

Basics of

AIDS

+
TB

Community
Health Workers

10 day Workshop

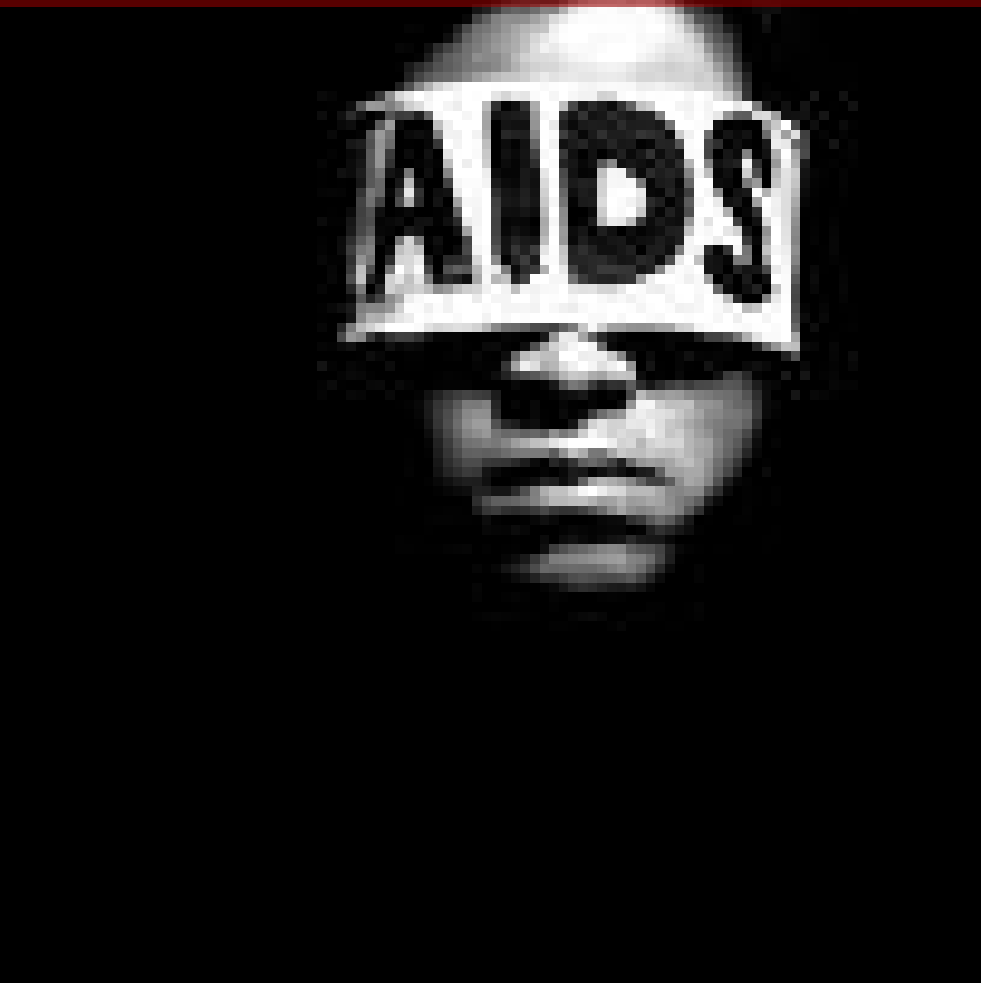


Basics of

HIV/TB

- HIV Transmission
- Immune System
- HIV replication
- Opportunistic Infections
- TB & HIV

do you know how these
words affect your patients?



HIV

- **H**uman
- **I**mmunodeficiency
- **V**irus

AIDS

- **A**cquired
- **I**mmuno -
- **D**eficiency
- **S**yndrome

HIV

- **H**uman
- **I**mmunodeficiency
- **V**irus

HIV-positive means
you have the virus in
your body

AIDS

- **A**cquired
- **I**mmuno -
- **D**eficiency
- **S**yndrome

AIDS is when your immune system
is damaged from HIV

AIDS is not a death sentence,
with treatment you can stay well.

HIV/AIDS - *treatment, but no cure*

- ARVs are an effective treatment for HIV
- HIV is not from bewitchment or bad luck
- It is a myth that HIV can be cured by...



Transmission of HIV

- HIV is not easily transmitted
- You can not get HIV from...



Transmission of HIV

transmitted in 3 ways

Blood



Sex



Mother-to-child



Blood Transmission

Blood



Sexual Transmission

Any sexual activity that involved transfer of infectious body fluids
(semen, vaginal secretions, blood)



Rape



Anal
SEX

AIDS ?

Oral
SEX



Mother-to-Child Transmission



1



Pregnancy

2



Delivery

3



Breast feeding

Infectious Body Fluids

Blood



Semen & Vaginal
secretions



Blood / breast milk



Precautions to take

What you can advise your patients

Deep Kissing

Toothbrush

Condoms

Gloves



- Due to risk of oral ulcers and undetectable blood in the mouth
- Not because of saliva

- For all forms of sex, including oral and anal

- If providing home care, including wounds

These body fluids do NOT pass HIV

Tears



Saliva



Urine



Sweat



Our Immune System

What happens inside the body
when HIV infects us?

Your patients may ask you...

I tested
HIV-positive, what
does that mean?



