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CD4, viral load & other tests

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NAM is a charity that publishes information for people affected by HIV and those working with them. We believe information helps people to make decisions about, and be in control of, their lives, health and treatment options.

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CD4, viral load & other tests

This booklet provides information on tests you'll have at your HIV clinic to monitor your health. Some of these tests are to see how HIV is affecting you. Other tests are to monitor your general health. You can expect to have some of these tests every time you have a check-up at your clinic. Other tests will only be undertaken if they are needed.

The information in this booklet isn't intended to replace discussion with your doctor about your HIV treatment and care or test results. However, it may help you to decide what questions you'd like to ask your doctor about your treatment and care.

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Part one:
Health monitoring

The importance of regular health monitoring

1

The outlook has never been better for people with HIV in the UK. The right HIV treatment and care can mean that you have a good chance of living a long and healthy life, with a near-normal life span.

To make sure that you receive the most appropriate treatment and care, it's very important that you go to your HIV clinic for regular check-ups. If you are entitled to National Health Service (NHS) care, then all the treatment and care you receive from your NHS HIV clinic will be free.

2 Types of tests

There are a number of types of tests that you might have. The most common are:

Physical examinations – your doctor will look at your body and examine it to look for any unusual signs or symptoms.

Blood tests – samples of blood will be taken and these will be examined in a laboratory. These tests are used to assess how HIV is affecting you, how well any treatment is working and to check your general health. Often your doctor will order several different blood tests. It may look like you're having a lot of blood taken, but only about a teaspoon of blood is taken in each test tube.

X-rays, scans, ultrasounds – if you have some specific symptoms, then you may need to have tests such as X-rays, scans or ultrasounds that allow your doctor to see inside your body.

Small surgical procedures – very occasionally it may be necessary to remove a small sample of body tissue for examination in a laboratory. This is called a biopsy and it's normal to have this done using a local anaesthetic.

Your first visit to your HIV clinic

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Your first appointment at a specialist HIV clinic after your diagnosis (or if you change clinic) will involve questions about your health and medical history, a physical examination, and blood tests.

Your doctor will probably ask you to provide details about the following:

- If you currently have any other serious illness, or have had any in the past.
- If you currently have any symptoms.
- If there are health conditions that affect you or members of your family: for example, heart disease, diabetes, high blood pressure, mental health problems and cancers.

- If you are currently taking medicine or drugs. This includes medicines prescribed by a doctor, those bought over the counter, alternative and herbal remedies and recreational drugs.
- If you have had any vaccinations.
- If you have any allergies.
- If you smoke, exercise and what your diet is like.

You may also be asked about your sex life. For example, whether you have a regular partner, how many casual partners you have, the gender of your partners, if you use condoms, and if you

have had any sexually transmitted infections. This information will help your doctor provide you with information about how you can protect your own health and the health of other people.

At your first visit, you are also likely to have a physical examination. You'll have to remove some clothing for this. You can ask to see a doctor of the same sex, or for a third person to be present.

Most examinations will include checks on your height, weight, temperature, blood pressure and pulse. Your doctor will lightly press into your abdomen to feel for any abnormalities and use a stethoscope to listen to your breathing and heartbeat. It's

also likely that your doctor will look into your ears, eyes, mouth and throat.

If you report any symptoms then your examination will include a detailed check on these.

After you have been examined, you'll have some blood tests. The blood tests that you will have are discussed in the next section. If you have symptoms then you may be asked to provide other samples. For example if you have a cough, you may be asked to provide a sputum sample, or if you have diarrhoea, a stool sample. These will be checked in a laboratory for signs of infections.

Regular clinic appointments

At each visit you'll have tests to see how HIV is affecting you and to check on your general health. If you're on HIV treatment, the tests will also look at how well the treatment is working. On other occasions, for example if you are feeling unwell or have some symptoms, you might need to have other tests as well.

