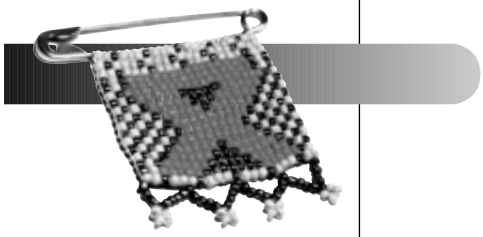


CHAPTER 1

Understanding HIV and AIDS

CHAPTER 1

Contents

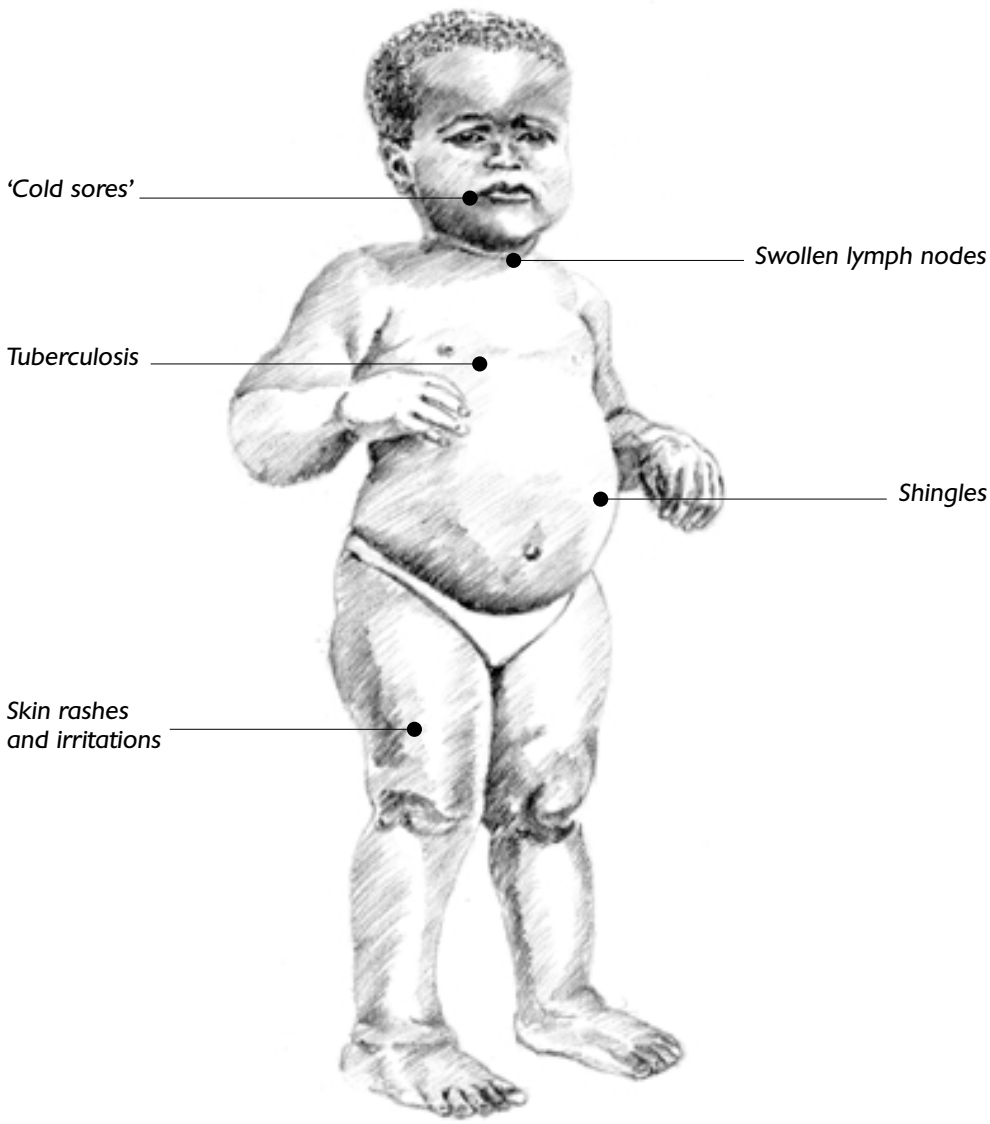
1.1 What are HIV and AIDS?

Today AIDS is probably one of the most widely talked about illnesses in history. Everybody has heard about HIV and AIDS. But unfortunately many people still do not understand the real cause of AIDS, what can be done to prevent it and how HIV can be treated. There are many untrue stories about HIV and AIDS, but the character and causes of the illness are, in fact, easy to understand.

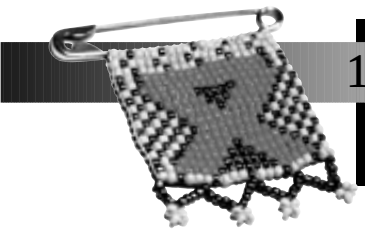
HIV is short for the **Human Immuno-deficiency Virus**. HIV is a virus that is only found in human beings, and it attacks and slowly damages the body's **immune system** (its defence against infections and diseases).

