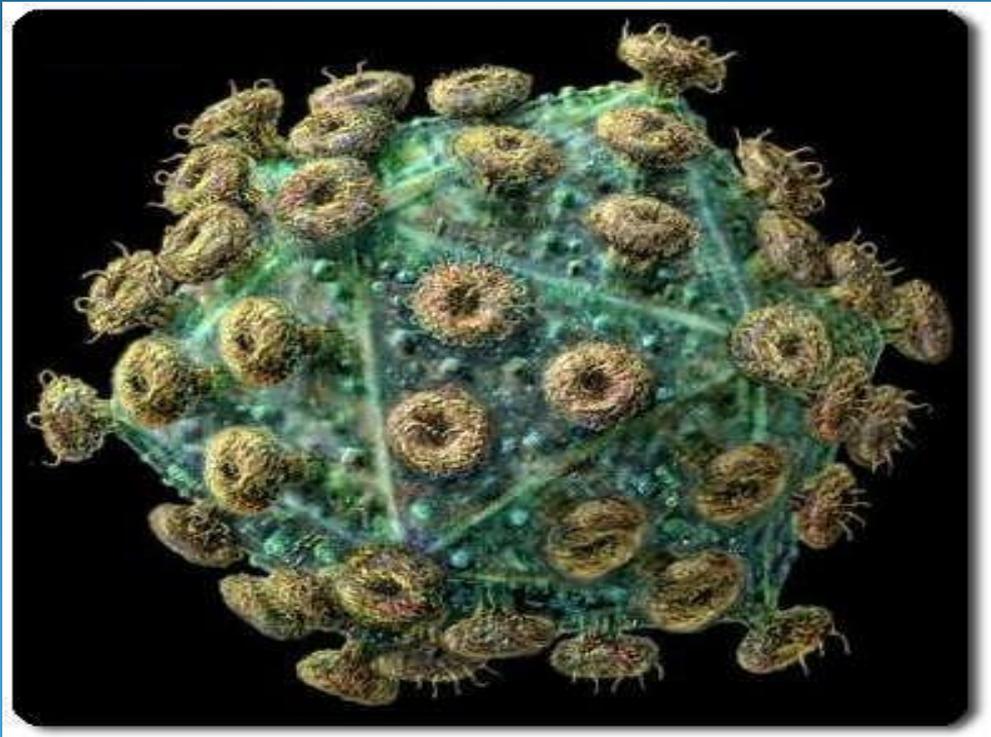


HIV/AIDS



**PRESENTED BY :-
BHAGAWATI RAY**

HIV

- “Human Immunodeficiency Syndrome”
- A specific type of virus (a retrovirus)
- HIV invades the helper T cells to replicate itself.
- No Cure

AIDS

- Acquired Immunodeficiency Syndrome
- HIV is the virus that causes AIDS
- Disease limits the body's ability to fight infection
- A person with AIDS has a very weak immune system
- No Cure

History of AIDS

□ 1959

Scientists isolate what is believed to be the earliest known case of **AIDS**. The discovery suggests that the multitude of global AIDS viruses all shared a common African ancestor within the past 40 to 50 years.

□ 1978

Gay men in the **US** and **Sweden** -- and heterosexuals in **Tanzania** and **Haiti** begin showing signs of what will later be called AIDS.

□ 1972

The term AIDS ("acquired immune deficiency syndrome") is used for the first time on July 27th.