HIV-positive

- Means you have virus in your body.
- You can remain healthy for years (4-6 years) and not know you have HIV in your body
- If you were sick when you tested HIV- positive, you probably became infected several years ago.
- South Africa uses an HIV rapid test, that detects antibodies to HIV. The test does not measure actual virus.



What is a
CD4 cell?



CD4 cell



- A CD4 is a kind of blood cell called a T-lymphocyte or **T-cell**.
- CD4 cells play a central role in our immune system and **fighting illnesses** including flu, , sore throat, HIV infection and even cancer
- A **CD4 count** is a blood test to measure the number of CD4 cells in our body. Normal is over 1000.



My CD4 count is
less than 200, what
does that mean?

CD4 less than 200



- Once HIV gets into the body, it attacks CD4 cells and turns it into a factory to make more HIV
- Over years of HIV infection, the number of CD4 cells slowly gets lower and lower
- Once the CD4 count drops below 200 is said to have AIDS because the immune system is damaged.

What is a
VIRAL LOAD?



viral load



- **Viral load** is a blood test that measures the level of HIV in your body
- Your ARV doctor will check your VL before you start ARVs, and repeat it **every 6-months**
- If your ARVs are working, your VL after 6-months of ARVs, should be **UNDETECTABLE**. This means the HIV is too low to be detected on the test
- UNDETECTABLE does not mean that HIV is gone, but it is being suppressed by the ARVs

How can you say I have
AIDS, when I've never
even been sick?



A I D S

- For all HIV+ persons, once the CD4 count falls below 200, you have AIDS, which means simply that your immune system is damaged or deficient.



- Even if you have never been sick, you are at high risk of infection because the immune system is very weak.
- It is essential for persons with AIDS to start ARV treatment soon.

What are the sicknesses that
tell us someone has AIDS?

‘AIDS Defining Illnesses’

WHO Clinical Staging

AIDS defining illnesses

WHO Stage 1	WHO stage 4
Asymptomatic (no sickness)	PCP
Swollen glands	Oesophageal thrush
WHO stage 2	Cryptococcal meningitis
Shingles/Herpes Zoster (in the last 5 years)	Diarrhea - Cryptosporidiosis
Recurrent mouth sores & infections	CMV retinitis
Recurrent upper respiratory infections	Cervical cancer - invasive
Weight loss (less than 10% of body weight) <i>Example: Weighed 60kg → drop 6 kg or less</i>	HIV encephalopathy <i>Impaired cognition / brain function</i>
WHO stage 3	Herpes ulcers (more than 4 weeks)
Oral thrush	Herpes in organs/systemic (any duration)
Diarrhea (more than 4 weeks)	Kaposi Sarcoma
TB (within the last 1 year)	Toxoplasmosis (brain)
Fever (more 4 wk continuous or off/on)	TB extra-pulmonary
Bedridden < 50% of day during last month	Bedridden > 50% of day during last month
Weight loss (more than 10% body weight) <i>Example: weighed 60kg → drop 6 kg or more</i>	HIV wasting = lose > 10% body weight + <i>(diarrhea x 4wks) or (weakness/fever x 4wks)</i>

What is an OI?

- **Opportunistic infection**
- An infection that takes the opportunity to cause **an illness** in a person who is immuno compromised
- OI's usually occur in persons with a **CD4 less than 350**

Can you name some OIs?



Can you name some OIs?

A Few....

- Oral thrush
- Shingles (herpes zoster)
- Esophageal thrush
- PCP pneumonia
- Cryptococcal meningitis

Treat OI' s early!

- HIV does not kill → OI' s kill
- Most OIs are treatable/curable
- Early treatment for OIs prolongs life!
- Some are preventable...



Common Ols



Thrush

- Infection from a fungus called *Candida albicans*
- Can affect the mouth, esophogus or vagina

Oral Thrush

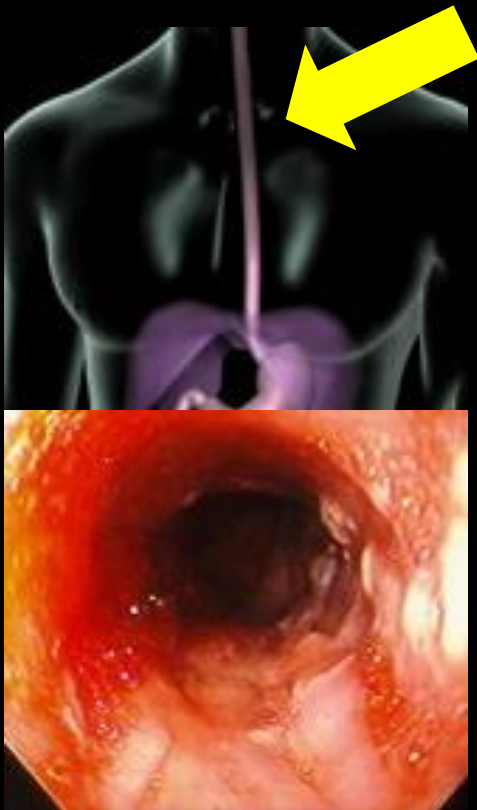


White patches – tongue, roof of mouth, back of throat

- Most common & often 1st OI
- $CD4 < 200$
- Can be: painless, sore, burning, change of taste
- **Treatment:** nystatin lozenges or mouthwash, fluconazole lozenges, pessaries, mouth wash
- **Prevention:** decrease sugar/sweets, brush teeth and rinse mouth after meals,



