

## TREATMENT OF HIV INFECTION

HIV infection can be successfully treated with medication known as antiretroviral therapy (ART). This usually consists of three drugs that prevent replication of the virus. This prevents further damage to the immune system and allows for partial recovery of the immune system. The best outcome with ART is when treatment is started early, before the immune system is severely damaged. Frequent testing for HIV is advised to detect HIV infections early allowing for successful antiretroviral therapy.

## WHAT ARE "OPPORTUNISTIC INFECTIONS"?

Due to a failing immune system, HIV-infected persons may develop infections with certain organisms that usually do not cause disease in people with healthy immune systems. These are known as "opportunistic infections". Examples of opportunistic infections include an overgrowth of *Candida* in the mouth and tuberculosis.

## IS THERE A CURE FOR HIV AND AIDS?

AIDS is the last stage of a HIV-infection where the immune system has been severely weakened and a person develops opportunistic infections. There is no cure for HIV/AIDS. Antiretroviral treatment will prevent further damage to the immune system and should prevent the development of AIDS if started early enough.

## BEFORE YOU RISK IT

- Get the facts
- Know the risks
- Get tested
- Protect yourself and others



## PREVENTION OF HIV INFECTION

There are several ways to prevent HIV transmission:

- Treat HIV-infected persons with antiretroviral medication to reduce the possibility of transmission to an HIV negative partner.
- Use preventative measures, such as condoms, sterile needles and pre-exposure prophylaxis (PrEP).
- PrEP is an HIV prevention strategy where HIV negative people take medications daily to prevent them from becoming positive if they are exposed to the virus.
- Use post-exposure prevention with antiretroviral medication. This is when medication is taken after exposure to prevent an infection such as after unprotected sex or after rape.
- Voluntary and confidential HIV testing (VCT) with pre- and post-test counselling is a vital component of HIV/AIDS prevention.
- Pregnant HIV-infected women and HIV-infected couples who wish to have children can be advised on how to prevent their baby from becoming infected.

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## WHAT IS HIV?

Human immunodeficiency virus (HIV) is a virus that infects and slowly destroys certain cells of the immune system.

## THE IMMUNE SYSTEM

HIV infects white blood cells, known as helper T cells, when it enters the bloodstream. Also known as CD4 T lymphocytes, these cells promote the response of other immune cells that help to destroy invading organisms and cancerous cells. HIV infects, reproduces within, and eventually kills helper T cells and releases new virus particles that infect other T cells.

## WHAT IS AIDS?

AIDS is the abbreviation for Acquired Immune Deficiency Syndrome:

- Acquired means an infection from outside the body
- Immune Deficiency means a weakness in the body's system that fights infection and diseases
- Syndrome means a group of health problems that make up a disease

If you have a weakened immune system, such as with an HIV infection, you are more likely to develop health problems such as infections and cancer.

## WHERE DID IT COME FROM?

There are two species of HIV, HIV-1 and HIV-2. Both arose in Africa as viruses of animals that 'jumped' species to infect humans.

- HIV-1 originated in Central Africa from the closely related chimpanzee virus
- HIV-2 originated in West Africa from the sooty mangabey monkey

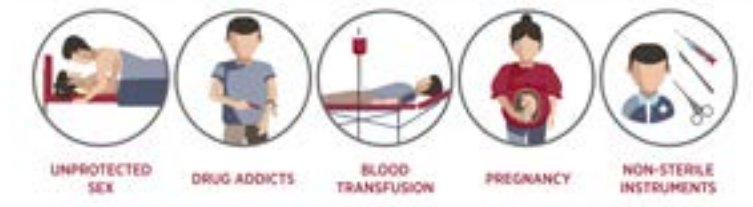
It is thought that humans became infected when slaughtering primates for the bush meat trade.



## HOW DOES A PERSON BECOME INFECTED WITH HIV?

- Having sex with an HIV-infected (positive) person (vaginal, rectal or oral)
- Transmission from an HIV-infected pregnant mother to her baby (vertical transmission)
  - Through the placenta ( $\pm$  10%)
  - During birth ( $\pm$  60%)
  - From breastfeeding ( $\pm$  30%)
- Blood transfusions - this route is now extremely rare due to the vigilant screening of donated blood
- Needle-prick - sharing of needles by drug users, accidental injuries - mostly in healthcare workers

### HIV/AIDS is transmitted



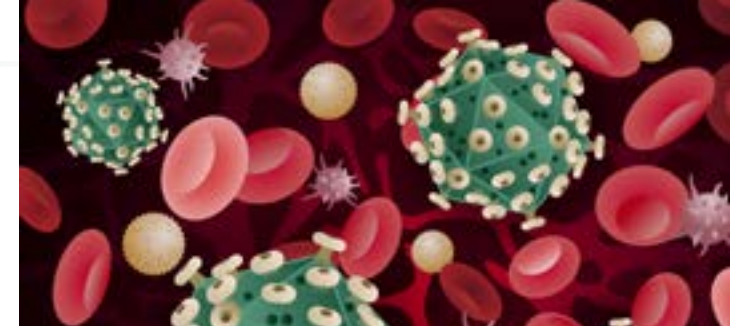
### HIV/AIDS is not transmitted



## WHAT ARE THE SYMPTOMS OF AN EARLY (ACUTE) HIV INFECTION?

If a person is infected, a non-specific acute viral infection typically follows about 2-4 weeks after the initial exposure to HIV. These signs and symptoms include:

- Fever
- Diarrhoea
- Enlargement of the lymph nodes
- Muscle and joint pain
- Sore throat
- Headache
- Open sores or ulcers on mucous membranes and the skin
- Nausea and vomiting



- Lack of appetite and weight loss
- Rash
- Fatigue

However, it should not be assumed that a person is infected with HIV just because any of these symptoms is present. Each of the symptoms can be caused by other illnesses. The only way to determine whether you are infected is to be tested for HIV by a pathology laboratory.

## TESTING FOR HIV

The following laboratory tests are recommended:

**Adults and children older than 18 months of age:** A blood test known as an HIV ELISA which tests for antibodies produced by the body in response to the HIV virus.

**Infants less than 18 months born to HIV-infected mothers:** A blood test known as a PCR is used to detect the present of the genetic material (DNA) of the virus. This is because antibodies cross the mother's placenta and HIV ELISA tests can be positive in these infants even if they are not HIV-infected.

## THE WINDOW PERIOD

Antibodies that are specific to HIV are produced shortly after infection, usually from about 3 weeks after being infected.

The period from the initial infection to when antibodies are produced, that are detectable by the ELISA blood test, is known as the window period. A person in the window period may test HIV negative despite being infected with HIV. The window period is typically the first 2- 3 weeks following the initial infection.

## VIRAL LOADS AND CD4+ COUNTS

After the diagnosis of HIV infection has been made, the severity of disease, rate of progression, prognosis and response to treatment can be assessed by the measurement of certain laboratory markers.

Both the CD4+ T cell count and the HIV viral load measurement are blood tests that have become widely regarded as essential for the optimum management of HIV-infected individuals.