GPs

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Your HIV clinic will closely monitor all aspects of your health that are related to HIV. However, it's also important to register with a GP who will be able to look after your general health needs that aren't related to HIV. Your HIV clinic may have a list of GPs, or you can call NHS Direct on 0845 4647 who will be able provide you with details of GPs in your area.

The NHS Patient Advice and Liaison Services (PALS) can also provide help and advice on using health services. Visit their website at www.pals.nhs.uk for more information.

6 Sexual health screening

If you're sexually active it's a good idea to have regular tests for sexually transmitted infections. These are available free of charge from specialist sexual health or genitourinary medicine (GUM) clinics.

Some HIV clinics now include sexual health screens as part of their routine HIV care. Other clinics only provide specific tests, for example, regular blood tests for syphilis.

See NAM's booklet *HIV & Sex* for more information on sexual health check-ups and common sexually transmitted infections and their treatment. You can find out where your nearest GUM clinic is on NAM's website at www.aidsmap.com.

Cervical and anal screening

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Infection with certain strains of a common virus called 'human papillomavirus', or HPV, can cause cell changes in the cervix that can lead to cervical cancer. All HIV-positive women should have a cervical screening test soon after they are diagnosed with HIV. You should then have a repeat test at least once a year.

Some strains of HPV can also cause cell changes in the anus. But the value of regular anal screening is much less certain.

Other monitoring tests for these cancers and pre-cancerous cell changes include a colposcopy and an anoscopy. A colposcopy examines the cervix with a microscope under a very bright light, while an anoscopy

does the same for the examination of the anus. These procedures are also used in treating any abnormal cells found; these will be removed either by using chemicals or by burning or freezing them.



Part two: **Common tests**

Some tests give a straightforward result, such as the presence of an infection. But others are looked at in combination with other aspects of your health and lifestyle.

Many blood tests have a 'normal' or 'standard' value or range of results. It's important to remember that 'normal' can vary depending on a range of factors, including age, weight, gender, and test method. If your test result is outside the normal range, it may only mean that it would be a good idea to investigate further.

Your doctor will always look at your results based on you as an individual and take your characteristics and situation into account in deciding what to do next. Sometimes that

might simply be to repeat the test, or watch and wait for any further change.

Blood tests to monitor your HIV – CD4 cell count and viral load

There are two key blood tests that monitor how HIV is affecting you.

Your CD4 cell count gives an indication of the health of your immune system.

Your viral load measures how much HIV there is in your blood.

Looking at the results of these tests will inform important decisions such as when to start HIV treatment and to monitor how well your anti-HIV drugs are working.

10 CD4 cell counts

CD4 cells (sometimes called T-cells, or helper cells) are white blood cells that organise your immune system's response to infections.

Your CD4 cell count is the measurement of the number of CD4 cells in a cubic millilitre of blood (a very small blood sample), not your whole body. Your doctor will probably just talk about your CD4 cell count as a number.

The CD4 cell count of a person not infected with HIV can be between 450 and 1600. But CD4 cell counts can vary a lot between people. For example, women tend to have higher CD4 cell counts than men.

Your own CD4 cell count can also vary and can go up and down in response to stress, smoking, the menstrual cycle, the contraceptive pill, recent physical activity, or even the time of day. It will also go down if you have an infection or illness.

So rather than attach too much significance to an individual test result, it makes good sense to monitor the trend in your CD4 cell count over time. It's also best to have your CD4 count measured at the same clinic and at roughly the same time of day wherever possible. If you have an infection, such as the flu or an outbreak of herpes, it is best to delay your CD4 count until you are feeling better.

If you have a relatively high CD4 count, no symptoms and you are not taking anti-HIV drugs, your CD4 count will only be measured once every three or four months (or every six months if it is very high).

However, if your count has been falling rapidly or you are taking part in a clinical trial your doctor may suggest that your count is monitored more often.

The frequency with which your CD4 count is monitored after you start HIV treatment will depend on your clinic and how high your CD4 cell count is. As a general rule, you can expect to have it checked every three to six months and more frequently if you have symptoms or become unwell.