Esophogeal Thrush



Candida spread down past mouth & throat. Pain with swallowing & in mid-chest

- AIDS defining illness
- $CD4 < 100$
- Burning upper chest
- Pain with eating & swallowing
- Unable to eat due to pain → results in weight loss
- Treatment: fluconazole x 2wks

Meningitis



- Inflammation of lining around the brain (meningis)
- Causes by fungus (cryptococcus), TB, virus, bacteria

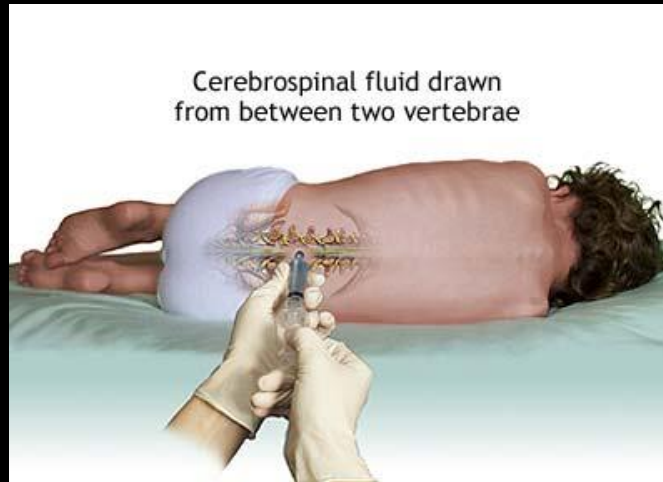
If you develop a
new severe headache
it is urgent for you to go
to the clinic or hospital



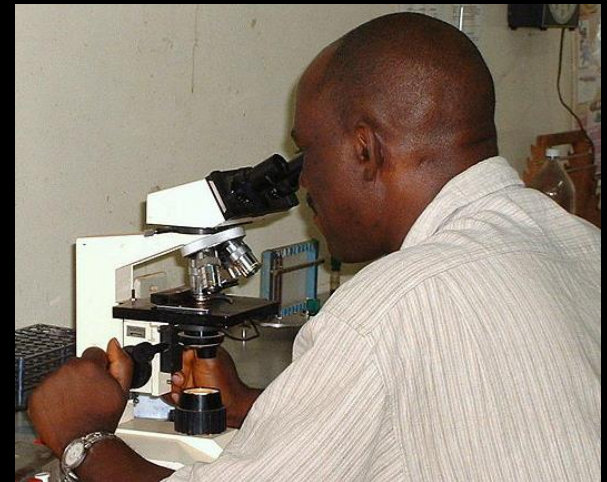
Meningitis is very serious



You must go to
clinic or hospital



Lumbar Puncture:
doctor takes fluid from
around spine

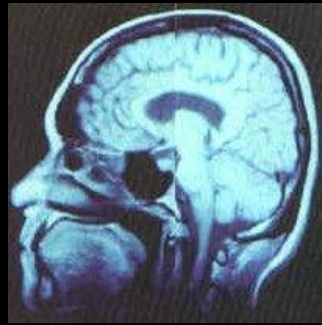


Laboratory checks
fluid (CSF) for TB,
crypto or bacteria

TB Meningitis



TB infection



Inflammation
around the brain



Severe headache

-
- **Feels same as Cryptococcal Meningitis:** Stiff neck, loss appetite, fever → can progress to nausea/vomiting, tiredness, blurred vision, confusion, slurred speech, trouble walking, fits
 - **Treatment:** Rifampin → Rifampin (same as for pulmonary TB)

Skin

HIV Affects the Skin



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- **Changes** with our skin is common due to HIV
 - Dark or light patches
 - Itching
 - Dryness
 - Bumps
- **Report** any rash affecting mouth or eyes or with fever!

Herpes Zoster ‘shingles’



- Very painful rash
- Only one side of the body (can be on face, trunk, chest, leg, etc)
- Caused by Chicken pox virus
- Occurs when immune system damaged, even CD4 above 200

Treatment

- Acyclovir for 2 weeks
- May shorten number of days
- May reduce pain after healing (post-herpetic neuralgia)

KS – Kaposi Sarcoma



- Brown spots, flat or raised
- Hard painless
- A kind of cancer
- Occurs in advanced AIDS
- Caused by a virus (HHV-8)
- Can also occur inside of the body (lungs, abdomen, etc)

