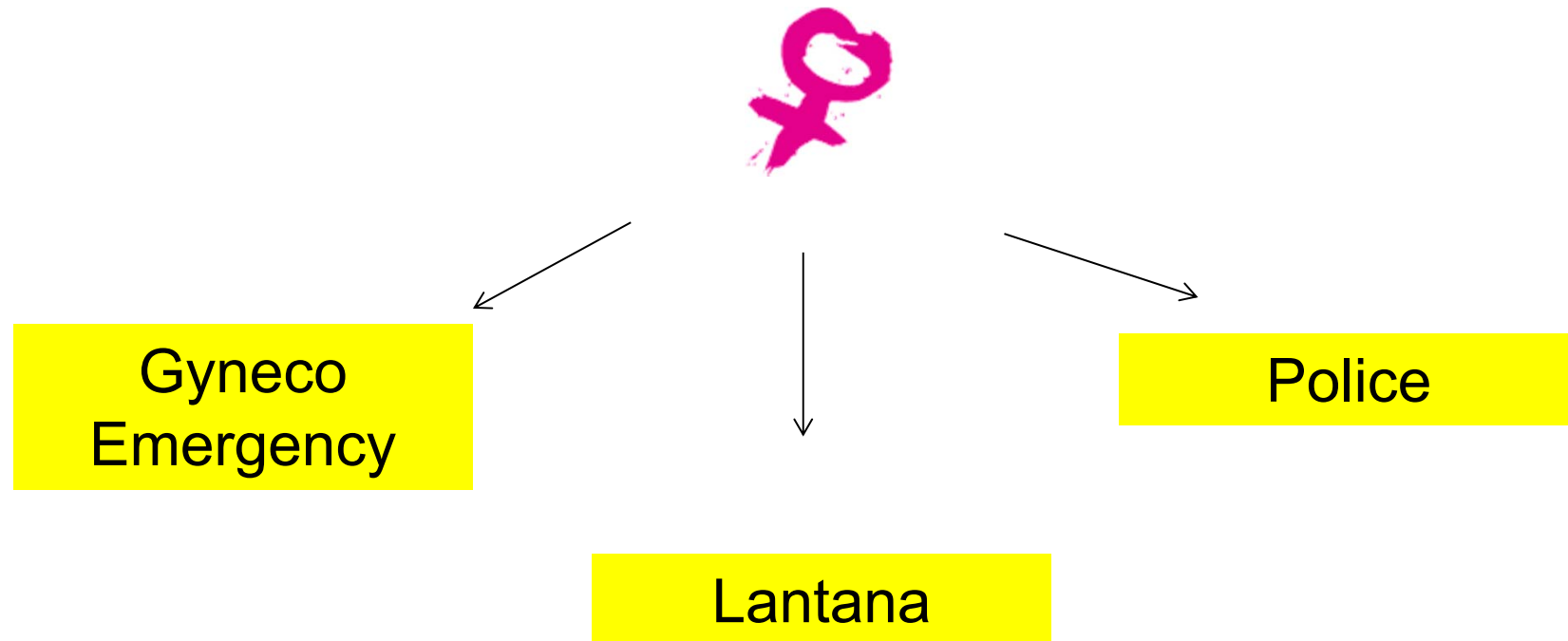


# **Postexposure Management After Sexual Violence**

aidsfocus.ch conference, 10 April 2014, Bern

Prof. Hansjakob Furrer  
Universitätsklinik für Infektiologie  
Inselspital

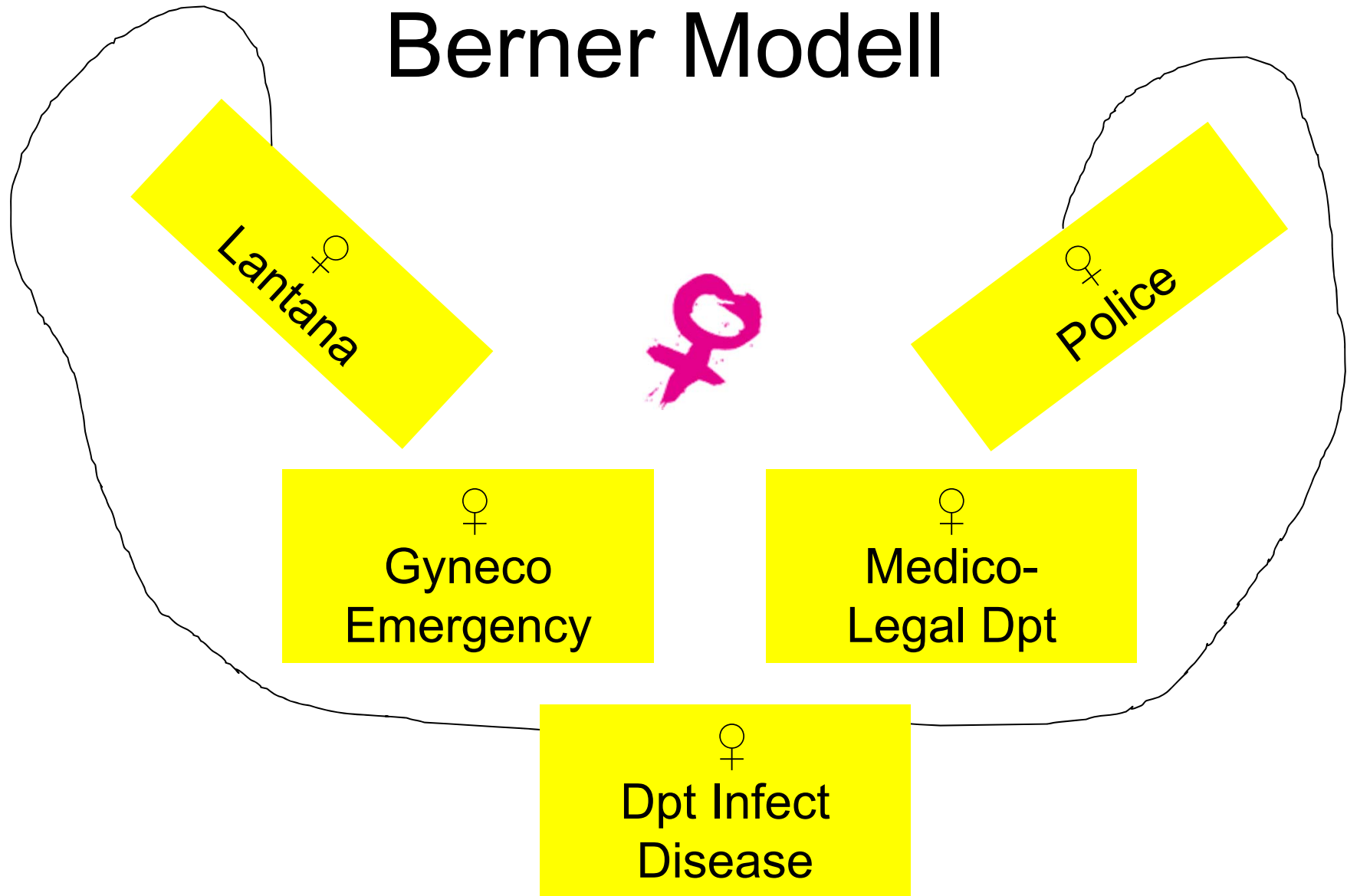
23 year old women  
presents at the emergency department  