HIV causes AIDS. HIV severely damages a person's immune system, so that the body can no longer fight off infections and other diseases. When this happens, you get a group of particular medical conditions called **'AIDS-defining conditions** or **illnesses'** and we say that you have developed **Acquired Immune Deficiency Syndrome (AIDS)**.

For more on the different stages of HIV, see 1.6 on page 22.



HIV damages the body's ability to fight off infections and diseases.



1.2 Where did HIV and AIDS come from?

In 1981, doctors first started to see signs of a new illness amongst gay men in the United States of America. These men had developed unusual conditions, like a rare chest infection and skin disorders, and special tests showed that their immune systems were damaged.

In 1983, French researchers identified a new virus, now known as HIV, as the cause of AIDS. This type of HIV also became known as 'HIV-1'.

In 1985, a second type of HIV was identified in sex workers from Senegal. This virus, called 'HIV-2', is found mostly in West Africa, and seems to be less easily **transmitted** (passed on) and slightly less harmful than HIV-1.

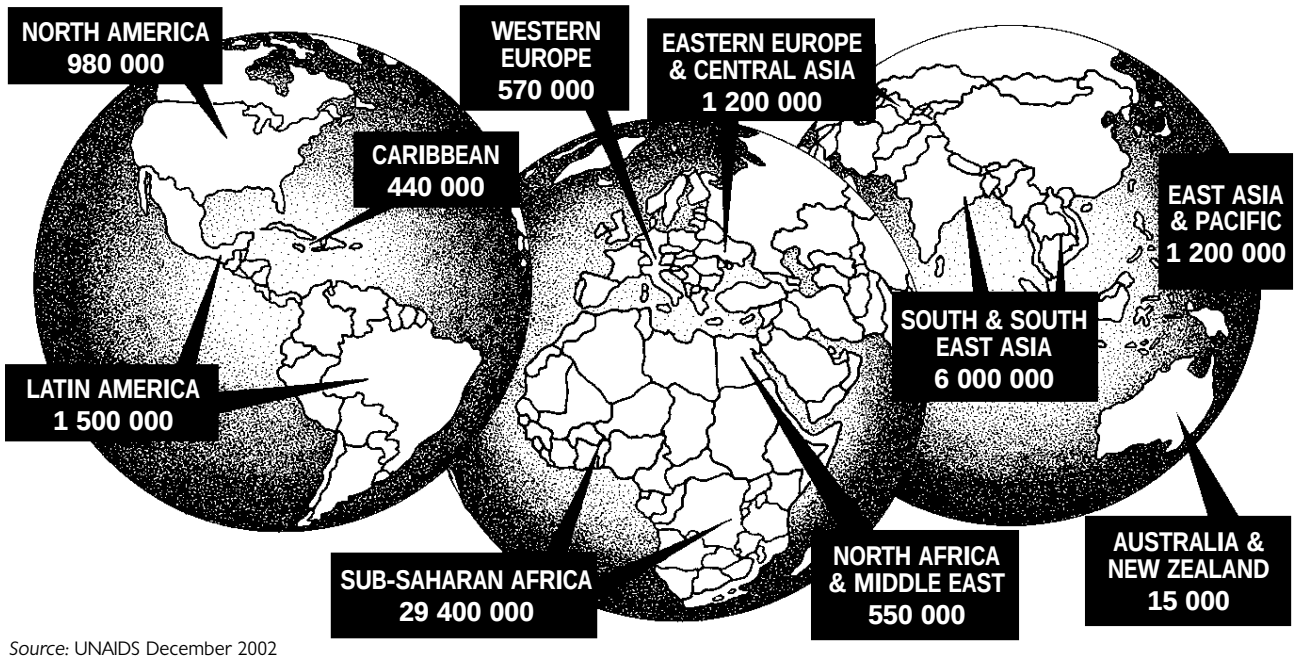
Scientists have since found out that there are also many different strains or subtypes of HIV. In South Africa, subtype C is most common.

The early cases of AIDS were observed in gay men. After that, major epidemics were seen in another **marginalised** group – injecting drug users in Western Europe, South East Asia, China and India.

But HIV and AIDS is not a disease of gay men or injecting drug users. HIV is mainly transmitted by different kinds of sexual behaviour, or through accidental **exposure** to blood or other body fluids that are infected with HIV.

HIV spreads fastest in conditions of poverty. Thus 70% of people living with HIV are in Sub-Saharan Africa, where **transmission** of HIV is mostly **heterosexual**.