Treatment

- Best treatment is ARVs
- Some patients treated with chemotherapy also

Moluscum contagiosum



Skin lesions

- Painless rash
- often on face, trunk, etc
- Skin colored, clear, raised

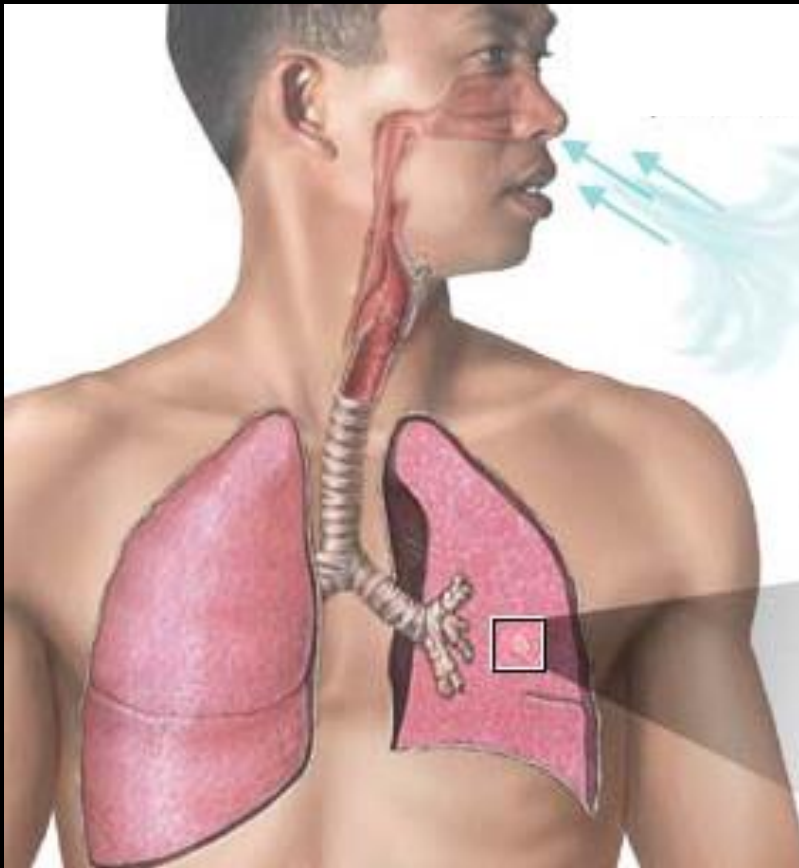
Cause

- MC virus
- Occurs in advanced HIV-disease

No treatment

Disappears if immune system restored (ARVs)

Pneumonia

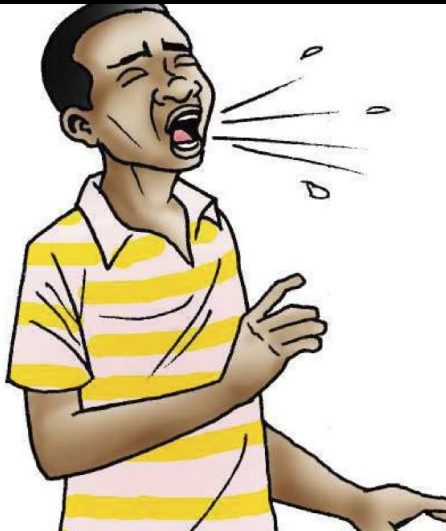


- Infection in the lungs
- Very common in HIV-positive patients

Pneumonia

3 common kinds if you have HIV:

1



Bacterial
pneumonia

2



TB

3



PCP

Bactrim prophylaxis

Should be taken everyday if your CD4 is less than 350



- Prophylaxis means ‘to prevent’
- Bactrim helps prevent **PCP pneumonia**
- If you are not already taking Bactrim, ask your doctor for it
- WARNING: Over ½ of us get a rash from Bactrim in 1st 1-2 wks
- You can stop Bactrim after your CD4 goes above 350



**KNOW YOUR
HIV STATUS**

95% of South Africans have never tested and do not know their HIV-status

Day 4

HIV TESTING SERVICE



What happens when you offer
your patient an HIV test?

HTS

HIV TESTING & SERVICES



HIV rapid test

Nurse or counselor will prick the finger



Test one drop of blood

to see if antibody against HIV in your body



Our body makes HIV-antibodies after we get infected

Is the HIV rapid test
always accurate?

The 'Window Period'

