# CHART ELEVEN (11)

## KENYAN FIGURES

### (KENYA DEMOGRAPHIC HEALTH SURVEY REVISED 2004)

- Adults living with HIV/AIDS - 1.1 million
- Children - 150,000
- Number using ART - 24,000
- Number needing ARVs - 200,000
- National adult prevalence - 7 %
- Ratio F:M 1.9:1

**NB:**
3 out of every 5 people living with HIV/AIDS in Sub-Saharan Africa are female.

**HIV Awareness as at end of 2004**

| | | HIV awareness | Tested |
|---|---|---|---|
| • Men | - | 99.3% | 14.1% |
| • Women | - | 98.4% | 12.8% |

**NOTE**

| Age group | | Prevalence | | |
|---|---|---|---|---|
| | | Women | Men | Mean |
| 15 – 19 | - | 3.5% | 0.5% | 2.0% |
| 20 – 24 | - | 8.7% | 2.4% | 5.8% |
| 25 – 29 | - | 12% | 6.5% | 9.5% |
| 30 – 34 | - | 11.6% | 6.1% | 9.1% |
| 35 – 39 | - | 11.8% | 8.6% | 10.3% |
| 40 – 44 | - | 10.8% | 8.6% | 9.4% |
| 45 – 49 | - | 4.7% | 6% | 5.3% |

# CHART TWELVE (12)

## NATURAL HISTORY OF HIV INFECTION

The HIV causes death of human cells by dividing rapidly in them

### 1. HIV attacks the CD4 lymphocyte (WBC)

- The virus attaches to a CD4 lymphocyte receptor. It attaches to CD4 receptor.
- It enters the cell and multiplies.
- CD4 lymphocytes die as virus multiplies.
- The body immune function is reduced by fall in number of CD4 lymphocyte.

### 2. HIV infection leads to immunodeficiency.

- Loss of CD4 cells = immunodeficiency in HIV infection.
- The patient becomes susceptible to "opportunistic infections"

### 3. Immunodeficiency leads to death.

**Teaching notes**

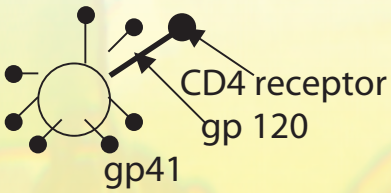
- The main target cells for infection by HIV are those that have on their surface a cell surface molecule called CD4, usually lymphocytes (WBC) [give other examples]. This receptor is recognized by the HIV, and then binds the virus before fusing and entering the susceptible host cell.

- Viral replication continues, even when an infected person looks healthy, with a high rate of cell infection and cell killing (productive infection).

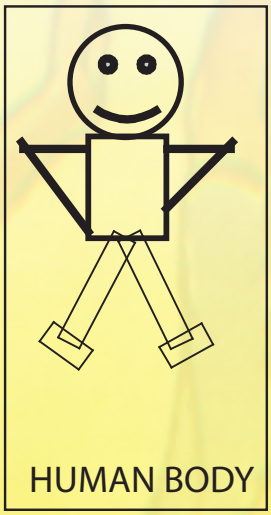
- Eventually, the WBCs are depleted and exhausted.

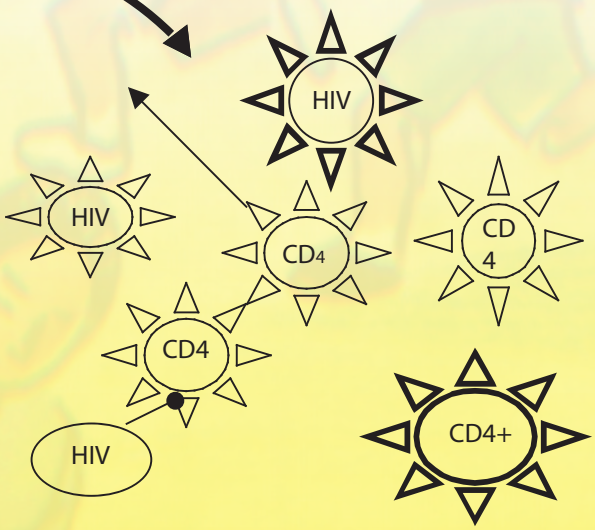
- The individual's immune function declines paving way to opportunistic infections.

# CHART THIRTEEN (13)



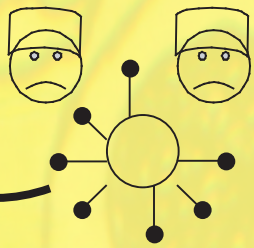

HIV VIRUS




Attachment of virus to $CD_4$+ cells
(gp 120 binds to CD 4 receptor)
Found in:
- White blood cells (WBC)
- Vagina, penis
- Sites of infections
- Penile foreskin

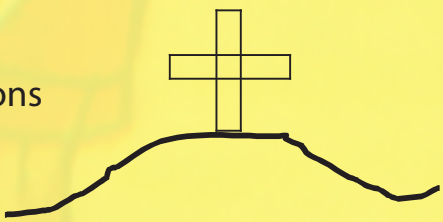
OTHER DISEASES INVADE THE BODY
e.g.
- Diarrhoea
- Tuberculosis
- Kaposis Sarcoma



Weakens, kills and prevent WBC from working.