ESTIMATED NUMBER OF PEOPLE LIVING WITH HIV OR AIDS – DECEMBER 2002



Source: UNAIDS December 2002

HIV CAUSES AIDS

During 2000, South African President Thabo Mbeki's public statements casting doubt on whether HIV causes AIDS resulted in a lot of uncertainty. People were wrongly led into believing that poverty may be a major cause of AIDS, rather than poverty leading to conditions where HIV spreads faster.

Remember:

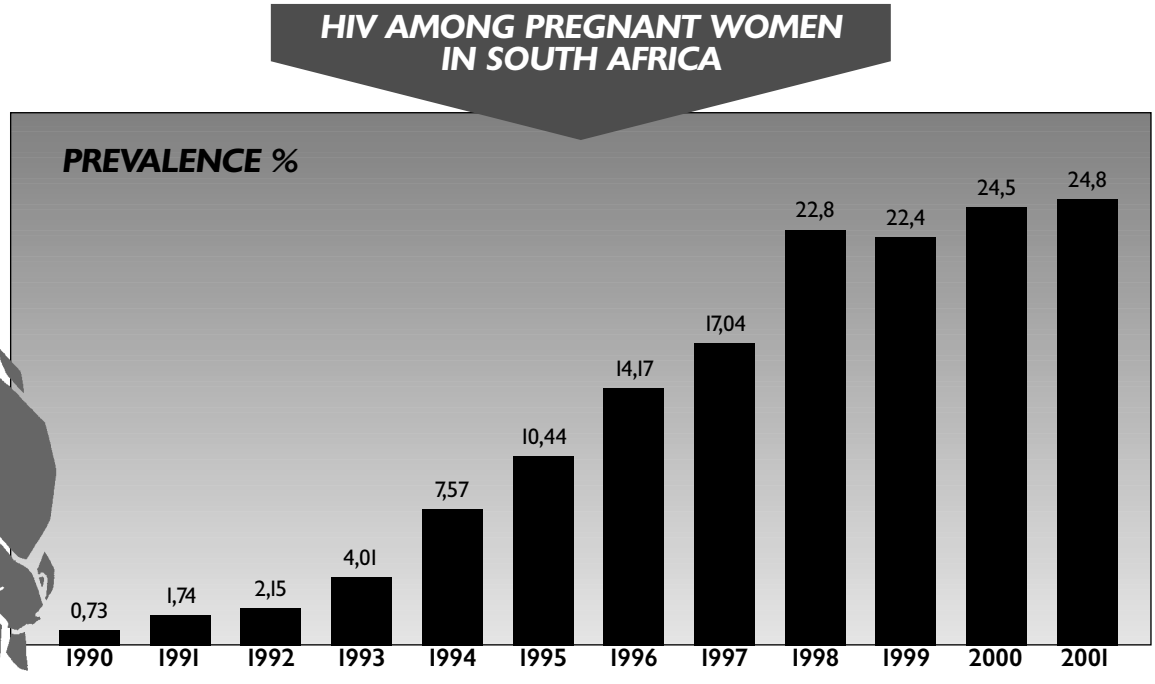
HIV is the cause of AIDS. The link between HIV and AIDS is backed up by strong scientific proof:

- *People from different backgrounds and lifestyles all over the world have developed AIDS – the thing that they had in common was that they were infected with HIV.*
- *New treatments that reduce the amount of HIV in the blood have stopped people from developing AIDS.*

For more on the link between HIV/AIDS and poverty, see 2.1.3 on page 33.

In South Africa, the vast majority of HIV infections are due to heterosexual sex. South Africa has about 11% of the world's people living with HIV and one of the fastest growing epidemics in the world. HIV/AIDS will have a major effect on national development, communities and individuals for decades. By 2001 it was estimated that over 4,74 million people in South Africa were living with HIV – in other words, 1 in every 9 men, women and children.

The graph below shows how the numbers of pregnant women with HIV (prevalence %) has risen since 1990.



Source: Department of Health, 2001

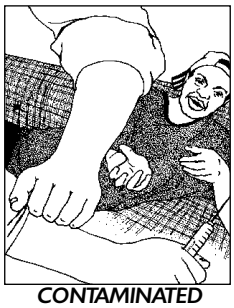
1.3 How is HIV transmitted?

COMMON FORMS OF HIV TRANSMISSION IN SOUTH AFRICA

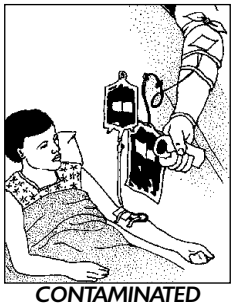
UNPROTECTED SEX

BREAST-FEEDING

GIVING BIRTH



CONTAMINATED NEEDLES SHARED BY DRUG USERS



CONTAMINATED BLOOD

HIV is only passed on by these body fluids:

- Blood
- Semen
- Vaginal and cervical fluids
- Breast milk.

HIV is usually transmitted from one person to another when one of these fluids goes into another person's body.