What your CD4 cell count can predict

Without HIV treatment, your CD4 cell count will probably gradually decline over time.

Monitoring your CD4 cell count will help you and your doctor make important decisions about your HIV treatment and care.

CD4 cell count of 350 – start HIV treatment

If someone's CD4 cell count falls to 350, it is usually recommended that they start taking HIV treatment. Starting HIV treatment when your CD4 cell count is around 350 has been shown to have a

number of advantages compared to waiting until your CD4 cell count is lower. The immune system is more likely to recover to normal levels in people who start treatment when their CD4 cell count is around 350.

Starting treatment when your CD4 cell count is around 350 also means that you are very unlikely to become ill because of HIV. It has also been shown to reduce your risk of developing other serious illnesses as well, such as heart, kidney and liver disease as well as some cancers.

So your doctor will start talking to you about treatment at this stage.

CD4 cell count of 200 or below – start HIV treatment and take other treatment to prevent infections

If your CD4 cell count is 200 or below, you should seriously think about starting treatment, as you have a risk of developing some serious illnesses.

You'll also need to start taking other treatment to reduce the risk of these illnesses developing. This is called prophylaxis. You can safely stop taking prophylaxis once your CD4 cell count increases. For example, you might be given antibiotics to prevent PCP, a type of pneumonia.

For more information, see the NAM booklets *Anti-HIV Drugs* and *HIV Therapy*.

Your CD4 cell count when you're taking HIV treatment

Once you start taking HIV treatment, your CD4 cell count is likely to increase gradually. The rate at which this happens can vary a lot between individuals. In some people, it can take months or even years for their CD4 cell count to climb towards normal levels. If you started treatment with a low CD4 cell count, it's more likely to take a long time for your CD4 cell count to climb. But it's good to know that even quite small increases in your CD4 cell count can have big health benefits.

Your doctor will monitor your CD4 cell count, along with your viral load, every three to six months once you are on treatment.

CD4 percentage

In addition to using a test to count the number of CD4 cells you have, doctors sometimes measure the proportion of all white blood cells that are CD4 cells. This is called a CD4 cell percentage. In HIV-negative people, the CD4 cell percentage would be around 40%.

Having a CD4 cell percentage of around 14% is thought to indicate the same risk of becoming ill as would a CD4 cell count of 200.

One circumstance when your doctor might measure your CD4 cell percentage could be if there is a big variation in your CD4 cell count between one test and the next.

14 Viral load

Viral load is the term used to describe the amount of HIV in your blood. The more HIV there is in your blood (and therefore the higher your viral load), then the faster your CD4 cell count will fall, and the greater your risk of becoming ill.

Viral load tests measure the amount of HIV's genetic material in your blood. The results of a viral load test are described as the number of copies of HIV RNA in a millilitre of blood. But your doctor will normally just talk about your viral load as a number. For example, a viral load of 10,000 would be considered low; 100,000 would be considered high.

Your viral load if you are not taking HIV treatment

If you are not taking HIV treatment, your viral load will be monitored at your regular HIV clinic appointments. This is because the level of your viral load can provide important information about the way that HIV might affect your health if it is left untreated. Amongst people with the same CD4 cell count, those with a high viral load tend to lose CD4 cells and become ill faster.

When you're not taking HIV treatment, the level of your viral load can fluctuate between tests. Often increases in your viral load are nothing to worry about. Even a doubling in your viral load might not be significant.

Vaccinations, such as a flu injection, and infections can cause a temporary increase in your viral load. Your doctor should take this into consideration when looking at your results.

Like your CD4 count, it's best to look at the trend in your viral load over time. When viral load results over several months show a continuing increase, or when the increase is greater than threefold, there may be a cause for concern.

For example, an increase from 5000 to 15,000 shouldn't cause you to worry when you are not on treatment. A rise from 50,000 to 100,000 may not be significant – it's still within the margins of error for the

test. But a rise from 5000 to 25,000 is significant. It represents a fivefold increase in the amount of virus in your blood since your last viral load test.

