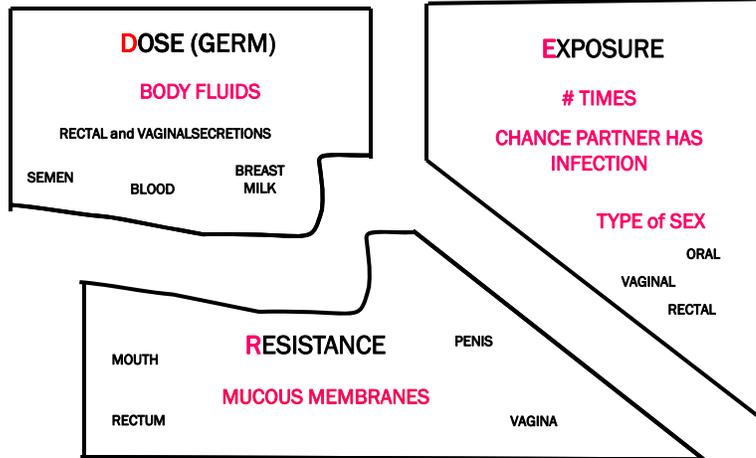


# **The Transmission Puzzle and STD-HIV Connection**

## **Understanding Risk**

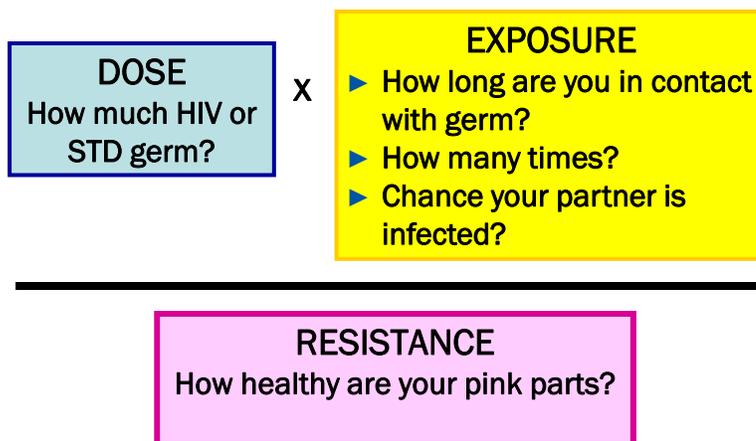
- ▶ What are my chances of getting HIV or other STDs through sexual contact?
- ▶ How does having an STD increase my chances of getting HIV?

## The Transmission Puzzle



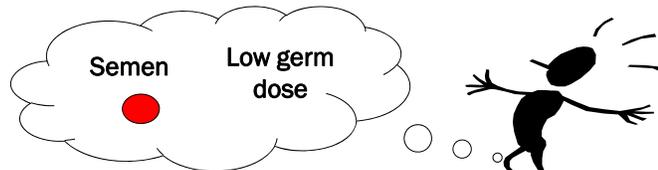
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## The Transmission Puzzle (continued)

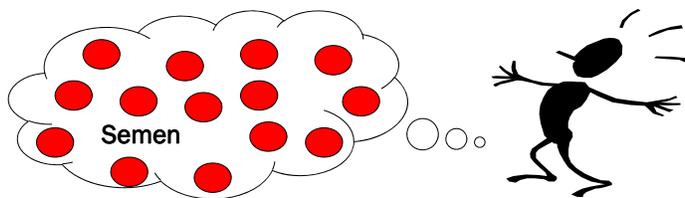


4

## DOSE—How Much Germ?



High germ dose - INCREASES risk



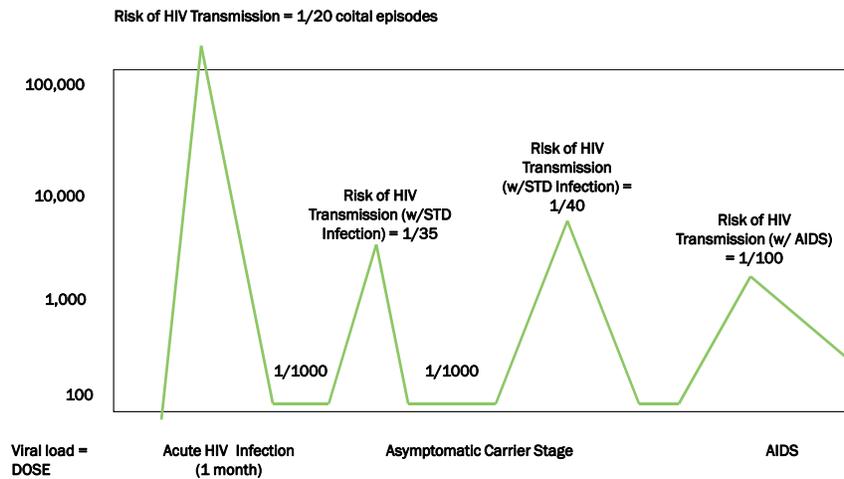
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## Dose—How Much Germ Depends On:

- ▶ Which fluid
  - Semen, blood, rectal and vaginal secretions, breast milk
- ▶ Which stage of HIV a person living with HIV/AIDS (PLWHA) is in
  - Acute HIV, carrier, AIDS
- ▶ Whether the PLWHA also has another STD
  - Another STD will increase HIV viral dose

6

## Dose Depends on Stage of HIV (estimates, Cohen, 2005)

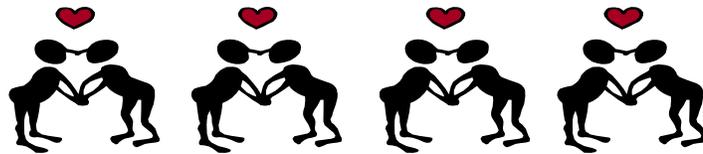


## Dose—Depends on Whether PLWHA Also Has an STD

- ▶ If a PLWHA has an STD, the amount of HIV in his semen and rectal secretions increases—**even though the viral load in the blood may be undetectable**
- ▶ Most persons with STDs have no symptoms

## Exposure Depends On:

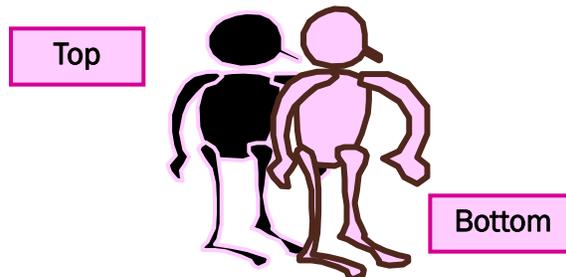
- ▶ Type of sex you have (how long you are in contact with the germ)
- ▶ How many times
- ▶ How likely it is that your partner has HIV or another STD



9

## Exposure—Depends on the Type of Sex You Have

- ▶ How long is the germ in my body?
  - For rectal, vaginal, or oral sex
- ▶ Depends on who has the semen in their body after sex



10

## **Exposure—Depends on How Long the Germ Is in Your Body**

Germs can live in semen inside the rectum (and vagina) for:

- ▶ STDs = up to 3 days after sex
- ▶ HIV = up to 12–24 hours

So, you can be exposed to STD or HIV germs for ½ to 3 days each time there is an ejaculation

11

## **Exposure—Depends on How Long the Germ Is in Your Body (continued)**

The longer the germ is in the body, the greater the risk:

- ▶ Bottoms: Semen in rectum—hours to days
- ▶ For women: Semen in vagina—hours to days
- ▶ Tops: Penis in rectum—minutes
- ▶ For straight men: Penis in vagina—minutes
- ▶ Penis in mouth or mouth in vagina—minutes

12

## Exposure—Depends on How Many Times You Have Sex

- ▶ The more times you have unprotected sex with partners whose HIV/STD status is unknown to you, the greater the chances of infection
- ▶ Tops are at less risk for HIV for one episode of rectal sex
  - HOWEVER, the more times they have unprotected rectal sex, the higher their risk

13

## Exposure—Depends on Chance Your Partner Is Infected

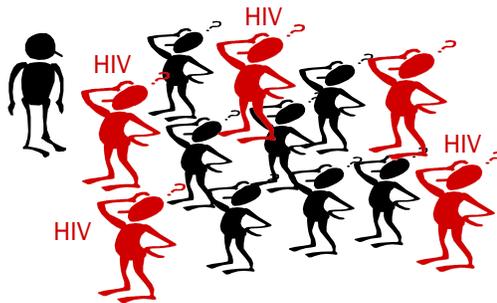
What are the chances?

Partner A		No high-risk behaviors Recently STD/HIV tested negative Discussion	
Partner B		High-risk behaviors Never STD/HIV tested No discussion	

14

## Exposure—Depends on Chance Your Partner Is Infected (continued)

Why monogamy may not be low risk:



Sex once/week with 13 one-night stands (different partners) over 3 months = 5 chances to get HIV

15

## Exposure—Depends on Chance Your Partner Is Infected (continued)

If mutually monogamous:

- ▶ Both you and your partner are tested negative for STDs/HIV
- ▶ And you repeat the testing in 3 months to account for the “window period”

Then, mutual monogamy with an uninfected partner is a recommended prevention option

