and must remain in balance. Severe vomiting or diarrhea can deplete electrolytes from your body making you feel weak or confused.

Liver function tests Liver function tests include a number of different tests. Together, these will indicate the overall health of your liver.

- **Transaminases** The transaminases (aspartate aminotransferase, or AST, and alanine aminotransferase, or ALT) are enzymes contained within the cells of the liver. When the liver is damaged by alcohol, drugs or infections like hepatitis B or hepatitis C, liver cells die and release these enzymes into the blood. Raised levels of AST and ALT in the blood indicate the presence of liver inflammation.
- **ALP (alkaline phosphatase) and GGT (gamma-glutamyl transpeptidase)** A branching system of ducts collects a substance called bile from your liver and channels it to your gall bladder. Raised levels of ALP and GGT in the blood can indicate that these bile ducts are injured.
- **Bilirubin** When red blood cells die, a chemical called bilirubin is produced. Normally, it is filtered from the blood by the liver and excreted in the bile. If bilirubin builds up in the blood, it can make

Common blood tests

your eyes and skin look yellow (this is called jaundice). Things that can cause the bilirubin to rise in the blood include increased red blood cell death, liver damage or a block in the bile ducts causing a backup of bile. Some drugs, such as the anti-HIV drug atazanavir (Rayataz), can also increase the level of bilirubin by slowing down the rate that the liver removes it from the blood.

- **Albumin** Albumin is a protein that is made in the liver and circulates in the blood. Low levels of albumin can indicate severe malnutrition or poor liver function.
- **INR** The INR (for international normalized ratio) is a measure of how quickly your blood can clot. Clotting proteins are made by your liver and so a slow clotting rate can indicate decreased protein synthesis by your liver.

Blood sugar The sugar (glucose) in your blood is the major source of energy for your cells. Your body normally keeps blood glucose levels within a narrow range. When the glucose in your blood is abnormally high, which occurs in diabetes, it can cause damage to cells and tissues. High blood sugar levels are increasingly being seen in people on anti-HIV drugs and may require a change of therapy, dietary changes or additional medications. Your blood glucose levels are best measured first thing in the morning before you have something to eat. Another way to check for diabetes is to measure the hemoglobin A1C, which provides a rough idea of the blood sugars over the past few months.

Lipids Cholesterol and triglycerides are two major kinds of fat found in the body. Elevated LDL (low-density lipoprotein or “bad”) cholesterol is associated with heart disease and hardening of the arteries. HDL (high-density lipoprotein or “good”) cholesterol helps to clear “bad” cholesterol from the bloodstream; higher HDL levels are good for heart health.

- **Cholesterol** The cholesterol in your blood comes from your diet and from what is manufactured by your own body. High levels of

9

MONITORING YOUR HEALTH

Common blood tests

cholesterol, especially the “bad” LDL cholesterol, are known to lead to heart disease. Anti-HIV drugs can also raise your cholesterol levels. If your cholesterol is high, your doctor may encourage you to exercise and adopt a low-fat diet in an attempt to bring it down. If this fails, you may need to consider taking cholesterol-lowering drugs.

- **Triglycerides** Triglycerides are another form of fat found in your blood. While you need some, too much is a bad thing. Anti-HIV drugs can increase your triglycerides as well, so levels should be monitored when people are on therapy.

Other tests

Urinalysis Testing your urine is another way to measure how well your kidneys are functioning. Your kidneys filter your blood, retaining important nutrients and excreting waste products into the urine. A routine urinalysis tests for things that should not be present in the urine, such as blood, protein, glucose (sugar) and white blood cells.

Culture If your doctor suspects you have an infection, a sample of your blood, stool, urine, phlegm (sputum), pus, spinal fluid or other tissue may be sent to the lab for culture. Technicians try to grow germs from your samples. This process can take several days. If there are bacteria or other germs present in the sample, they can be identified. Some germs grow very slowly and may require several weeks to be identified.

Serology Some germs cannot be grown in culture. However, your doctor can check your blood to see if you have antibodies to these germs.