Your doctor will probably want to confirm this trend with a repeat test.

When you're thinking about starting HIV treatment, one of the factors your doctor will discuss with you is your viral load. As mentioned earlier, it is recommended that people start HIV treatment when their CD4 cell count is around 350. One group of people who are particularly recommended to start treatment at this time are those with a viral load of 100,000 or more.

Viral load if you are taking HIV treatment

Your viral load should start to fall once you start HIV treatment. The aim of HIV treatment is an undetectable viral load. Your viral load should have fallen to undetectable levels within three to six months of starting HIV treatment.

Once you have started treatment, your doctor will check your viral load a month later, and again twelve weeks after your treatment started. Then your viral load will be monitored every three to six months, along with your CD4 count.

Undetectable viral load

All viral load tests have a cut-off point below which they cannot reliably detect HIV. This is called the limit of detection, and the tests used in the UK have a lower limit of detection of either 40 or 50 copies/ml. If your viral load is below 40 or 50, it is said to be 'undetectable'. And the aim of HIV treatment is to reach an undetectable viral load.

But just because the level of HIV is too low to be measured doesn't mean that HIV has disappeared from your body. It might still be present in the blood, but in amounts too low to be measured. Viral load tests only measure levels of HIV in the blood, which may be different from the viral load in other parts of your body, for example in your gut.

Why it's good to have an undetectable viral load

Having an undetectable viral load is desirable for a number of reasons.

First of all, it means that you have a lower risk of becoming ill because of HIV. It also reduces your risk of developing some other serious illnesses as well. There is now good evidence that HIV itself can increase the risk of cardiovascular disease (illnesses like heart disease and stroke).

Secondly, having an undetectable viral load means that the risk of HIV becoming resistant to the anti-HIV drugs you are taking is very small.

Finally, having an undetectable viral load reduces the risk of you passing on HIV to someone else. This is discussed in more detail later in this booklet.

Detectable viral load if you are taking HIV treatment

If your viral load hasn't fallen to undetectable levels within three to six months of starting HIV treatment, then your doctor will discuss with you changing your anti-HIV drugs.

If you are taking HIV treatment and your viral load falls to undetectable, but then becomes detectable again in later tests, you will probably need to change your HIV treatment.

Having a detectable viral load when you are taking HIV treatment can mean that your HIV will become resistant not only to the anti-HIV drugs you are taking, but also to other similar drugs as well.

Resistance tests

Before you start HIV treatment or change your anti-HIV drugs because of a detectable viral load you should have a resistance test.

These are blood tests that can tell which anti-HIV drugs have the best chance of working for you.

The results of resistance tests are most accurate if your viral load is 200 or above.

For more information, see the NAM booklet *Adherence and Resistance*.

Viral load blips

People with an undetectable viral load sometimes experience what are called 'blips' in their viral load. Their viral load increases from undetectable to a low but detectable level before becoming undetectable again on the next test.

Viral load blips do not necessarily show that your HIV treatment is no longer working.

There are a number of theories about the reasons for blips. These include 'errors' at the testing lab or having an infection like a cold or the flu. One study found that blips

were more likely to happen in winter, which might support the theory that infections are a possible cause.

If your viral load is detectable on two consecutive tests, then it's a good idea to discuss with your doctor possible causes and whether you need to change your treatment.

Viral load and sexual transmission of HIV

If you have a high viral load in your blood, then you might also have a high viral load in your semen or vaginal fluid. People with high viral loads are more infectious to other people.

As well as reducing viral load in your blood, HIV treatment also reduces viral load in semen and vaginal fluid.

There's been a lot of debate recently about the infectiousness of people who are taking HIV treatment and who have an undetectable viral load in their blood.

This is a controversial subject and new information is becoming available all the time. You can keep up with the latest developments by visiting NAM's website www.aidsmap.com.