after a sexual assault, most probably rape



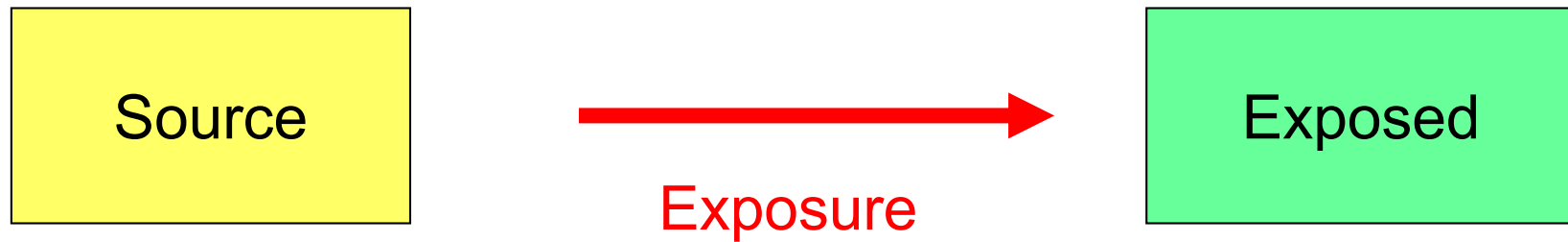
# Content

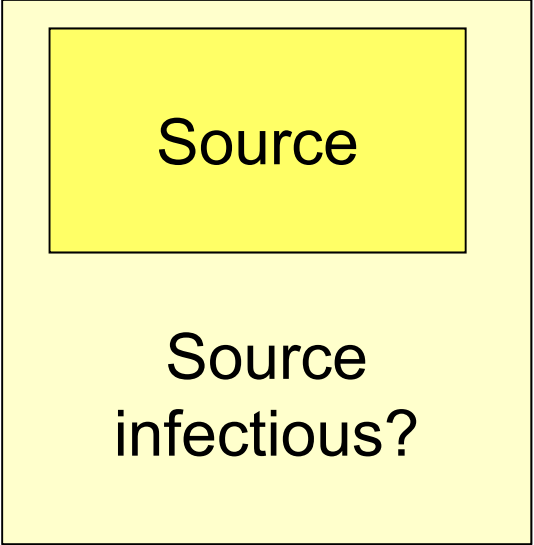
- Risk of sexually transmitted infections
- Course of HIV infection
- Measures
  - Preemptive treatment
  - Targeted treatment
  - Vaccination
  - Postexposure prophylaxis
  - Follow-up