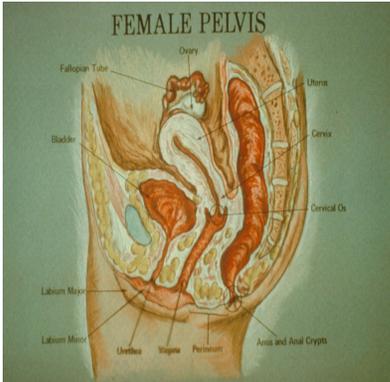
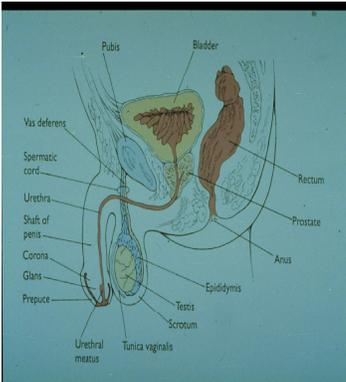
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# Resistance



How healthy are my pink parts?  
That is, the tissue (mucous membranes) inside the mouth, rectum, urethra, and vagina

# Pink Parts (Mucous Membranes)

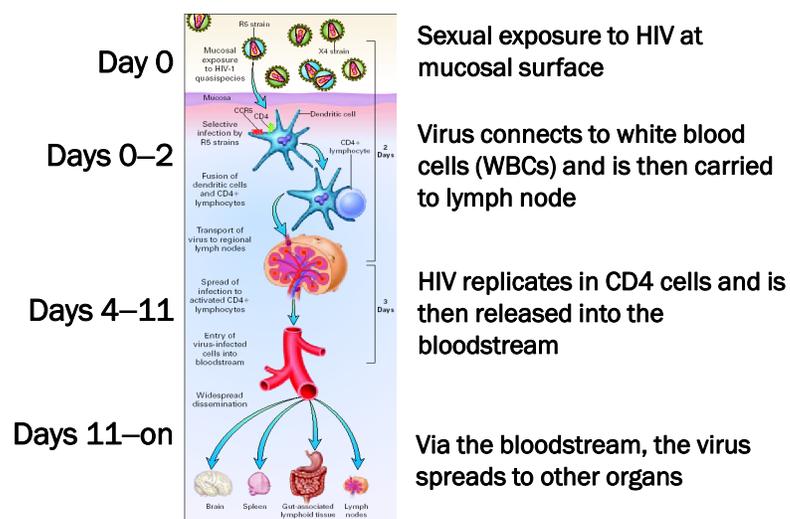


## Resistance—Depends on How Many White Blood Cells!

- ▶ HIV infects certain types of white blood cells (WBCs) on pink parts
- ▶ If the WBCs on your pink parts increase in number (due to an STD or inflammation), it is easier to get HIV

19

## How Does HIV Get Into Your Body?



20

## How Healthy Are My Pink Parts?

### Healthy Pink Parts



- ▶ No sores or abrasions
- ▶ No STDs or other source of inflammation—**few WBCs**

### Unhealthy Pink Parts



- ▶ Sores—pink parts not intact
- ▶ Has an STD or other source of inflammation—**many WBCs**

21

## The Transmission Puzzle—Example

How much  
germ  
**Average**

x

Number and type  
of exposure  
**Average**

---

Resistance of pink parts  
**Average**

Chance of infection: **Average** ↔

22

## Example—You *Don't* Have HIV

And your partner is in early phase of HIV infection or has an STD:



Chance of infection: ↑ Higher

If your sexual partner has a lot of HIV in his semen, your chance of getting HIV goes up

23

## Example—If You *Don't* Have HIV

And you are a Bottom:



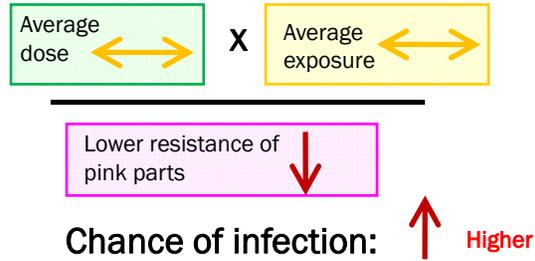
Chance of infection: ↑ Higher

If you have semen in your rectum, your chance of getting HIV goes up

24

## If You *Don't* Have HIV

And you have an STD:

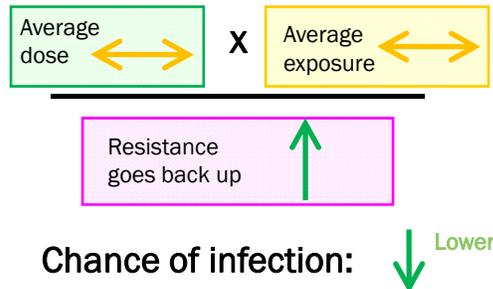


If you get an STD your resistance goes down—  
so your chance of getting HIV goes up

25

## If You *Don't* Have HIV

And you have an STD, but get it treated:



If you get treated for an STD and recover, your resistance  
goes back up—so risk of getting HIV goes down again

26

## Transmission Puzzle

- ▶ Reducing your chances of getting HIV means
  - Decreasing dose and exposure
  - Increasing resistance
- ▶ You can use the Transmission Puzzle to help you **PREVENT** getting HIV and other STDs
- ▶ Stay tuned for Session 3!