Viral load and mother-to-child transmission of HIV

HIV treatment is very effective at preventing mother-to-child transmission of HIV. If you are pregnant, or thinking about becoming pregnant, then it's a good idea to discuss your HIV treatment options with your doctor.

If you have an undetectable viral load while you are pregnant and at the time of delivery, then the risk of you passing on HIV to your baby is very low, but it is very important that your health and viral load, and that of your baby, are monitored while you are pregnant, and after you have given birth.

Every time you visit your clinic you'll have some blood tests. As well as being used to monitor your CD4 cell count and viral load, these will help your clinic monitor your general health.

If you're taking HIV treatment, some of these tests can also give an indication of whether you're developing side-effects. There's a lot more information on side-effects in the NAM booklet, *Side-effects*.

Some tests can also tell if you have certain infections.

A lot of the tests discussed below are routine – that means that you'll have them every time you have blood tests at your

clinic. Some others you'll only have if they are needed.

It's generally best to look at the trend in results over time rather than focusing too much on one result. Your doctor will discuss the results of your blood test with you to help decide the best course of treatment.

The tests described below have been grouped together according to what they are looking at. For example, all the tests that look at the health of your liver are grouped together.

We haven't provided information on the normal ranges of such results. This is because these can differ depending on your

age, gender, and even the measurements used by the testing laboratory.

Blood chemistry

A full blood count will look at:

- a **red blood cell count**, which measures haemoglobin, the substance that allows your red blood cells to carry oxygen around your body. If your haemoglobin is too low you are said to have anaemia. Haemoglobin levels are often a bit lower in people with HIV and anaemia is more common than in the general population.
- a **platelet count** – these cells clot the blood. People with HIV often have fewer platelets than average, although this generally doesn't cause problems.

- a **white blood cell count**. This is a measure of the total number of immune white blood cells. These cells are part of the immune system and defend against infections and foreign materials.

People with HIV often have slightly lower levels but, again, this isn't usually a problem.

Blood fats or lipids

Cholesterol and triglycerides are blood fats, often called lipids. There are two types of cholesterol – low-density lipoprotein, or LDL cholesterol (sometimes called 'bad cholesterol') and high-density lipoprotein, or HDL cholesterol (sometimes called 'good cholesterol'). High lipids have been linked to

an increased risk of cardiovascular disease (illnesses such as heart disease and stroke). Having low levels of HDL cholesterol has also been linked to cardiovascular problems and can be a marker of a risk of other serious illnesses as well.

At your clinic appointments, you may have tests including, 'total cholesterol' – this is a measure of the total level of cholesterol in your blood.

But it's important to also look at the levels of LDL cholesterol and HDL cholesterol. Another test looks at the ratio of 'good' HDL cholesterol to 'bad' LDL cholesterol, calculated by dividing your total cholesterol by your HDL cholesterol levels.

Your levels of triglycerides, another lipid, will also be regularly monitored.

If your cholesterol or triglyceride levels are too high, your doctor will talk to you about how you can lower them. This is likely to start with lifestyle changes, such as changing your diet and losing weight, increasing exercise or stopping smoking. But there are also drugs (called statins) that lower cholesterol as well.

24 Other tests

Bones

HIV can cause a thinning of the bones, and loss of bone density is also a possible side-effect of some anti-HIV drugs.

Blood tests can look at the chemistry of your blood and the results of the tests listed below can be used to monitor the health of your bones:

- Calcium
- Phosphate
- Total protein
- Albumin
- Globulin

Bone density will also be measured using a scan – see later in this booklet for more information on scans.

Diabetes

Diabetes is a disease where the amount of glucose (blood sugar) in the body is too high because the body cannot process it properly. Blood tests can be used to see if you have diabetes or have an increased risk of developing it. Some anti-HIV drugs have been associated with an increased risk of Type 2 diabetes; the risk is lower with the drugs most commonly used in the UK today. The risk of developing Type 2 diabetes also increases with age for everyone.