GUIDELINES

MAIN TYPES OF HIV TRANSMISSION IN SOUTH AFRICA

1. *Through unprotected sexual intercourse*
2. *From an infected mother to her child during birth or breast-feeding*
3. *Through contaminated (infected) needles shared by drug users*
4. *Through contaminated blood products (now rare because of blood screening).*

HIV TRANSMISSION THROUGH UNPROTECTED SEX

By far, the most common route of HIV transmission is through unprotected sexual intercourse – so every sexually active person who does not have ***safer sex*** *is at risk of getting HIV.*

However, besides these 4 ways, HIV is very difficult to transmit:

- Many people with HIV have naturally continued to have sexual relationships. If they have had safer sex, they have not passed on HIV to their partners.
- There are no cases of a person with HIV passing on HIV to other employees through day-to-day contact at work.
- There are no known cases of young children passing on HIV to playmates at school.
- Domestic workers have not passed HIV to people they work for.
- HIV is not passed on by mosquitoes.
- There is a very low risk of doctors or nurses getting HIV from patients. Only about 1 in every 300 needlestick injuries passes on HIV.
- There is an extremely low risk of passing on HIV through sporting accidents.
- HIV is not passed on through saliva when kissing.

1.4 Can you prevent HIV transmission?

WAYS OF PREVENTING HIV TRANSMISSION

- *You can abstain from (not have) sex.*
- *You can have safer sex.*
- *You can get treatment for sexually transmissible diseases (STDs).*
- *You can take **universal precautions** when you touch blood or body fluids.*
- *You can take **post-exposure prophylaxis** (treatment) immediately after an exposure to HIV.*
- *Mothers can take **anti-retroviral therapy** to cut down the risk of passing HIV on to their unborn babies.*
- *Medical researchers hope that one day we may have an HIV **vaccine** to prevent people from getting infected with HIV.*
- *Researchers also hope that we may develop a vaginal **microbicide** that can be used to prevent HIV from getting passed on during sexual intercourse.*

GUIDELINES

1.4.1 SAFER SEX

Some safer sex practices are:

- Always using a male or female condom when you have sex.
- Staying faithful to only one uninfected partner.
- Sex without penetration (eg *ukusoma* or thigh sex).

1.4.2 UNIVERSAL PRECAUTIONS

In some places, there is a small danger of coming into contact with HIV-infected blood, like in a hospital, a dangerous work environment or a boxing ring. The risk of passing on HIV is still small and can be eliminated by using universal precautions.

UNIVERSAL PRECAUTIONS

EXAMPLES

- *Everyone should wear rubber gloves when dealing with blood.*
- *All blood spills should be cleaned up immediately.*

1.4.3 POST-EXPOSURE PROPHYLAXIS

Needlestick injury

Research has shown that taking anti-retroviral therapy immediately after an accident (like a needlestick injury) can greatly decrease the risk of getting infected with HIV.

Current thinking is that anti-retroviral therapy should be given as post-exposure prophylaxis within 72 hours of the accident.

Although the risk of getting HIV from a needlestick injury is low (about 1 in 300 injuries), most people want to do as much as they can to decrease the risk of HIV infection. The Government recommends the use of post-exposure prophylaxis after a needlestick injury, and it provides this treatment free to health care workers.

FACTORS AFFECTING THE RISK OF TRANSMISSION

- *The **viral load** of the infected person (amount of HIV in the blood)*
- *The amount of fluid involved*
- *The kind of injury (eg a deep or a shallow cut).*

Accidents and sporting injuries

Accidents happen at schools and on sporting grounds, and people are often very worried that this can pass on HIV. The risk of becoming infected through these kinds of injuries is extremely low. In fact, there has been only one reported case of HIV transmission through a sporting injury. It is now standard practice to keep sportsfields and boxing rings 'blood-free'.

Rape and sexual assault

People who are raped or sexually assaulted are at higher risk of getting infected with HIV, especially because rape is violent and there is often tearing and bleeding. The worry of HIV infection adds more stress to an already traumatic event. People who are raped or sexually assaulted can prevent HIV infection by taking anti-retroviral therapy immediately after the incident.

For more on rape, see 8.5 on page 192.

POST-EXPOSURE PROPHYLAXIS AFTER RAPE

- *Most health care workers recommend offering post-exposure prophylaxis to women after a rape, whether or not the alleged rapist's **HIV status** is known.*
- *In April 2002, Cabinet resolved to make post-exposure prophylaxis available to all rape survivors and those who had been sexually abused.*
- *Provinces have started to carry out the Cabinet resolution, but the service is still not available countrywide at the time of the manual going to print.*

1.4.4 MOTHER-TO-CHILD TRANSMISSION

Recent research has shown that giving an anti-retroviral drug called AZT to mothers before they give birth, greatly decreases the risk of passing HIV on to the baby (called **mother-to child-transmission – MTCT**).