When a newly HIV-infected person will test HIV-negative



Unprotected sex with
an HIV+ persons

Transmission of the virus



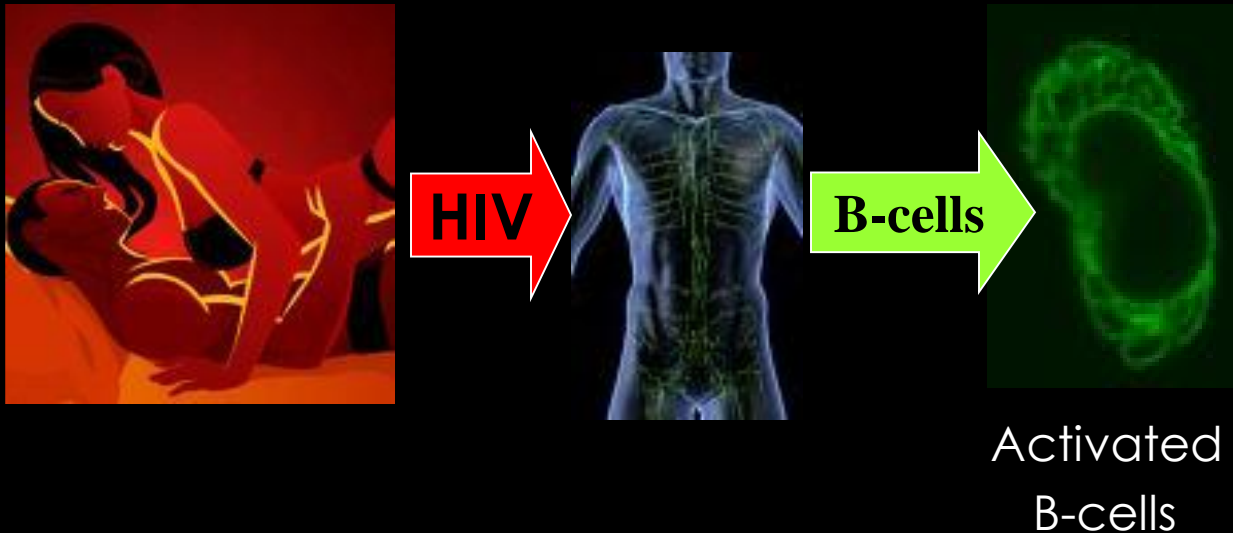
Sexual transmission
of HIV

Virus begins replicating immediately



HIV begins to
replicate
in the body

Our body activated its B-cells to fight



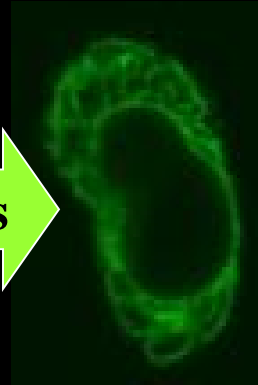
B-cells make antibodies against HIV



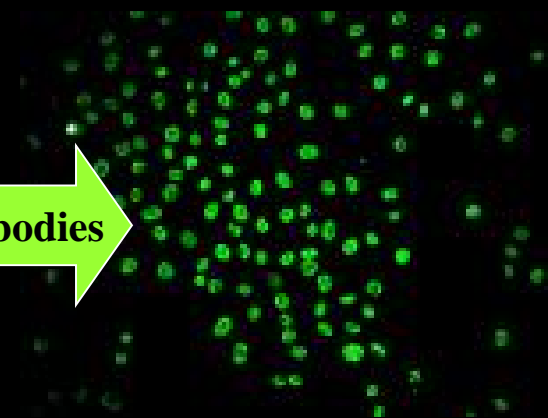
HIV



B-cells

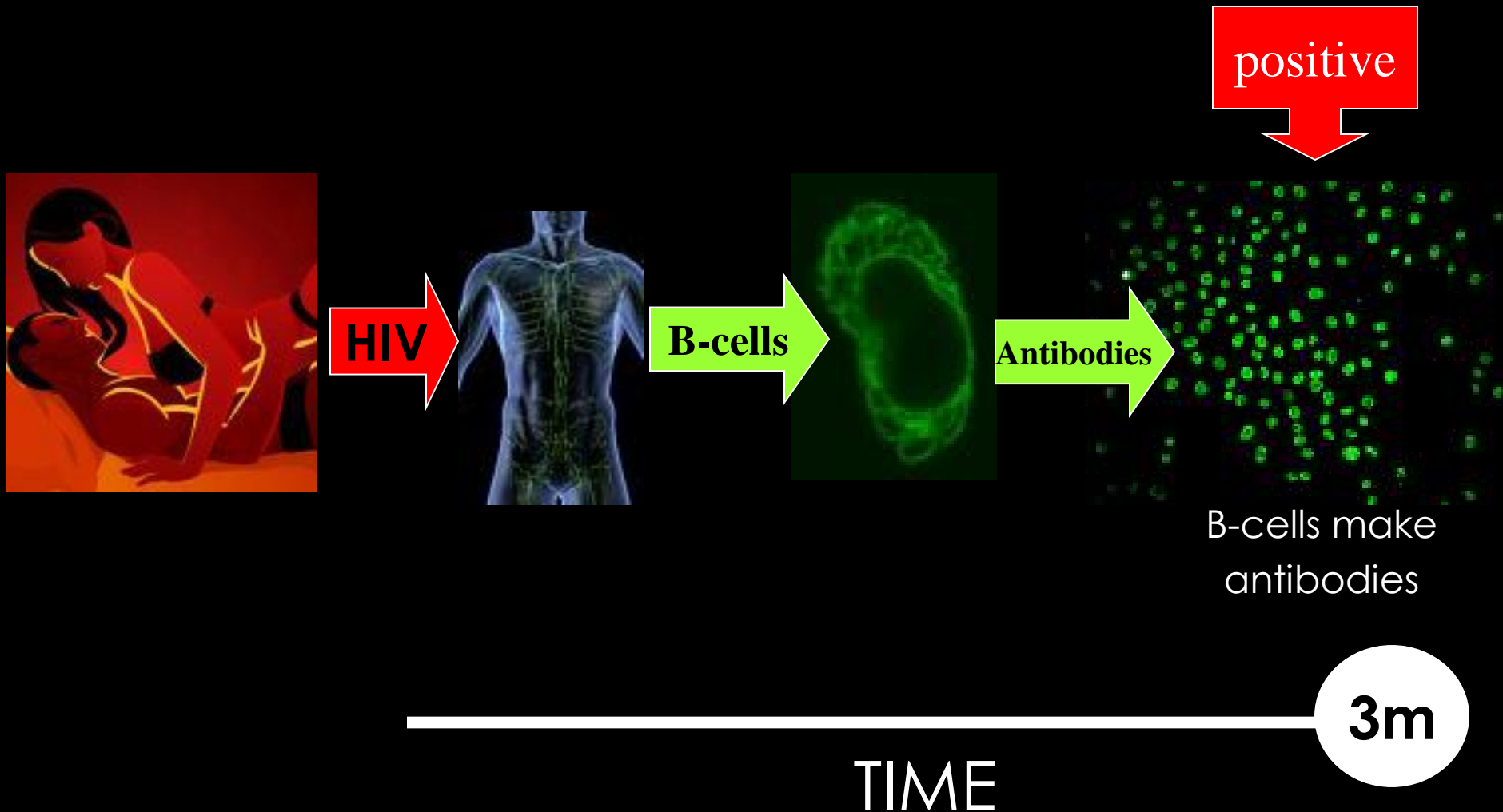


Antibodies



B-cells make
antibodies