The level of glucose in your blood can be measured. Measuring levels of the enzyme amylase is also important and can also show how healthy your pancreas, the organ that produces insulin, is.

If you have diabetes, your doctor will also monitor your kidney function closely (see below).

Kidney tests

Having healthy kidneys is important to everyone. HIV itself can damage your kidneys, and some anti-HIV drugs can also cause side-effects that affect the kidneys. So monitoring the health of your kidneys is an important part of your HIV care.

A number of tests are used to check how your kidneys are working. These include measuring a number of minerals and waste products your kidneys should be removing from your body:

- Sodium
- Potassium

- Chloride
- Urea
- Creatinine

A sample of your urine should be checked every year to monitor levels of urinary protein.

Liver tests

Liver disease is an important cause of illness and death in people with HIV, so the health of your liver should be regularly monitored.

The range of tests you'll have will check levels of enzymes in your liver. These include:

- Bilirubin
- Alanine aminotransferase (ALT)
- Alkaline phosphatase

Some viruses can cause liver disease and are common in people with HIV. Hepatitis A can cause a short illness. But infection with hepatitis B or hepatitis C (or both) can cause long-term, serious liver disease. Vaccines are available against hepatitis A and hepatitis B and it's recommended that everyone with HIV should receive them.

You should be tested at regular intervals to see if your vaccinations against hepatitis A and B are working. You should also be tested soon after your diagnosis with HIV to see if you've been infected with hepatitis C, and should have regular tests after this if you're at risk of contracting hepatitis C.

See NAM's booklet *HIV & Hepatitis* for more information.

Investigations

If you have particular symptoms or are unwell, then your doctor might request additional tests to try and find out the cause. Some of the more common of these are described here.

Samples

On occasion you may be asked to provide a urine, stool or sputum sample. These will be looked at in the laboratory to see if there are any infections or other abnormalities.

X-rays, scans and ultrasounds

These are all painless, non-invasive ways of seeing different parts of the body.

X-rays have a number of uses and are often used to check for broken bones or problems within the chest or abdominal cavities.

Looking at an X-ray will help your doctor diagnose a number of illnesses. Chest X-rays are quite a common procedure used to look at the heart, lungs and chest wall. They can help diagnose the cause of various symptoms, such as coughs or shortness of breath. Your doctor may ask you to have a chest X-ray if they suspect you have a chest infection or tuberculosis (TB).

Sometimes your doctor may request a scan.

There are two main types of scan:

- a CT (computerised tomography) scan
- an MRI (magnetic resonance imaging) scan.

These can help diagnose cancers and illnesses affecting the head, chest, abdomen and lymph nodes. MRI scans are used to look at HIV's effects on the brain and changes in body fat distribution. Sometimes, you may be given a liquid called a 'contrast agent' (either by drinking it or via an intravenous drip), that highlights specific areas of the body in the scan.

Another type of scan is a DEXA (dual X-ray absorptiometry) scan. It's useful for diagnosing thinning bones and for looking for

the fat loss that some older anti-HIV drugs can cause.

An ultrasound examination is used most often to examine the abdomen, or stomach, area. It involves having an instrument placed against the surface of the abdomen and moved around the area. It's used to check on the development of a baby in the womb and can also be used to help diagnose problems with organs such as the liver, stomach, kidneys, pancreas and spleen.

A special type of ultrasound scan can be used to check the health of the liver. It is called a *Fibroscan* and involves having an instrument placed against the abdomen over the liver.

Other procedures

If your doctor feels they need more information to diagnose or treat a health problem you have, they may recommend you have other procedures done. Some of these can be a bit more invasive, but generally don't involve surgical procedures or need you to stay in hospital. They are usually carried out during an outpatient appointment and you can go home afterwards.

If you are offered a sedative, you may have to wait at the hospital a bit longer before you can leave. You will be advised not to drive, nor to go back to work that day. You may need to have someone to take you home and stay with you for some hours after the procedure.