□ 1985

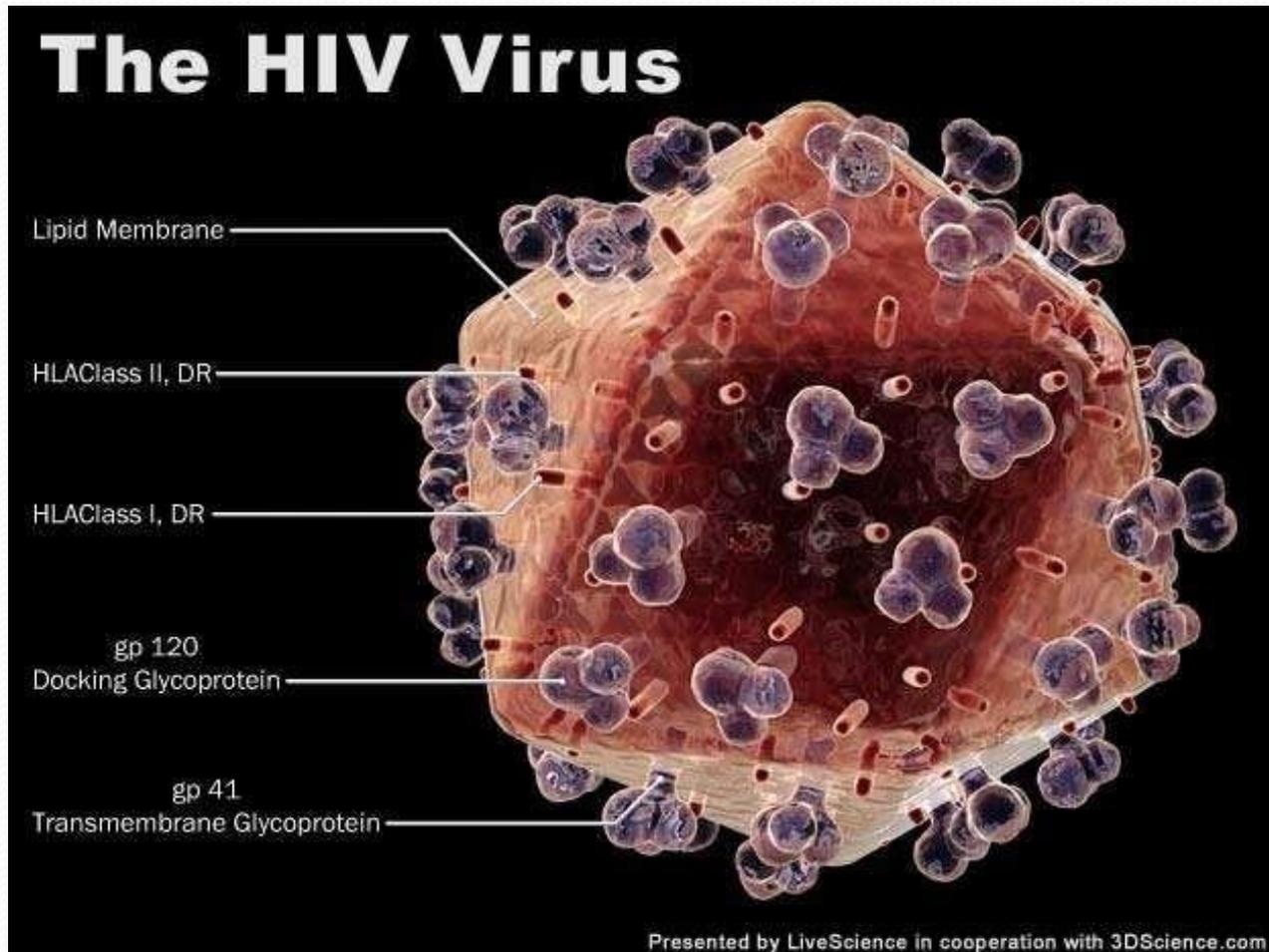
The **FDA** (US) approves the first HIV antibody test. Blood products begin to be tested in the US and Japan.

The first International Conference on AIDS is held in Atlanta (US).