Three research reports are important:

- The 076 Study showed a reduction of MTCT by nearly 70% after using AZT.
- A Thailand study used a shorter course of AZT, and showed about a 50% reduction in HIV transmission.
- A Ugandan and South African study using an even cheaper drug, Nevirapine, showed that this drug is also effective in reducing MTCT.

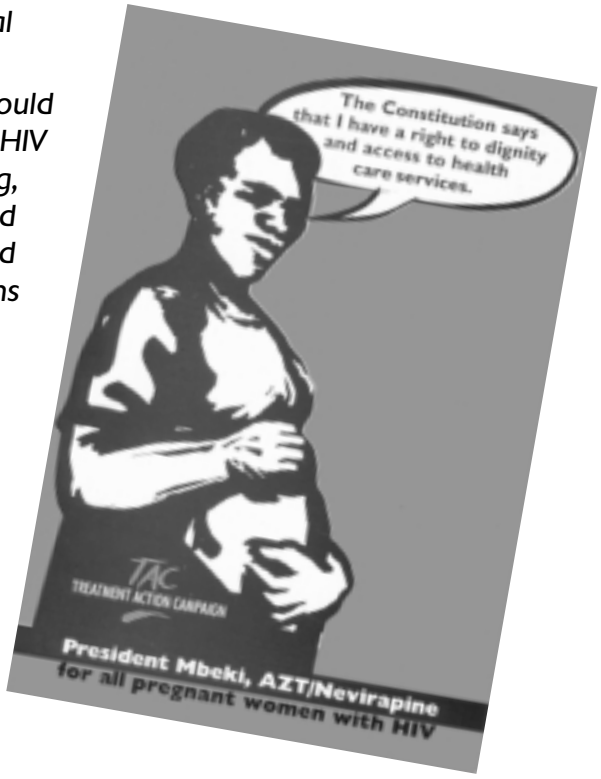
The Joint United Nations Programme on HIV/AIDS and the World Health Organisation have recommended the use of anti-retroviral therapy, including Nevirapine, as a minimum standard package of care for all mothers with HIV, to prevent mother-to-child transmission of HIV. The South African Government has still not introduced the use of Nevirapine as a standard treatment for preventing mother-to-child transmission.

On these studies, see References and resource materials on page 27

See Introducing this manual page iii for an update on MTCT in South Africa

THE NEED FOR MTCT PREVENTION PROGRAMMES

- *Programmes to prevent mother-to-child-transmission are very important, and access to anti-retroviral treatments is vital.*
- *These programmes should also include access to HIV testing, and counselling, so that women can find out their HIV status and make the best decisions for themselves.*
- *Women also have a right to information about the risk of HIV transmission through breast-feeding.*



1.4.5 HIV VACCINE RESEARCH

Many scientists believe that one of the best long-term hopes for preventing HIV/AIDS will be developing a vaccine that prevents HIV infection. This is especially important in South Africa, where expensive treatments are not available to most people living with HIV or AIDS. These scientists believe that it is possible to develop an HIV vaccine, and they hope to do this by 2007.

A vaccine is a medicine (usually an injection) that prepares the body's immune system to recognise and protect against a virus or disease.

POLIO

- *When you are given a vaccine for polio, the immune system responds and goes 'on alert'.*
- *Then if you are later exposed to polio, the immune system is ready to fight off the disease.*

A new vaccine will have to go through **clinical trials** with human beings before we can see how useful and safe it is. A clinical trial is a research study used to decide the benefits and risks of a new vaccine or treatment.

VACCINE TRIALS

- *Many HIV vaccines have been tested in the first steps of a clinical trial, but at the moment only one vaccine is in the final step of a clinical trial.*
- *Most vaccine trials have been done in developed countries, and most of the vaccines are based on subtypes of HIV that are found in developed countries. Only two African countries – Kenya and Uganda – have done vaccine trials.*
- *The Medical Research Council will start an HIV vaccine trial in South Africa in mid-2003, and the vaccine that will be used is based on the most common local type of HIV (subtype C).*

1.4.6 MICROBICIDE RESEARCH

The rise in HIV infection among women has highlighted the lack of research into methods of HIV protection that are within the personal control of women. Scientists are now also doing research on microbicides to prevent HIV transmission. A *microbicide* is a substance that can be put into the vagina or anus, and can reduce the transmission of HIV or other sexually transmissible diseases (STDs).

WOMEN USING MICROBICIDES

- *A microbicide may be especially useful for women who are* ***vulnerable*** *and unable to use other prevention methods.*
- *Many women may not be able to ask their sexual partners to use condoms, and so they cannot control their risk of HIV infection themselves. For some women, reducing the number of sexual partners is not possible, because they are dependant on sexual partners for economic survival.*

For more on the vulnerability of women to HIV/AIDS, see 8.1 on page 184.

At the moment, clinical trials of microbicides are taking place in a number of countries, including South Africa. It is possible that a safe and effective microbicide could be available even before an HIV vaccine is available.