Bronchoscopy

This can be used to investigate chest problems. Your doctor may suggest this if you have a cough, are short of breath, or have had an abnormal chest X-ray.

It involves the use of a bronchoscope – a flexible tube that has a light and camera on it and allows a doctor to look at your bronchial tree (breathing tubes) and lungs.

Before you have a bronchoscopy, you'll be offered some sedation, such as valium, and have a local anaesthetic sprayed onto the back of your throat. The bronchoscope is then passed through a nostril and down into the lungs. Fluid is washed down to obtain

samples that can be used to diagnose lung infections such as TB or pneumonia.

A small sample of tissue (a biopsy) may also be removed during the procedure, for examination in a laboratory.

Colonoscopy

This test can be used to investigate problems in your colon, or large intestine (bowel), such as bad diarrhoea or bleeding.

It involves the use of a colonoscope. This is a thin flexible instrument with a light and a camera on it that allows a doctor to look at the rectum and colon. It can also be used to take tissue samples (biopsies) that can be examined in a laboratory.

You may need to be on a particular diet for a day or two beforehand, or you may be asked not to eat anything for some hours. You'll be asked to take a laxative before the procedure. The colonoscope is passed up through the anus into the rectum and into the colon. It is not painful, although some people find it uncomfortable. You will usually be given a sedative to help you relax.

Endoscopy

An endoscope is also a tube with a light and a camera attached. It is used to look at different parts of the body. It is normally put in through an opening such as the mouth or the anus, but sometimes a small incision will be made to insert it.

The most common use for an endoscope is to do a gastroscopy, used to investigate problems with the gullet, stomach or bowel. Your doctor might recommend a gastroscopy if you often have indigestion or heartburn, vomiting, stomach pain or difficulty swallowing.

The endoscope is passed through the mouth, down the gullet and into the stomach.

It's important not to eat or drink for some hours before this procedure as the stomach has to be empty. You will be told how long to fast for.

You will be given the choice of a sedative before the procedure, a local anaesthetic

spray, or both. The procedure is generally painless but might be uncomfortable at the moment you swallow the tube.

Biopsy

A biopsy can help diagnose some symptoms or illnesses further if the procedures described above are not adequate. A biopsy involves having a small amount of tissue removed that is then examined in a laboratory.

Sometimes a biopsy is taken when having another investigation, for example a bronchoscopy or endoscopy. At other times it will be taken by using a hypodermic needle or it will be necessary to have a small surgical procedure after having a local anaesthetic.

Biopsies can be done on a wide range of organs, including the skin, the liver, kidneys, bone marrow, the intestines, the rectum and the cervix.

32 Summary

- Your CD4 cell count gives an impression of the health of your immune system.
- Monitoring your CD4 cell count can help you and your doctor decide when you need to start HIV treatment.
- Viral load is the term used to describe the amount of HIV in your blood.
- CD4 cell counts and viral load can vary naturally - you and your doctor should look at trends, not single results.
- The aim of HIV treatment is a viral load which is so low that it cannot be detected by currently available tests ('undetectable').

- Having a low viral load decreases the risk of passing HIV on to your baby during pregnancy and childbirth, and decreases the risk of HIV transmission to your sexual partner(s).
- Your HIV clinic will perform blood tests regularly to monitor your CD4 count, your viral load and other indicators of your health.
- If you or your doctor are concerned about particular test results, or if you are experiencing symptoms or side-effects, you may have other blood tests, scans or investigations done. These will provide more information to help guide decisions about your health and treatment.
- Your doctor and the person performing the tests should explain these to you, and you should be able to ask any questions you have before they begin.

34 Glossary

anoscopy A procedure to examine the anal canal.

biopsy Removing a small sample of body tissue for examination in a laboratory.

colposcopy A procedure to examine the cervix.