- Dead WBC
- Few WBCs to fight infections

HUMAN BODY
Gets weaker and dies



# CHART FOURTEEN (14)

## CLINICAL STAGES OF HIV INFECTION

| | | HIV TEST RESULTS |
|---|---|---|
| I. | Acute HIV infection (primary HIV infection) |  NEGATIVE |
| II. | Seroconversion |  POSITIVE |
| III. | Asymptomatic HIV infection |  POSITIVE |
| IV. | Full blown AIDS |  POSITIVE |

**Teaching note**

The window period is the period between Stages I and II may last between 6 weeks and 6 months.

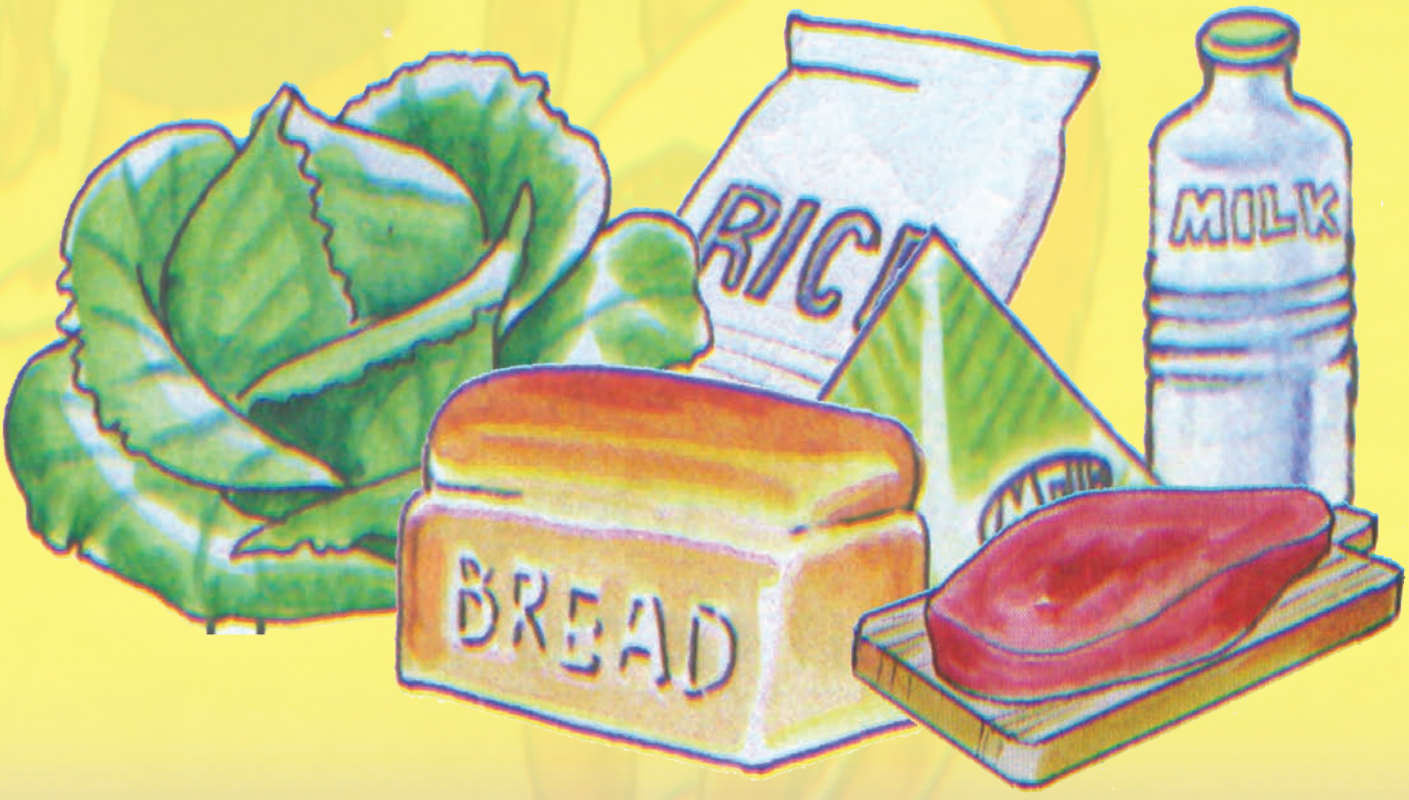
The window period is the interval between acute infection and seroconversion. An infected person may test negative because his body has not made enough antibodies to be detected by a HIV ELISA test.