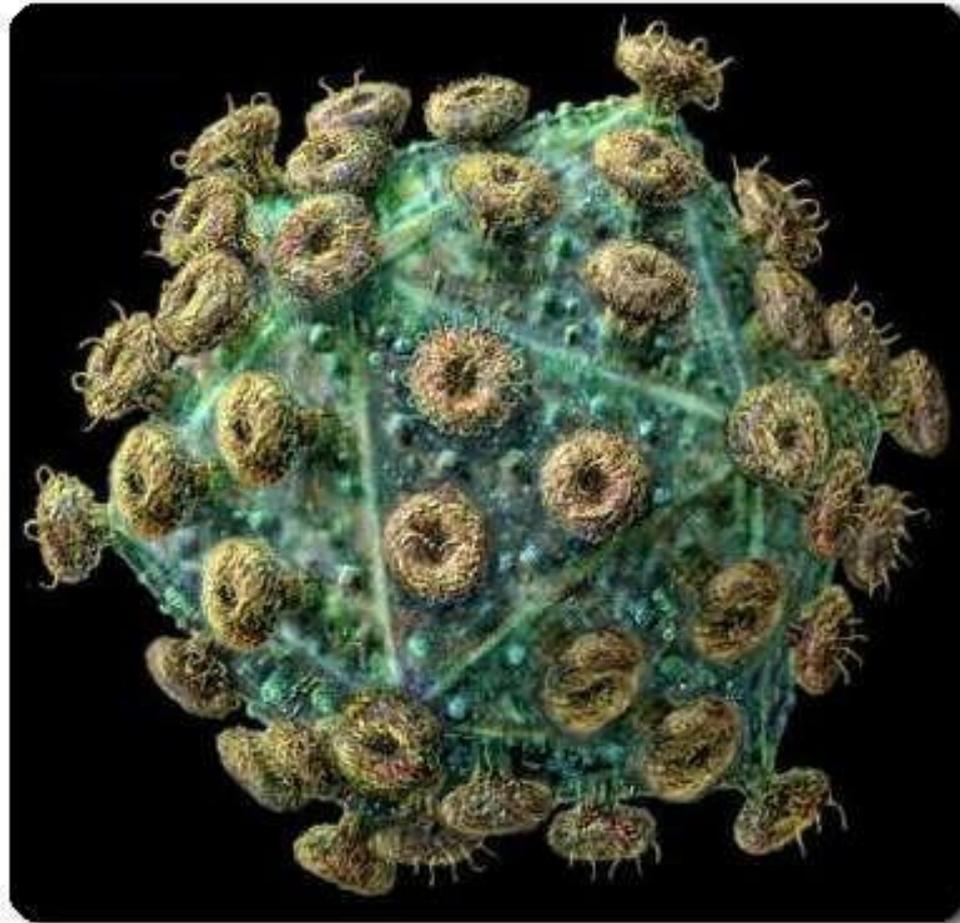


Structure Of HIV

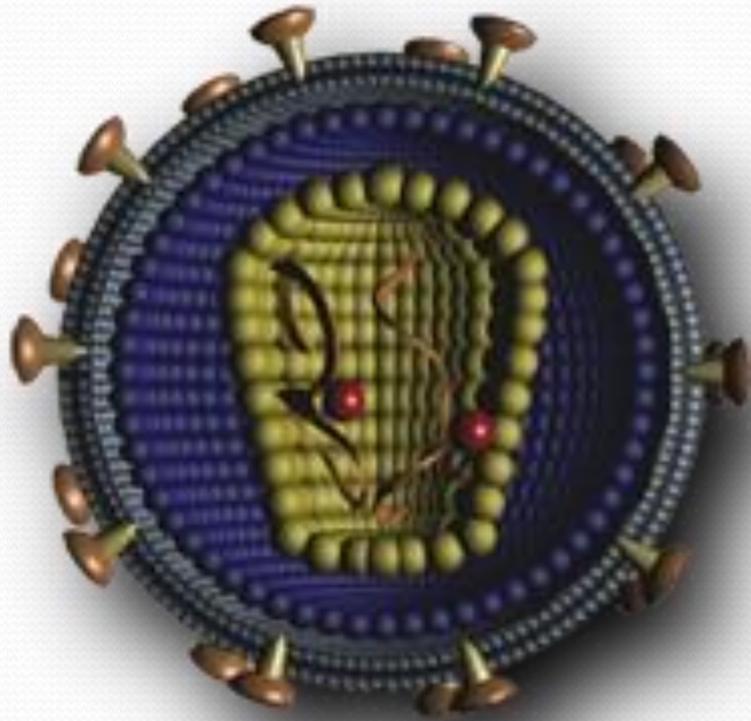
HIV Virus Structure



3 Dimensional Model of HIV Virus



Section Of HIV Virus



H Deffontaines

HIV Transmission

HIV can spread through:

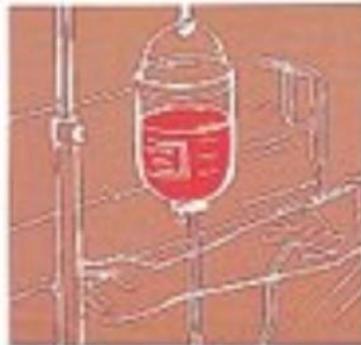
1

Unprotected sex with an infected person



2

Transfusion of infected blood/ blood products



3

Sharing of contaminated syringes/needles



4

Infected mother to child



HIV(Human Immuno Deficiency Virus) causes Acquired Immune Deficiency Syndrome(AIDS)



National AIDS Control Organisation

100-101, Connaught Place, New Delhi-110028
www.naco.gov.in



The Centre for HIV/AIDS in the World of Work, A Special Response
of ILO Strategy of Office, New Delhi
www.ilo.org/hiv/aids

HIV Transmission

□ Common fluids that are a means of transmission:

□ Blood

□ Semen

□ Vaginal Secretions

□ Breast Milk



Routes of Transmission of HIV

Sexual Contact:

Male-to-male

Male-to-female or vice versa

Female-to-female

Blood Exposure:

Injecting drug use/needle sharing

Occupational exposure

Transfusion of blood products

Prenatal:

Transmission from mom to baby

Breastfeeding

Through Drug Use

- Sharing Needles
 - Without sterilization

30% of new HIV infections
in Asia associated
with injecting drug use



Through Sex

- Intercourse (penile penetration into the vagina)
- Oral
- Anal
- Digital Sex

Mother-to-Baby

- Before Birth
- During Birth
- Postpartum
 - After the birth



Four Stages of HIV

Stage 1 - Primary

- Short, flu-like illness - occurs one to six weeks after infection
- no symptoms at all
- Infected person can infect other people

Stage 2 - Asymptomatic

- Lasts for an average of ten years
- This stage is free from symptoms
- There may be swollen glands
- The level of HIV in the blood drops to very low levels
- HIV antibodies are detectable in the blood

Stage 3 - Symptomatic

- The symptoms are mild
- The immune system deteriorates
- emergence of opportunistic infections and cancers

Stage 4 - HIV □ AIDS

- The immune system weakens
- The illnesses become more severe leading to an AIDS diagnosis

Symptoms



Main symptoms of **AIDS**

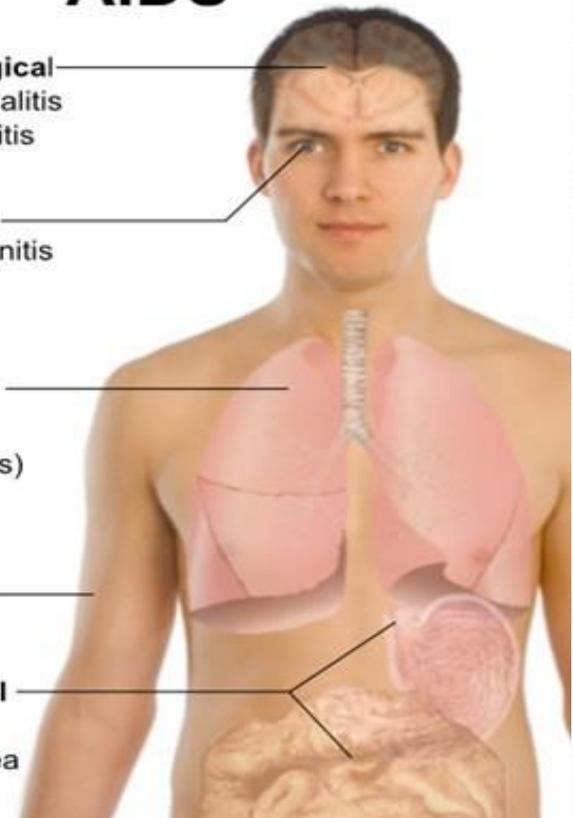
- Neurological**
- Encephalitis
 - Meningitis

