HIV ➢ The effects of HIV/AIDS

3.1 What's the difference between HIV and AIDS?

HIV/AIDS is often written as one word with one meaning. However, HIV and AIDS are different things.

HIV stands for Human Immunodeficiency Virus. A person becomes infected with HIV (HIV positive) when the virus enters their blood stream.

HIV attacks the immune system, which is the body's defence against disease. If a person's immune system is severely damaged by the virus, they will develop AIDS (Acquired Immune Deficiency Syndrome). This means they are likely to get infections and illnesses that their body would normally fight off.

Being diagnosed with HIV does not mean a person has AIDS or that they are going to die. Treatments slow down damage to the immune system so that people with HIV can remain well, and live healthy and fulfilling lives.

3.2 How is HIV transmitted?

HIV is found in body fluids such as blood, semen, vaginal fluids and breast milk. Infection only occurs when body fluids from an infected person enter the blood stream of another person.

HIV **can** be transmitted by:

- Unsafe sex (sex without a condom)
- Sharing needles, syringes and other equipment for injecting drugs
- Unsterile body piercing or tattooing
- Mother-to-child during pregnancy, childbirth or breastfeeding
- Blood transfusion and/or blood products in some other countries. **In Australia, blood transfusions and blood products are safe.**

HIV **cannot** be transmitted by:

- Coughing
- Sneezing
- Kissing
- Spitting
- Crying
- Sharing cutlery and crockery
- Bed linen
- Toilets
- Showers
- Insects such as mosquitoes.

3.3 How can I avoid getting HIV?

Sex

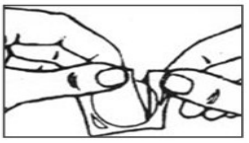
HIV can be passed on through invisible cuts and scrapes on the surface of the vagina, penis or anus during unprotected sex (sex without a condom) with someone who has HIV.

To avoid transmission of HIV, practice **safe sex**:

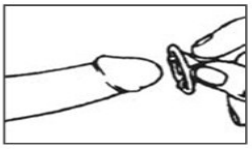
- Use a new condom and water-based lubricant (eg. KY jelly or Wet stuff) every time you have vaginal or anal sex. This also protects you from most other sexually transmissible infections.

How to use a condom

1. Open packet with care to avoid tearing the condom.

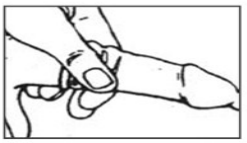


2. Squeeze the tip of the condom between your finger and thumb to remove air and roll the condom down the penis (pull back the foreskin if necessary before putting the condom on).

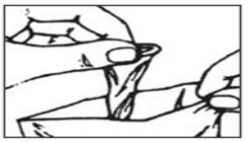


3. Once the condom is on the penis, cover it with water-based lubricant.

4. Hold the condom at the base of the penis when you withdraw to prevent semen spilling out.



5. Put the condom in the bin. Never re-use a condoms



Injecting drugs, body piercing or tattooing

HIV can be transmitted through sharing needles and syringes, and by having body piercing and tattooing done with used needles.

To avoid transmission of HIV when injecting drugs:

- Don't share needles, syringes or other injecting equipment.

To avoid transmission of HIV when having body piercing and tattooing:

- Go to a licensed studio (registered premises) where needles and other equipment are properly sterilised or thrown away after use. This also protects you from other viruses such as hepatitis B and hepatitis C.

Mother-to-Child

Without effective treatment, HIV can be passed on from a HIV positive mother to her child during pregnancy, childbirth, or through breastfeeding. In Australia, as HIV treatments are easily

available and mothers with HIV give birth by caesarean, it's very rare they pass HIV on to their babies. If you have HIV, and you are pregnant or planning to have a baby, it is important to talk to your doctor as soon as possible.

It is recommended that mothers with HIV do not breastfeed. Speak to your doctor about other ways of feeding your baby.

Blood transfusions and blood products

In Australia, blood transfusions are safe. Donated blood and all blood products are checked for HIV, and people who are HIV positive cannot donate blood. However, blood transfusions in some overseas countries may not be safe.

3.4 How does HIV affect the immune system?

HIV is a virus. Viruses are very tiny organisms that can enter the body and cause disease. There are many viruses which spread in different ways and cause different diseases. For example, flu is spread through the air, herpes through physical contact and polio through drinking contaminated water. However, HIV is only passed on when the body fluids of a person living with HIV enter the bloodstream of another person.

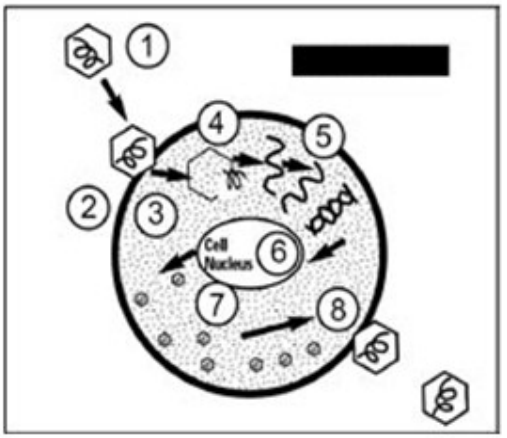
Your immune system
The immune system is your body's natural defense system. It protects your body against infection and disease. It is made up of many different cells which work together to find and destroy viruses, bacteria and other germs that cause infection and disease. White blood cells (also called CD4 T-cells) are important immune system cells that help coordinate your immune system.

What HIV does
HIV attacks immune system cells. In particular, it infects and uses CD4 cells as 'factories' to reproduce and destroys CD4 cells in the process. The more CD4 cells destroyed, the weaker the immune system becomes. As the immune system gets weaker, the risk of developing infections and illness becomes greater. Over time, and without treatment, the number of CD4 cells can become so dangerously low a person can develop AIDS.

Your body's response
To fight HIV, your body will produce antibodies. However, the antibodies cannot keep up with the amount of virus being reproduced. Taking treatment helps your body fight the virus effectively.

The HIV life cycle

1. HIV enters the bloodstream
2 & 3. HIV attaches to and enters the CD4 cell
4. HIV releases its genetic information into the cell
5. A unique process enables this information to become part of the CD4 cell and to enter the cell nucleus.
6. The CD4 cell is now infected with HIV forever
7. HIV begins to make copies of itself inside the CD4 cells
8. CD4 cells breaks open and the newly created HIV spill into the blood. The new virus finds



CD4 cell

more CD4 cells, create more copies, spill more HIV into the blood. The process repeats endlessly.