# CHART FIFTEEN (15)

## FACTORS AFFECTING PROGRESSION OF DISEASE

The time interval from HIV infection to development of AIDS varies from person to person due to:-

- Genetics
- Diet
- Occurrence of Opportunistic infections
- Pregnancy
- ARVs and treatment of opportunistic infections
- A voidance of illicit drugs e.g. alcohol
- Avoiding reinfection with different HIV strains



# CHART SIXTEEN (16)

## COMMON SYMPTOMS AND OPPORTUNISTIC DISEASE INFECTIONS IN HIV/AIDS

- Generalised lymphadenopathy.
- Oral/vaginal candidiasis
- Prolonged Fever
- Chronic Diarrhoea
- Lymphoma (cancers)
- Kaposis sarcoma
- AIDS dementia
- Weight loss
- PCP pneumonia (pneumocystis carinii pneumonia)
- Tuberculosis
- Herpes zoster
- Meningitis

# CHART SEVENTEEN (17)

## WHAT IS THE DIFFERENCE BETWEEN HIV INFECTION AND AIDS?

**HIV infection:** One is infected with the virus but remains without signs and symptoms. The HIV test is positive. The virus is actively multiplying and destroying CD4 cells.

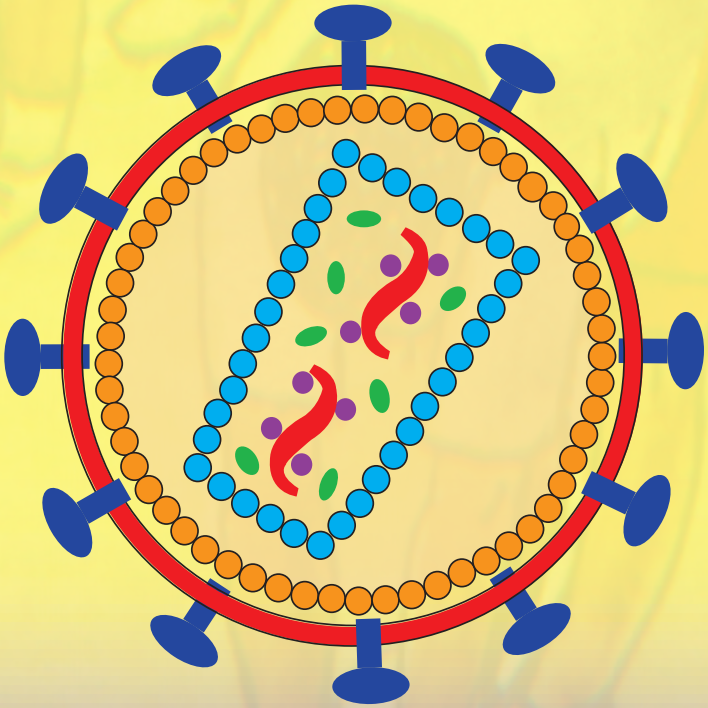
**AIDS:** This is the stage when the CD4 cells have decreased to a state of immunedeficiency. Opportunistic infection begin to attack the body.

### Why can't HIV infection be eradicated from the body?

- HIV hides in areas where drugs cannot reach it e.g testis, brain.
- The virus load can be reduced but never wiped off completely.

**NOTE**

Immunity against one subtype does not offer protection against future exposure to other subtypes. Those already infected should avoid reinfection by other subtypes.



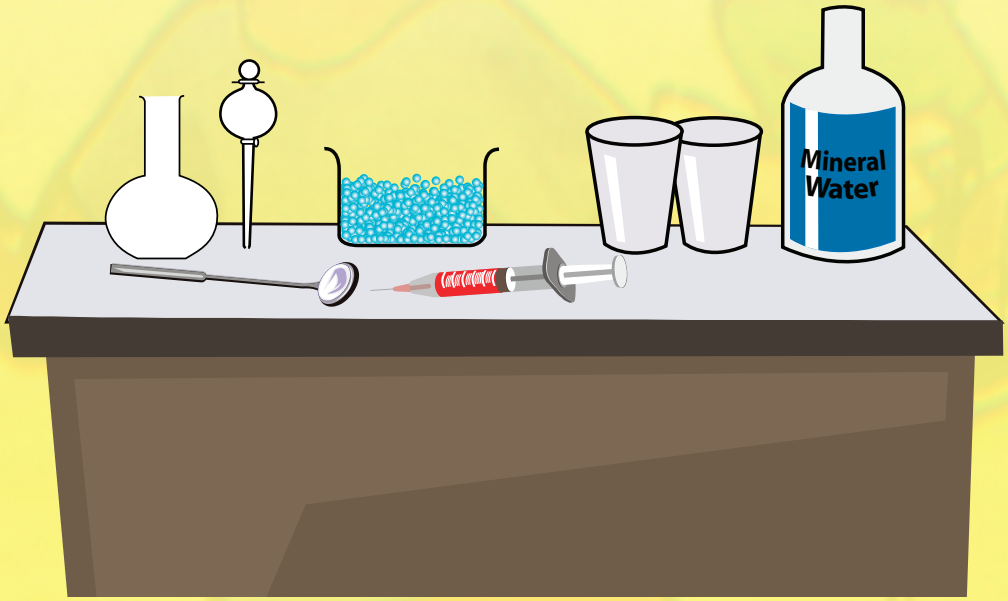
# CHART EIGHTEEN (18)