- Eyes**
- Retinitis

- Lungs**
- Pneumocystis pneumonia
 - Tuberculosis (multiple organs)
 - Tumors

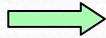
- Skin**
- Tumors

- Gastrointestinal**
- Esophagitis
 - Chronic diarrhea
 - Tumors

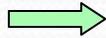
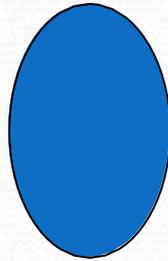


HIV-Infected T-Cell

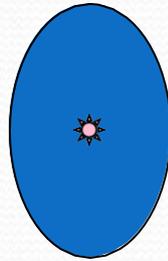
**HIV
Virus**



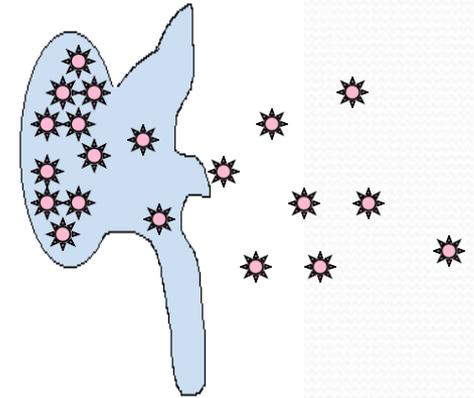
T-Cell



**HIV Infected
T-Cell**



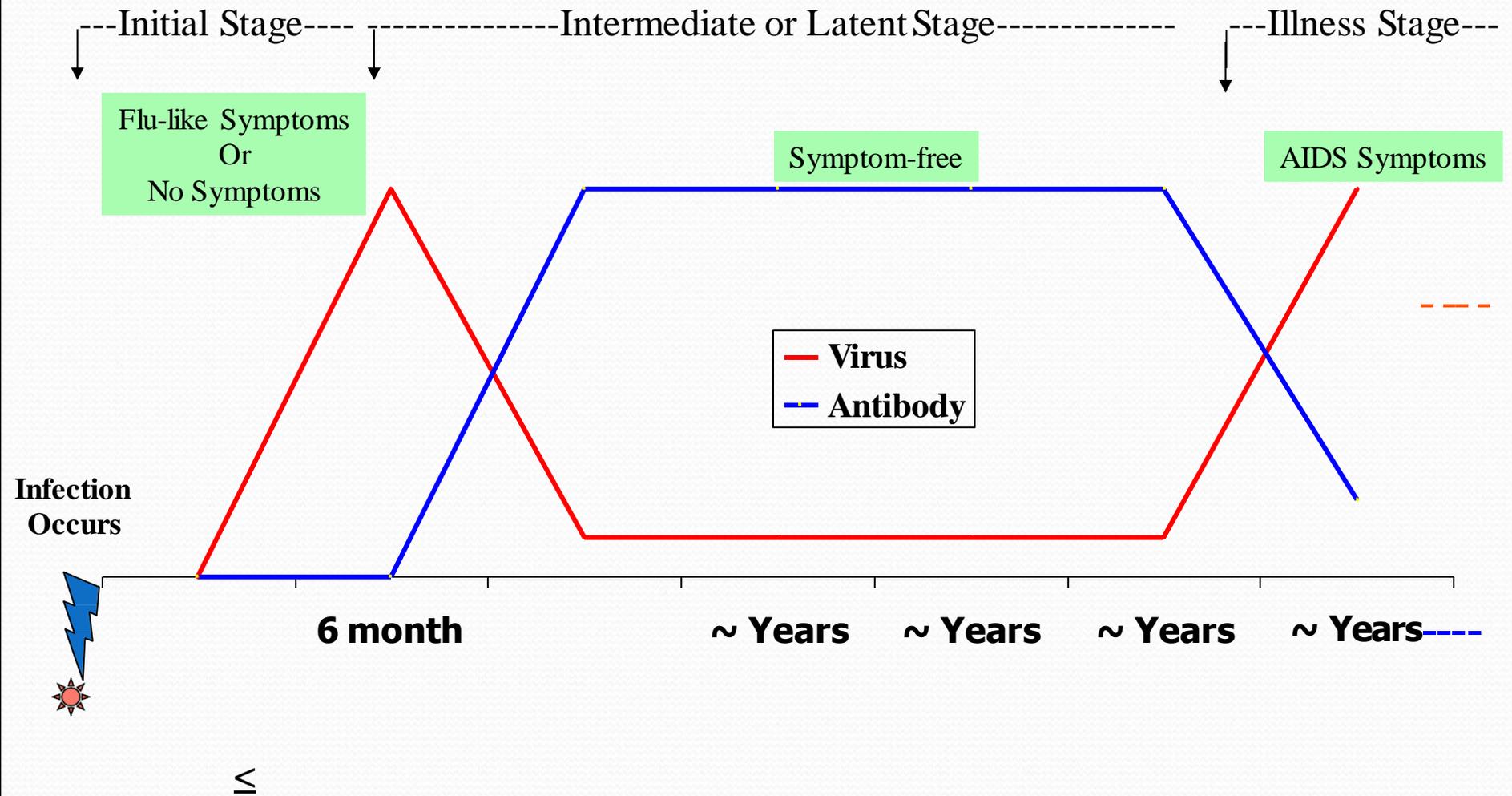
**New HIV
Virus**



Window Period

- This is the period of time after becoming infected when an HIV test is negative
- 90 percent of cases test positive within three months of exposure
- 10 percent of cases test positive within three to six months of exposure

HIV Infection and Antibody Response



Importance of Early Testing and Diagnosis

- Allows for early treatment to maintain and stabilize the immune system response
- Decreases risk of HIV transmission from mother to newborn baby
- Allows for risk reduction education to reduce or eliminate high-risk behavior

Opportunistic Infections associated with AIDS

Bacterial

- Tuberculosis (TB)
- Strep pneumonia

Viral

- Kaposi Sarcoma
- Herpes
- Influenza (flu)

Opportunistic Infections associated with AIDS

- Parasitic

- *Pneumocystis carinii*

- Fungal

- *Candida*

- *Cryptococcus*

Testing Options for HIV



BRENT STIRTON/GETTY IMAGES

Confidential Testing

- Person's name is recorded along with HIV results
 - Name and positive results are reported to the State Department and the Centers for Disease Control and Prevention
- Results issued only to test recipient

HIV Testing

- Requires a blood or oral fluid sample
- HIV test detects the body's antibody response to HIV infection
- The test does NOT detect the HIV virus

Blood Detection Tests

- Enzyme-Linked Immunosorbent Assay/Enzyme Immunoassay (ELISA/EIA)
- Radio Immunoprecipitation Assay/Indirect Fluorescent Antibody Assay (RIP/IFA)
- Polymerase Chain Reaction (PCR)
- Western Blot Confirmatory test

HIV Testing

- Those recently exposed should be retested at least six months after their last exposure
- Screening test (EIA/ELISA) vs. confirmatory test (IFA)

EIA/ELISA (Reactive)



Repeat EIA/ELISA (Reactive)