Biopsy Having a biopsy involves removing a small sample of your tissue (such as skin, lymph node or liver tissue) and examining it under the microscope. A specialized doctor called a pathologist will examine these tissue samples for abnormalities, germs or cancer.

Scopes Fibre optics has allowed doctors to create scopes, long flexible tubes that can be used to see inside various parts of your body. An endoscope, inserted through the mouth, can be used to examine the stomach. A colonoscope, inserted through the anus, can be used to examine the large intestine. A bronchoscope, inserted through the mouth and down the windpipe, can be used to look inside the lungs.

X-rays X-rays also allow your doctor to view inside your body. A chest X-ray can reveal abnormal tissue densities in the lungs caused by pneumonia or cancer.

CT scan (CAT scan) and MRI These scanning machines create images of the inside of your body. A specialized doctor called a radiologist will examine these images to look for abnormalities in the organs and tissues.

Bone scan Thinning of the bones (osteopenia and osteoporosis), commonly seen in older people, especially women past menopause, has been found in some people with HIV, especially those who have been HIV-positive for a long time. Bone scans can be used to measure bone density, predict the risk of fractures and gauge whether any additional treatment is required. Such scans are not yet standard practice for people with HIV, although some people now argue that they should be.

Tests specific to women

The Pap test (or smear) is a screening test that looks for abnormal cell growth in the cervix (the entrance to the uterus) often caused by the human papillomavirus (HPV). Some abnormalities are mild and will go away on their own. Other abnormalities may suggest a more significant problem and the potential to develop cervical cancer (see Chapter 15, Women and HIV).

Women with HIV are at a higher risk of developing cervical abnormalities and cervical cancer, and should therefore have an annual Pap test. If any abnormalities are found, your doctor may do follow-up Pap tests more frequently. To do a Pap test, your doctor will use a speculum to open the vagina and examine the cervix. A brush is used to collect cells from the surface of the cervix; these cells are then sent to the lab for examination.

Women with HIV are at a higher risk of developing cervical abnormalities and cervical cancer, and should therefore have an annual Pap test.

9

MONITORING YOUR HEALTH

**Men with HIV are
at increased risk of
developing anal cancer.**

There is also evidence that anal cancer, which like cervical cancer is caused by HPV, is also more common among women with HIV. Ways to check for anal cancer include having your doctor use a finger to feel for abnormalities, having an anal Pap test or having a scope inserted in the anus to look for cancerous lesions. There are, however, no standard recommendations as to best practice. Tests for anal dysplasia (abnormal cells in the anus) are not routinely available throughout Canada; however, your doctor may know if a research project involving anal Pap tests is recruiting in your area.

There is no evidence to suggest that breast cancer is any more common in women with HIV than in HIV-negative women. It is generally recommended that all women over the age of 50 have an annual mammogram.

Tests specific to men

The prostate lies just in front of the rectum and below the bladder (see Chapter 7, Your sexual health). Semen from the testicles and urine from the bladder both pass through the prostate on their way out of the body. As men age, the prostate tends to enlarge and this can make peeing difficult. Prostate cancer can also develop, again more commonly in older men. Finally, sexually transmitted infections that usually appear in the penis can travel up to and infect the prostate, causing pain and discomfort. With this in mind, your doctor may choose to examine your prostate. To do so, he or she will insert a gloved finger with some lubricant into your anus and feel the prostate. Your doctor will assess the size of the prostate and feel for any tenderness or bumps.

Men with HIV are at increased risk of developing anal cancer. Anal cancer in men has been associated with the human papillomavirus (HPV). Ways to check for anal cancer include having your doctor use a finger to feel for abnormalities, having an anal Pap test or having a scope inserted in the anus to look for cancerous lesions. There are, however, no standard recommendations as to best practice. Tests for anal dysplasia (abnormal cells in the anus) are not routinely available throughout Canada; however, your doctor may know if a research project involving anal Pap tests is recruiting in your area.