It takes 3m to make enough Abs



You test negative before HIV exposure

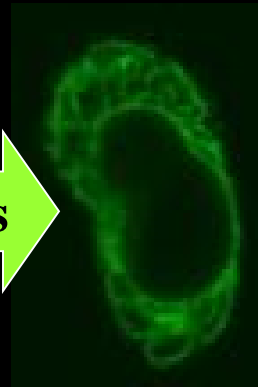
Test neg



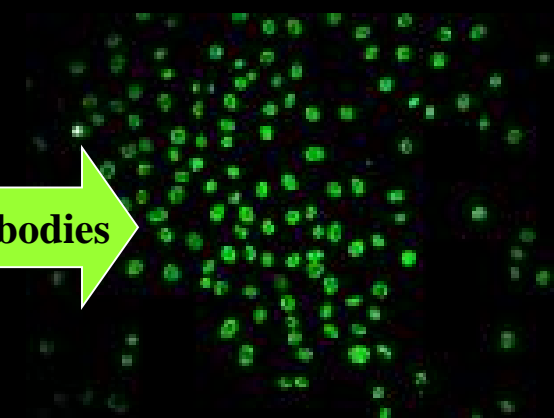
HIV



B-cells



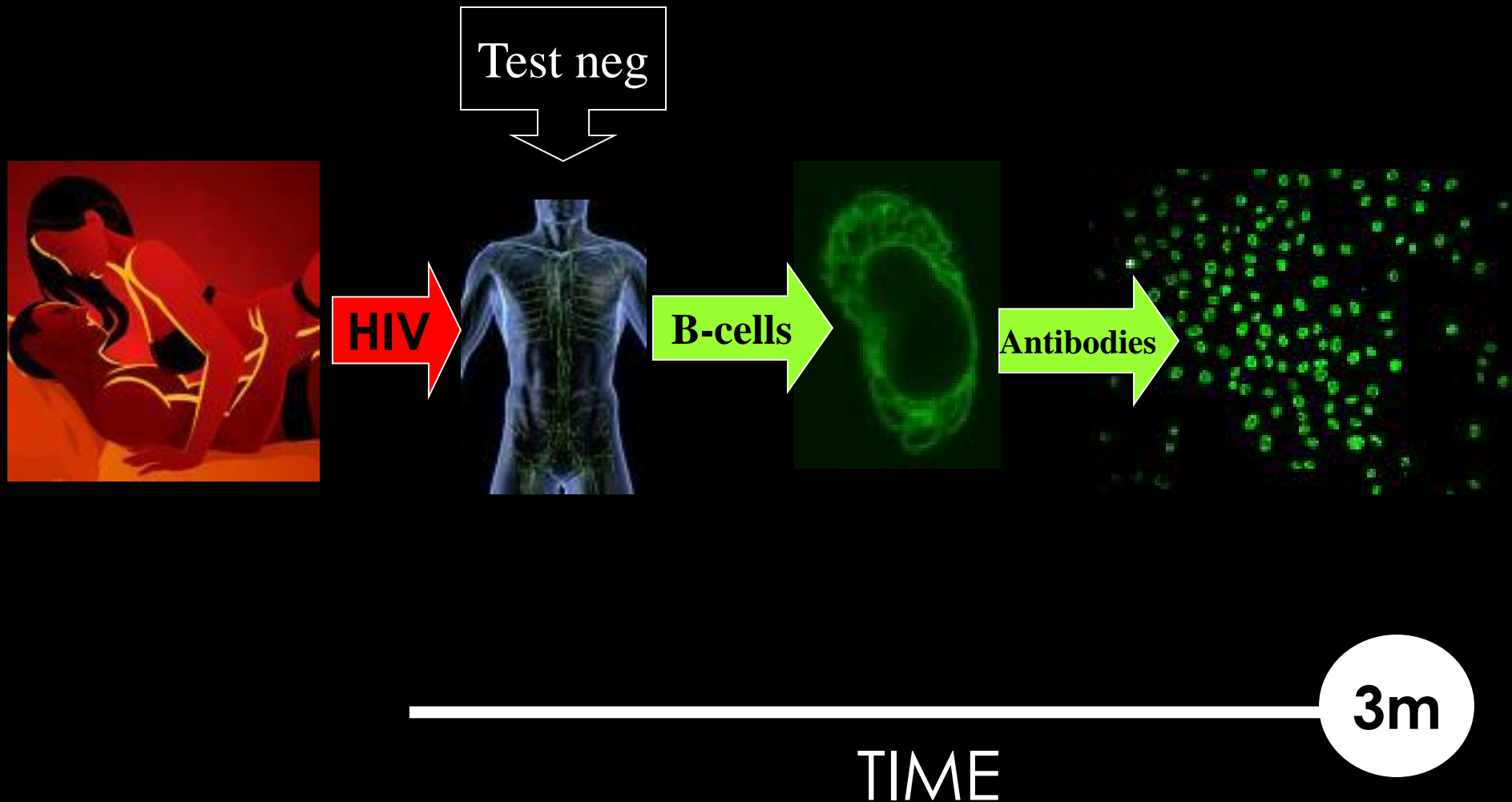
Antibodies



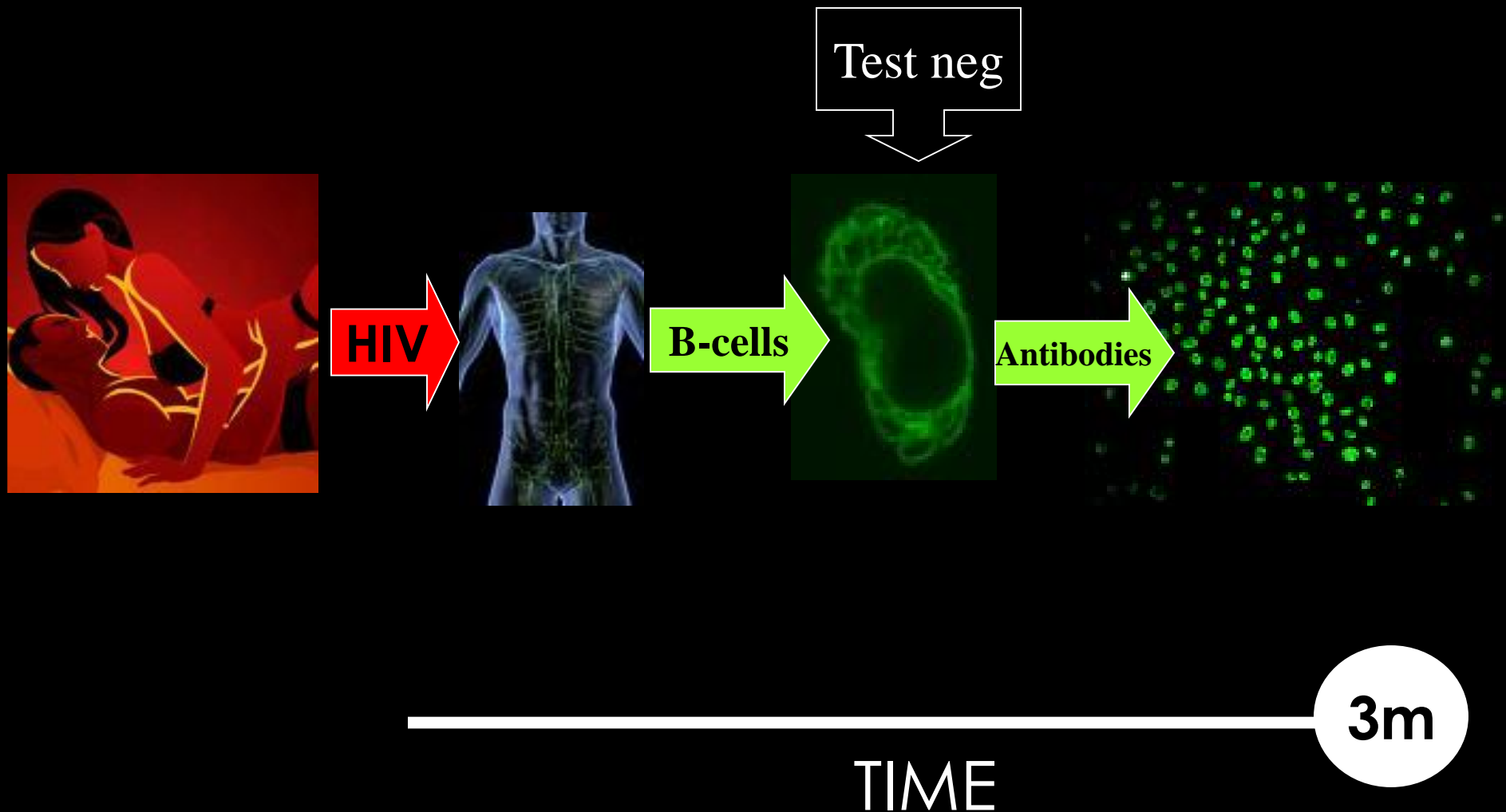
3m

TIME

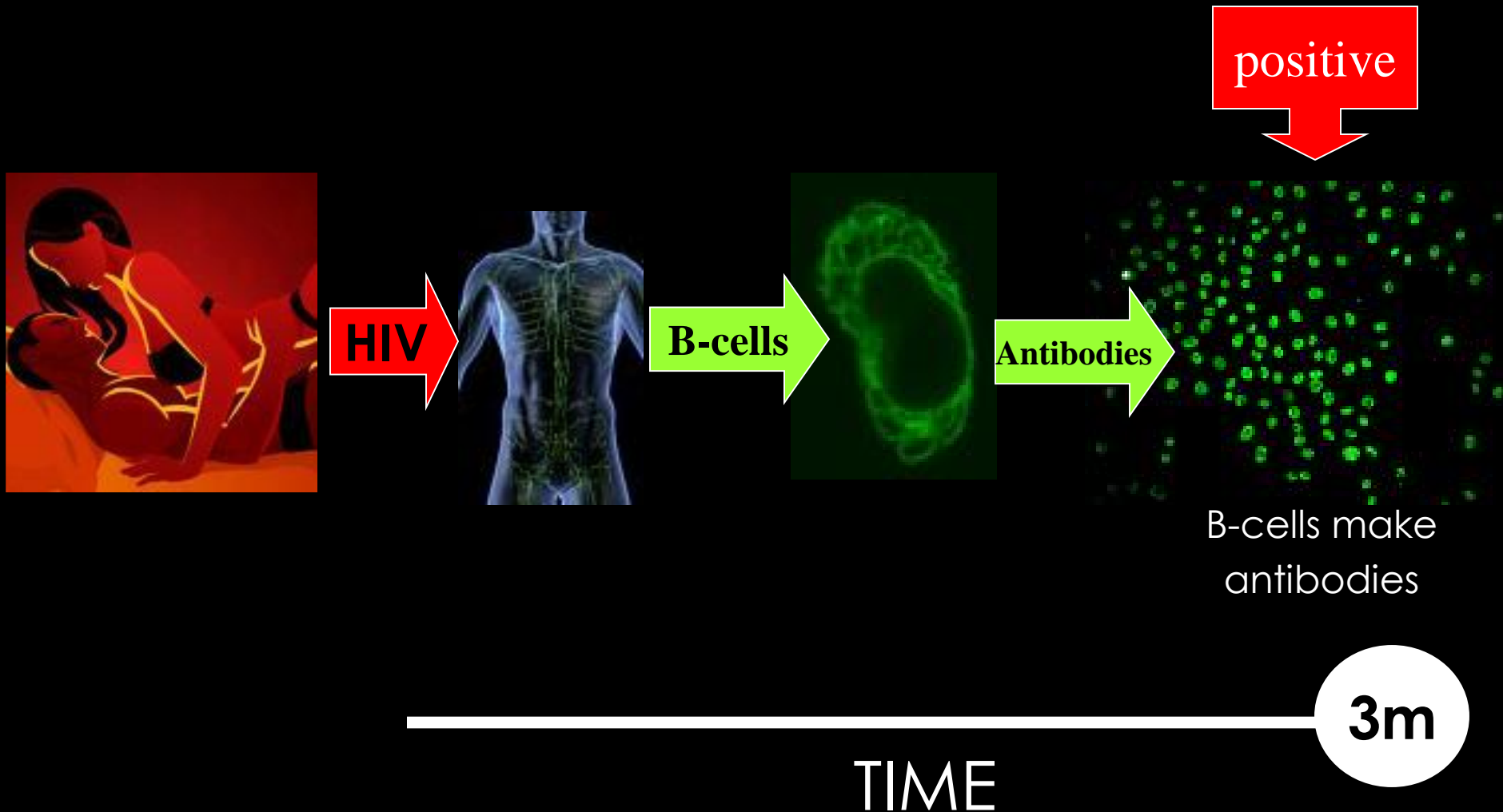
And negative during first few months



And negative during first few months



**HIV-positive only after
enough antibodies
are made**



During the window period,
HIV is replicating very rapidly
& the newly infected