## SEXUAL NETWORKING EXPERIMENT

An example of 20 participants has been used

### Apparatus

1. Glasses (42) been used
2. Phenopthalein (indicator)
3. Sodium hydroxide crystals: (NAOH)
4. Spatula or spoon
5. Syringes (22)
6. Sterile mineral water.




1. Prepare the experiment apparatus 1 to 2 hrs before. Determine no. of participants and arrange seats for the control group (special guest)

2. Arrange 40 glasses on the table. All of which should be clean and dry. Pour in water to ¾ full in 20 of them.

3. Select one glass and put in 2 teaspoonfuls of sodium hydroxide. Stir until all crystals are dissolved. The reaction is exothermic and glass becomes warm. Early preparation allows it time to cool.

4. This glass is arranged with the rest but should be noted. (Try and put 4mls of this fluid (NAOH) in an extra glass & put in indicator (1mls) to see of colour change is as desired.

5. Introduce the experiment emphasizing it is just an experiment called sexual networking demonstrating exchange of body fluids.

6. Once the 5 special guests are seated serve them with a glass with water and an empty glass. The NaOH one should not be among them.

7. Ask the rest of the participant to pick a glass of water each and an empty glass each. Note who picks the NaOH glass.

8. Demonstrate how they will divide their water in ½ and watch them doing it. The special guests also do it.

9. Ask them to look for a person they trust to keep one glass of water for them. Tell them that is their original fluid and should be kept safe. The special guests also do this.

10. Demonstrate using the syringe how exchange of body fluids will be done. Using 4 mls of fluid show how to aspirate and pour in the neighbours glass taking care not to touch their fluid.

11. Pass round the syringes. Let them practice how to manipulate the plunger. Allow them to mingle extensively among the 15 exchanging fluid 4 times.

12. When they finish ask 4 of the special guests to identify one person among the 15 to exchange with. One special guests should abstain from exchanging fluid.

13. Confirm all 15 have exchanged 4 times. Let them note who they exchanged with.
Emphasize the 4 special guest exchanged only once & one special guest abstained.

14. Ask them to come forward for VCT.

15. Put 1-2mls of the indicator in each of the 15 glasses in a positive test the fluid changes pink / red. Ask those whose fluid changes to pink – red to lift their glasses. Count them together.

16. Ask them to return their tested glasses to the table.

17. Test the special guests. Emphasize he who abstained is always negative

18. Ask them how may people they think were originally positive.
Let them retrieve their original fluid glasses. The special guests too.
Repeat the test in this fluid
Only one persons fluid tests positive this time. (The NaOH) one.

19. Correlate this to the total number of people who become 'positive; in the end.

20. Note that special guests some of those who exchanged only once become positive.

21. The only 100% safe person was the one who abstained.

## CONCLUSION

- De 'role' all participants - it is an experiment. The status of any one person can only be confirmed by a blood test.
- Exchange of body fluids represents a sexual encounter.
- It is called networking because the positive person did not exchange directly with everybody who later tested positive.
- Only abstinence is 100% safe
- Even one sexual encounter can result in HIV infection.
- Only a blood test can confirm the HIV status.
- Nobody can tell who is HIV positive by appearance alone.

# CHART NINETEEN (19)

## TRANSMISSION OF HIV

### Definition:

- To transmit is to pass "on something".
- In HIV/AIDS, transmission is the passing on of the virus from one infected person to another who may or may not be infected with HIV.

### For HIV transmission to occur

- HIV must be present
- HIV must get into the blood–stream or genital area.

**NOTE**

Transmission risk is very high when HIV comes into contact with mucous membranes in the genitals, the anus and the rectum which have high number of CD4 cells and a rich blood supply.

# CHART TWENTY (20)

## RISKY FLUID

- Semen
- Vaginal secretion
- Pre-ejaculatory fluids
- Breast milk
- Blood

## NON-RISKY FLUIDS

- Tears
- Sweat
- Saliva
- Mucus
- Urine
- Sputum
- Pus
- Faeces
- Vomit

**NOTE**

If any of these non-risky fluids have blood in them, they then have an element of risk.