1.5 How do you know if you have HIV or AIDS?

1.5.1 HIV INFECTION

It is hard to tell if a person has HIV, because HIV can live in our bodies for years without obvious effects.

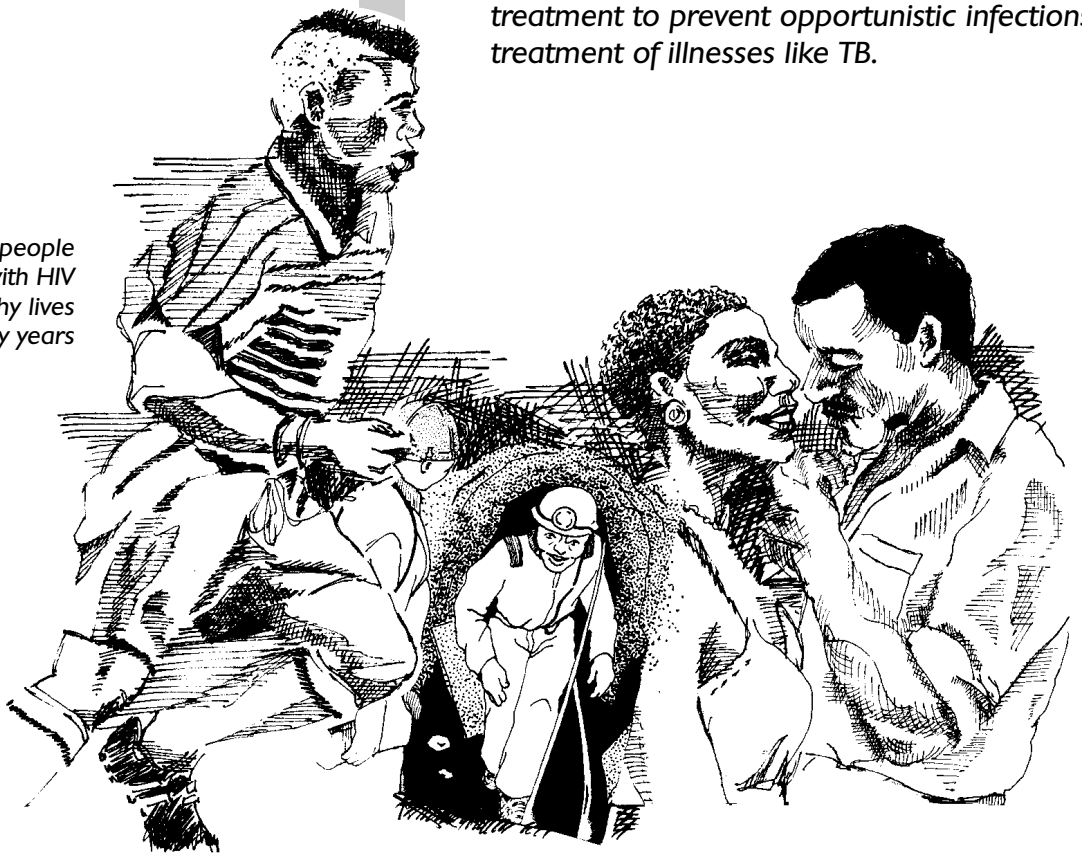
Most people with HIV feel healthy and are capable of living productive, healthy lives for many years. Research shows that employees with **asymptomatic** HIV (showing no symptoms) are as productive, and work as many hours, as other employees. It is usually only when a person develops AIDS-related illnesses, that a person becomes noticeably and seriously ill.

Nevertheless, it is important to **diagnose** people with HIV as soon as possible because it can help people to make life decisions.

EXAMPLES

BENEFITS OF KNOWING YOUR HIV STATUS

- *You can plan the future, eg making decisions about having children.*
- *You can learn how to protect yourself and others, eg using condoms to make sure you do not pass on HIV to your partner.*
- *You can access care and support including treatment to prevent opportunistic infections and treatment of illnesses like TB.*



Most people with HIV live healthy lives for many years

HIV testing

Usually a health care worker does an HIV test (most often a blood test). The HIV test picks up HIV **antibodies** (chemicals) in the person's blood:

- Most people who are infected with HIV will test positive for HIV antibodies within a few weeks of infection.
- In a few cases, a person may not test **HIV positive** for up to 3 months. Very few people who have been infected take longer than that to develop antibodies.

IMPORTANT TERMS

Window period

- *The **window period** is the short time between infection by HIV and when you first develop antibodies that can be picked up by standard HIV tests. Antibodies are the chemicals that we produce as part of our reaction to an infection.*
- *Because it can take up to 3 months for some people to develop antibodies to HIV after infection, you may test **HIV negative** during this time – even though you are actually infected and can infect other people.*

Sero-conversion

- ***Sero-conversion** happens when you change from being HIV negative to HIV positive in an HIV test – in other words, there are enough HIV antibodies in your blood to be seen in a standard HIV test.*

Asymptomatic stage

- *The **asymptomatic stage** is the period between becoming infected with HIV and becoming ill.*
- *This stage can range from weeks to many years – typically from 8 to 10 years.*

For more on the asymptomatic stage, see 1.6.2 on page 22.