person is very
infectious, but
tests negative

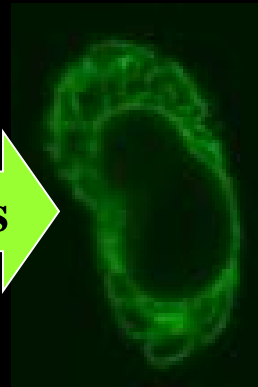
HIV



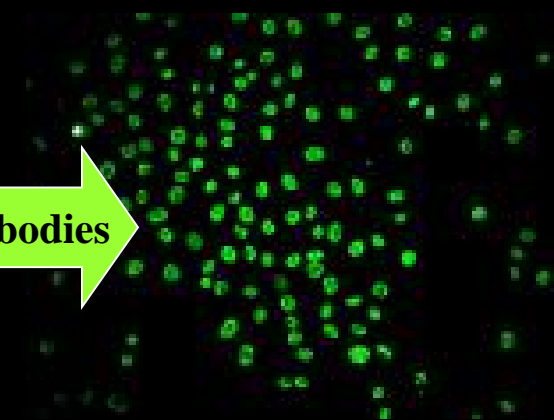
HIV



B-cells



Antibodies



New sexual partner

teach your patients to protect themselves & others

In 3-months



Talk



Test together

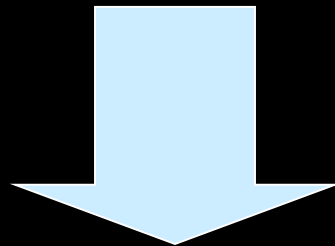


Condoms



Repeat test

Another reason for condoms



STI's increases spread of HIV



- You cannot always see if your partner has an sexually transmitted infection (STI)
- They may not tell you or they may not know they have an STI
- An HIV-negative person with an STI is more vulnerable to becoming HIV infected
- An HIV+ person with an STI passes HIV more efficiently



Genital Herpes

- Did you know 1 in 5 persons have genital herpes?
- Herpes causes painful genital sores
- Like HIV, there is no cure for herpes.
- If you get herpes, you can expect a lifetime of recurrent ulcer outbreaks.
- Only condoms decrease risk of STIs, including herpes & HIV



This doesn't replace a condom.

Take a Shower!

love
Life



Confidentiality is a
patients legal right