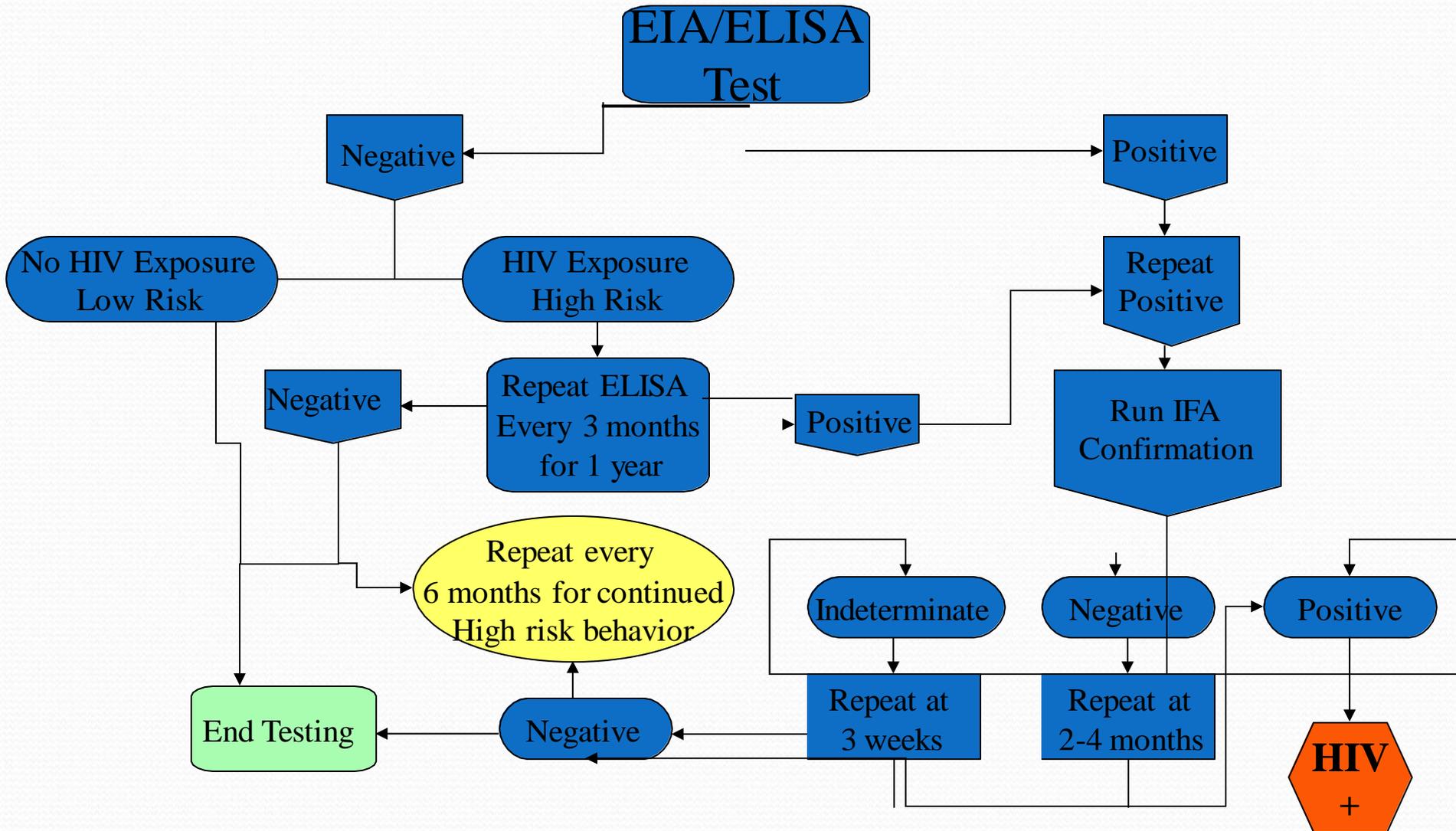


IFA (Reactive)



Positive for HIV

HIV Testing



Urine Testing

- Urine Western Blot
 - As sensitive as testing blood
 - Safe way to screen for HIV
 - Can cause false positives in certain people at high risk for HIV

Oral Testing

□ Orasure

- The only FDA approved HIV antibody.
- As accurate as blood testing
- Draws blood-derived fluids from the gum tissue.
- NOT A SALIVA TEST!