Rapid tests

Most blood tests for HIV are quite expensive and need to be done in a laboratory. A number of cheap and rapid (quick) tests have been developed. Rapid tests:

- Are easy to use and very accurate.
- Can pick up whether there are HIV antibodies in blood or saliva.
- Give a result within about 15 minutes.

These tests may be very useful in future, particularly in areas that are far from laboratories. But it is important to be sure that people are still counselled and give proper informed consent before these tests.

KEY POINT

PCR TESTS

The PCR test is not easily available and you can only get the test in major health centres in South Africa.

PCR tests

'PCR' stands for Polymerase Chain Reaction. This is a very sensitive test that tests for HIV rather than HIV antibodies, and can be used to find HIV even when the sample of body fluid is very small. The PCR test is also useful for emergency situations like a sexual assault because:

- You can test even a tiny sample of semen or blood to see if the assaulter is living with HIV.
- You can find out if the person who has been sexually assaulted has HIV in his/her blood much quicker than an ordinary test that looks for HIV antibodies.

1.5.2 DEVELOPMENT OF AIDS

When a person living with HIV starts to become ill with what we call 'AIDS-defining conditions', we say that they have 'AIDS'. So, in places where HIV tests are not available, doctors and nurses often **diagnose** a person as having AIDS when they see an AIDS-defining condition, eg severe thrush, brain infections.

But now, some health care professionals say that the term 'AIDS' is becoming less useful. They prefer to talk about '**HIV disease**' because:

- A lot of people with HIV become sick with illnesses which are not typical AIDS-defining conditions.
- New anti-retroviral treatments mean that a lot of people who had AIDS are now well again.
- Where HIV tests are available, health care workers prefer to use an HIV test to diagnose people, rather than look for people who are sick with AIDS.

It is well known that people in poorer, developing countries often progress to AIDS more quickly than people in developed countries. This is because of better living conditions and better health care in developed countries. Poverty, stress, poor nutrition and other environmental factors can affect how quickly some people develop AIDS.

1.6 What are the different stages of HIV?

HIV causes disease by the progressive destruction of the immune cells which it infects. These are the CD4 cells which are central to maintaining and measuring a healthy immune system. Without a strong immune system, we become vulnerable to **opportunistic infections** and cancers which normally we could fight off easily. We call these infections 'opportunistic' because HIV gives these germs an opportunity to cause disease.

GUIDELINES

Read these sections together with the Chart on page 24.

THE 5 STAGES OF HIV DISEASE:

1. *Primary HIV infection*
2. *The asymptomatic or 'silent' stage*
3. *Early HIV symptomatic disease*
4. *Medium-stage HIV symptomatic disease*
5. *Late-stage HIV symptomatic disease (AIDS).*

1.6.1 PRIMARY HIV INFECTION

This happens within a few weeks of HIV infection and is the time when people **sero-convert** on their blood test for HIV – in other words, change from being HIV negative to HIV positive.

About half of people infected will develop a flu-like illness with fever, sore throat, swollen glands, headache, muscle aches and sometimes a rash. This stage of HIV disease lasts only a week or two – after this, you return to feeling and looking completely well.

1.6.2 THE ASYMPTOMATIC OR 'SILENT' STAGE

After recovery from the primary HIV illness, people infected with HIV continue to be completely well for long periods, often for many years. During this time, the only indication that you are infected with HIV is that you will test positive on standard HIV tests and you may have swollen lymph glands.

This means that you look and feel healthy and can easily infect other people through unprotected sex – especially if you do not know that you are infected.

But HIV is still very active and is continuing to destroy the immune system at this stage.

1.6.3 EARLY HIV SYMPTOMATIC DISEASE

Several years after infection, some people will begin to show mild symptoms of HIV disease. These can include:

- Shingles
- Swollen lymph glands
- Occasional fevers
- Mild skin irritations and rashes
- Fungal skin and nail infections
- Mouth ulcers
- Chest infections
- Weight loss.

1.6.4 MEDIUM-STAGE HIV SYMPTOMATIC DISEASE

This stage of HIV disease was once known as 'AIDS-related complex'. This is when people with HIV can become quite ill without developing the 'AIDS-defining illnesses'. Typical problems include:

- Tuberculosis
- Recurrent oral or vaginal thrush (a fungal rash or spots)
- Recurrent herpes blisters on the mouth ('cold sores') or genitals
- Ongoing fevers
- Persistent diarrhoea
- Significant weight loss (more than 10%).