CD4 A molecule on the surface of some cells onto which HIV can bind. The CD4 count roughly reflects the state of the immune system.

cervix The neck of the womb.

human papillomavirus (HPV) a very common virus, which can be sexually transmitted. It is often symptomless and harmless, but some strains can cause warts, and some strains can lead to certain cancers.

immune system The body's mechanism for fighting infections.

prophylaxis A treatment taken to reduce the risk of an illness developing.

stethoscope An instrument used in listening to the sound of the heart and lungs.

viral load Measurement of the amount of virus in a sample. HIV viral load shows the extent to which HIV is reproducing in the body.



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What did you think of this booklet?

NAM wants to make sure this booklet is useful to you. We would be grateful if you could take a minute to provide us with some valuable feedback. The questionnaire is anonymous and confidential.

As a result of reading this resource have you learnt anything about HIV, your health and treatment?

- I have learned nothing new
- I have learnt something but it's not particularly useful to me
- I have learnt something that is useful to me
- I have learnt something that seems vitally important to me

Please tell us in your own words what you have learnt:

.....

.....

.....

As a result of reading this resource I am more likely to:
(tick all that apply)

- Discuss my treatment and care with my healthcare team
- Feel more confident talking to my healthcare team
- Feel better equipped to take decisions regarding my treatment and care
- Feel more informed about HIV treatment and living well with HIV
- Find other information and support, if I need it
- None of the above

Please tell us if there is anything else you are more likely to do or feel as a result of reading this booklet:

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Please tear off this page and post it to: NAM, FREEPOST LON17995 London, SW9 6BR. Alternatively you can complete the questionnaire at www.aidsmap.com/feedback, where you can also try our HIV treatment and health knowledge quiz, which will help ensure you have all the information you need to get the best out of your health care or treatment.

We would like to ask you a few more questions. You don't have to answer these, but if you do, it will help us make sure our information is relevant and useful to our readers.

Please circle the description that best describes you

- I am: male / female / transgender
- I live: in London / in the UK but outside London / outside the UK (please specify)
- My ethnic background is: White / Black-Caribbean / Black-African / Black – other /
Indian or Pakistani or Bangladeshi / other Asian or oriental / other or mixed
- My HIV status is: unknown / negative / positive
- (If positive) I think I got HIV as a result of: sex between men / sex between men and women / injecting drugs /
from blood or blood products / mother-to-child transmission /
other / don't know / rather not say
- I work: in the HIV field / not in the HIV field / I do not work at the moment
- I got this booklet from: nurse / doctor / clinic / THT's HIV Health Support Service /
support group / friend / family member / NAM /
other (please specify)

**Thank you very much for taking the time to fill in this questionnaire.
NAM really values your feedback. It helps make the information we provide better.**

If you have any other comments on the content of this booklet please email info@nam.org.uk

HIV helplines

THT Direct

from the Terrence Higgins Trust

telephone 0845 1221 200

opening hours Monday-Friday, 10am-10pm
Saturday & Sunday, 12pm-6pm

African AIDS Helpline

telephone 0800 0967 500

opening hours Monday-Friday, 10am-6pm

HIV i-Base Treatment Phonenumber

telephone 0808 800 6013

opening hours Monday-Wednesday, 12pm-4pm

NAM information series for HIV-positive people

The booklet series includes: ■ adherence & resistance ■ anti-hiv drugs ■ clinical trials
■ hiv & children ■ hiv & hepatitis ■ hiv & mental health ■ hiv & sex ■ hiv & stigma
■ hiv & women ■ hiv therapy ■ hiv & tb ■ nutrition ■ side-effects

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NAM Information Forums

Free meetings offering an opportunity to hear the latest news, views and research around HIV treatments. Held in the evening at a central London location. **Call NAM for details.**

HIV Health Support Service

NAM supports THT in providing one-to-one and group skills sessions on health and treatments to people living with HIV in London. **Call THT Direct for details.**



www.aidsmap.com

NAM

Lincoln House
1 Brixton Road
London
SW9 6DE
UK

tel +44 (0) 20 7840 0050

fax +44 (0) 20 7735 5351

email info@nam.org.uk

website www.aidsmap.com

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