HIV AIDS

- Once a person is infected they are always infected
- Medications are available to prolong life but they do not cure the disease
- Those who are infected are capable of infecting others without having symptoms or knowing of the infection

Treatment Options



HIV+
vaccine

Antiretroviral Drugs

- Nucleoside Reverse Transcriptase inhibitors
 - AZT (Zidovudine)
- Non-Nucleoside Transcriptase inhibitors
 - Viramune (Nevirapine)
- Protease inhibitors
 - Norvir (Ritonavir)



Counseling

Pre-test Counseling

- Transmission
- Prevention
- Risk Factors
- Voluntary & Confidential
- Reportability of Positive Test Results

Post-test Counseling

- Clarifies test results
- Need for additional testing
- Promotion of safe behavior
- Release of results

HIV Risk Reduction

- Avoid unprotected sexual contact
- Use barriers such as condoms and dental dams
- Limit multiple partners by maintaining a long-term relationship with one person
- Talk to your partner about being tested before you begin a sexual relationship

HIV Risk Reduction

- Avoid drug and alcohol use to maintain good judgment
- Don't share needles used by others for:
 - Drugs
 - Tattoos
 - Body piercing
- Avoid exposure to blood products

Abstinence

- It is the only 100% effective method of not acquiring HIV/AIDS.
- Refraining from sexual contact: oral, anal, or vaginal.
- Refraining from intravenous drug use

Monogamous relationship

- A mutually monogamous (only one sex partner) relationship with a person who is not infected with HIV
- HIV testing before intercourse is necessary to prove your partner is not infected

Condoms

Using condoms is not 100 percent effective in preventing transmission of sexually transmitted infections including HIV

Condoms = Safer sex

Condoms ≠ Safe sex

Condom Use

- Should be used consistently and correctly
- Should be either latex or polyurethane
- Should be discussed with your partner before the sexual act begins
- Should be the responsibility of both partners for the protection of both partners
- Male and female condoms are available

When Using A Condom

Remember To:

- Make sure the package is not expired
- Make sure to check the package for damages
- Do not open the package with your teeth for risk of tearing
- Never use the condom more than once
- Use water-based rather than oil-based condoms

Sterile Needles

- If a needle/syringe or cooker is shared, it must be disinfected:
 - Fill the syringe with undiluted bleach and wait at least 30 seconds.
 - thoroughly rinse with water
 - Do this between each person's use

People Infected with HIV

- Can look healthy
- Can be unaware of their infection
- Can live long productive lives when their HIV infection is managed
- Can infect people when they engage in high-risk behavior

HIV Exposure and Infection

- Some people have had multiple exposures without becoming infected
- Some people have been exposed one time and become infected

HIV Post Exposure Prophylaxis

HIV Occupational Exposure

- Review facility policy and report the incident
- Medical follow-up is necessary to determine the exposure risk and course of treatment
- Baseline and follow-up HIV testing
- Four week course of medication initiated one to two hours after exposure
- Liver function tests to monitor medication tolerance
- Exposure precautions practiced

HIV Non-Occupational Exposure

PREVENTION --- FIRST

- No data exists on the efficacy of antiretroviral medication after non-occupational exposures
- The health care provider and patient may decide to use antiretroviral therapy after weighing the risks and benefits
- Antiretrovirals should not be used for those with low-risk transmissions or exposures occurring more than 72 hours after exposure

HIV Non-Occupational Exposure

Provider Considerations:

- Evaluate HIV status of patient and risk history of source patient
- Provide necessary medical care and counseling
- Evaluate risk event and factors for exposure
- Determine elapsed time from exposure
- Evaluate potential for continuous HIV exposure
- Obtain informed consent for testing and treatment
- Evaluate pregnancy status of females
- Monitor for drug toxicity and acute infection



ANY QUESTIONS?



Thank
You