1.6.5 LATE-STAGE HIV DISEASE (AIDS)

Without effective treatment, the long-term damage caused to the immune system by HIV results in severe opportunistic infections, cancers and HIV-related damage to other organs (eg the brain). This stage is usually called 'AIDS'.

People with severe HIV disease can experience many illnesses at the same time. Many of these infections can be prevented with antibiotic treatment if you test and become aware of your HIV status at an earlier stage. These AIDS-defining illnesses include:

- Severe diarrhoea
- Severe weight loss
- Severe pneumonia
- Brain infections
- Confusion and memory loss
- Severe skin rashes
- Pain and difficulty swallowing.

SUMMARY OF THE STAGES OF HIV

1

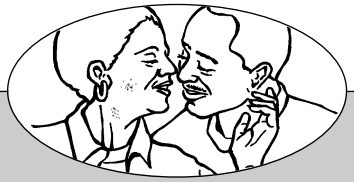
PRIMARY HIV INFECTION

Flu-like illness
HIV test becomes positive

2

ASYMPTOMATIC OR 'SILENT' STAGE

People look and feel healthy
Swollen lymph glands
HIV still active



3

EARLY HIV SYMPTOMATIC DISEASE

Shingles
Occasional fevers
Mild skin irritations and rashes
Weight loss

4

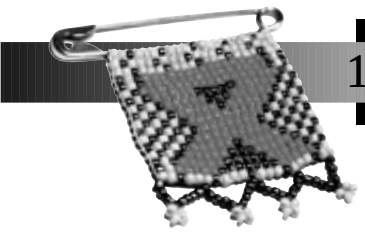
MEDIUM-STAGE HIV SYMPTOMATIC DISEASE

Tuberculosis
Oral or vaginal thrush
'Cold sores' or genital herpes
Ongoing fevers
Diarrhoea and weight loss

5

LATE-STAGE HIV DISEASE *(USUALLY CALLED AIDS)*

Severe diarrhoea
Severe weight loss
Severe pneumonia
Brain infections
Confusion and memory loss
Severe skin rashes
Pain and difficulty swallowing



1.7 Can you treat or cure HIV?

At the moment, we still do not have a cure for HIV. But there are many ways we can help people living with HIV:

- We know how to treat many of the opportunistic infections caused by HIV so that people live longer and better.
- We can provide people living with HIV, and their partners, families and friends, with counselling and emotional support to deal with the impact of HIV upon their lives.
- We can give people living with HIV, and their partners, families and friends, information and education about how to prevent passing on HIV to others.
- We can treat people with HIV with combinations of anti-retroviral drugs.

HAART

Since 1996, doctors have treated people with HIV with combinations of anti-retroviral drugs, known as ***Highly Active Anti-retroviral Therapy (HAART)****.*

HAART stops HIV from multiplying and reduces the volume of HIV in the blood, so that patients who take HAART no longer get sick from HIV disease or develop AIDS. Many of these people have now recovered their health and are going back to work.

If you take HAART, you need regular tests to check on the effect of the treatment on:

- *Your* ***CD4 cell count*** *(the measure of how strong your immune system is), and*
- *Your* ***viral load*** *(the amount of HIV in your blood).*

The use of HAART has led to a massive drop in the number of deaths from AIDS in the USA, Europe and Brazil. At the moment, people living with HIV or AIDS in South Africa find it hard to get access to counselling and basic treatments for opportunistic infections at government hospitals. HAART is very expensive, and is not available to most people living with HIV – only those who can afford to pay for it.

For more on the management of HIV disease and treatment options, see References and resource materials on page 27.

For more on the right of access to health care services, including treatment, see 4.7 on page 79, 5.3.3 on page 103 and 6.4 on page 146.

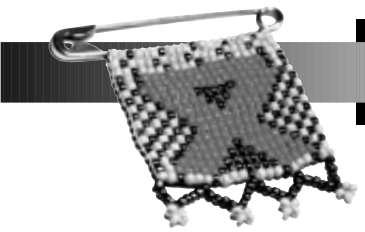
For more on rape and HIV/AIDS, see 8.5 on page 192 and 14.5.1 – 14.5.2 from page 321 onwards.

Talking points

1 We know that HIV causes AIDS. What effect do you think that poverty has on HIV and AIDS?

2 A view: "Anti-retroviral drugs are too expensive. Most of our people living with HIV just can't afford to get them. We can't even get treatment for opportunistic infections at government hospitals and clinics."

- *What is your experience?*
- *What can we do about this?*



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WEBSITES

AIDS Consortium: **www.aidsconsortium.org.za**

AIDS Law Project: **www.alp.org.za**

AIDS Legal Network: **www.redribbon.co.za/legal**

Department of Health resources: **www.aidsinfo.co.za**

Medical Research Council: **www.mrc.org.za**

Rape Crisis: **www.rapecrisis.org.za**

Treatment Action Campaign: **www.tac.org.za**

UNAIDS: **www.unaids.org**

World Health Organisation: **www.who.org**