# Berner Modell

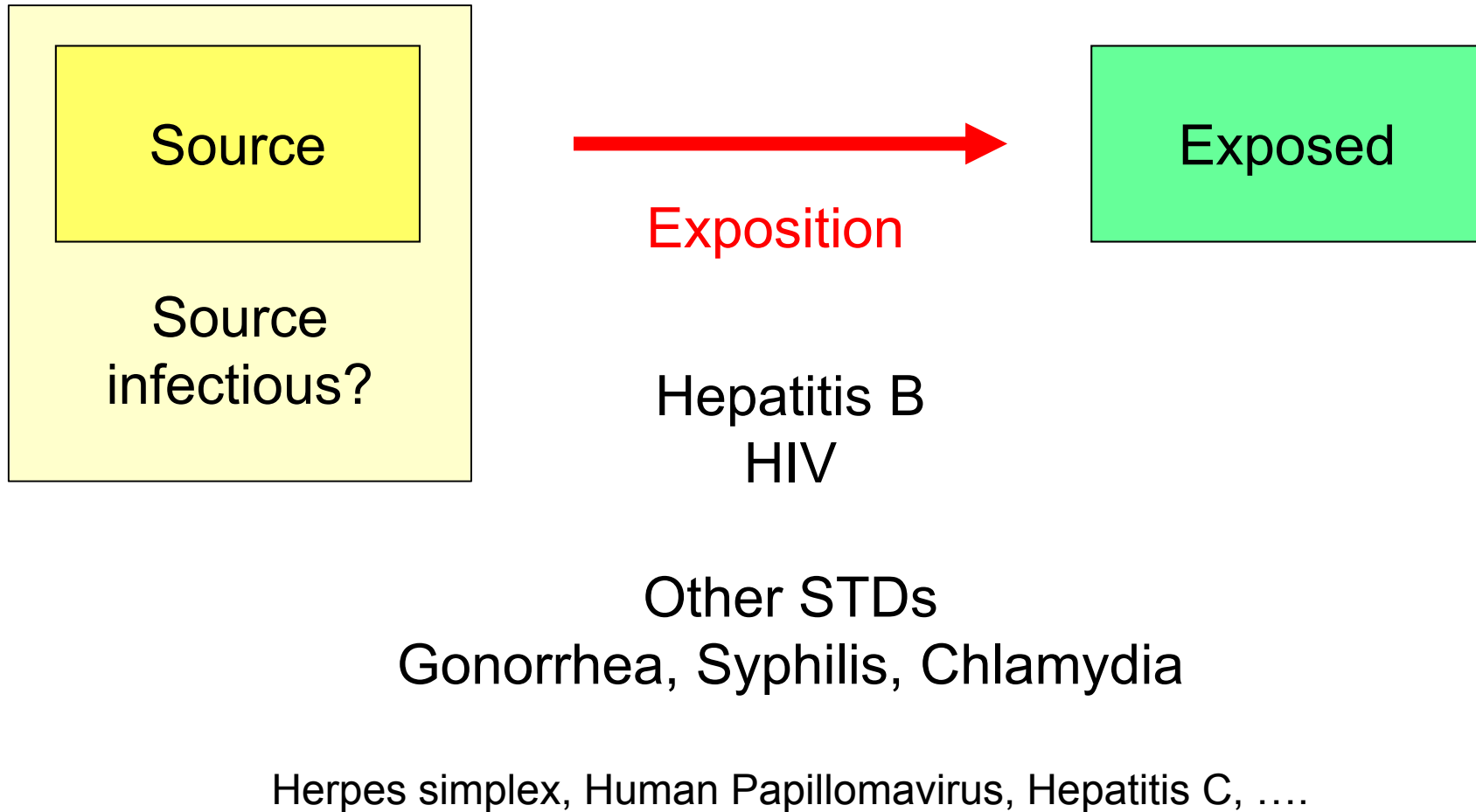


# Sexual exposure

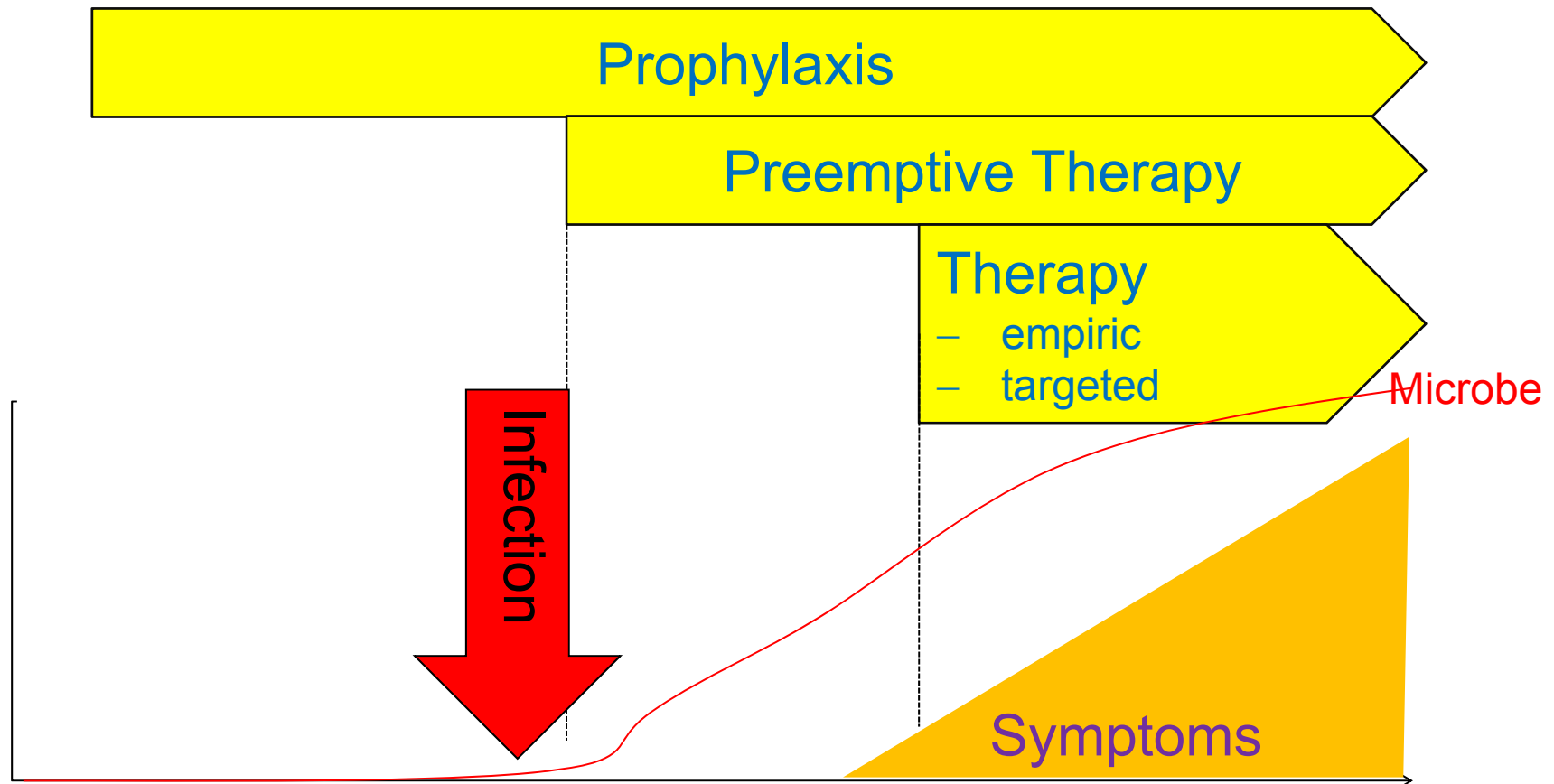




# Sexual exposure



# Antimicrobial Treatment

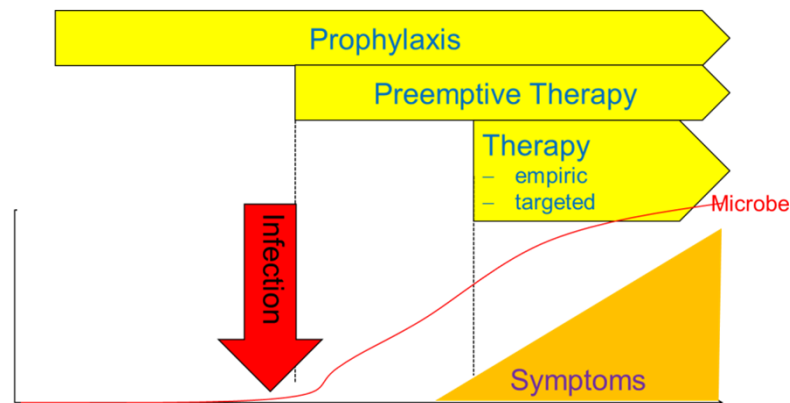




23 year old women  
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## Bacterial STD

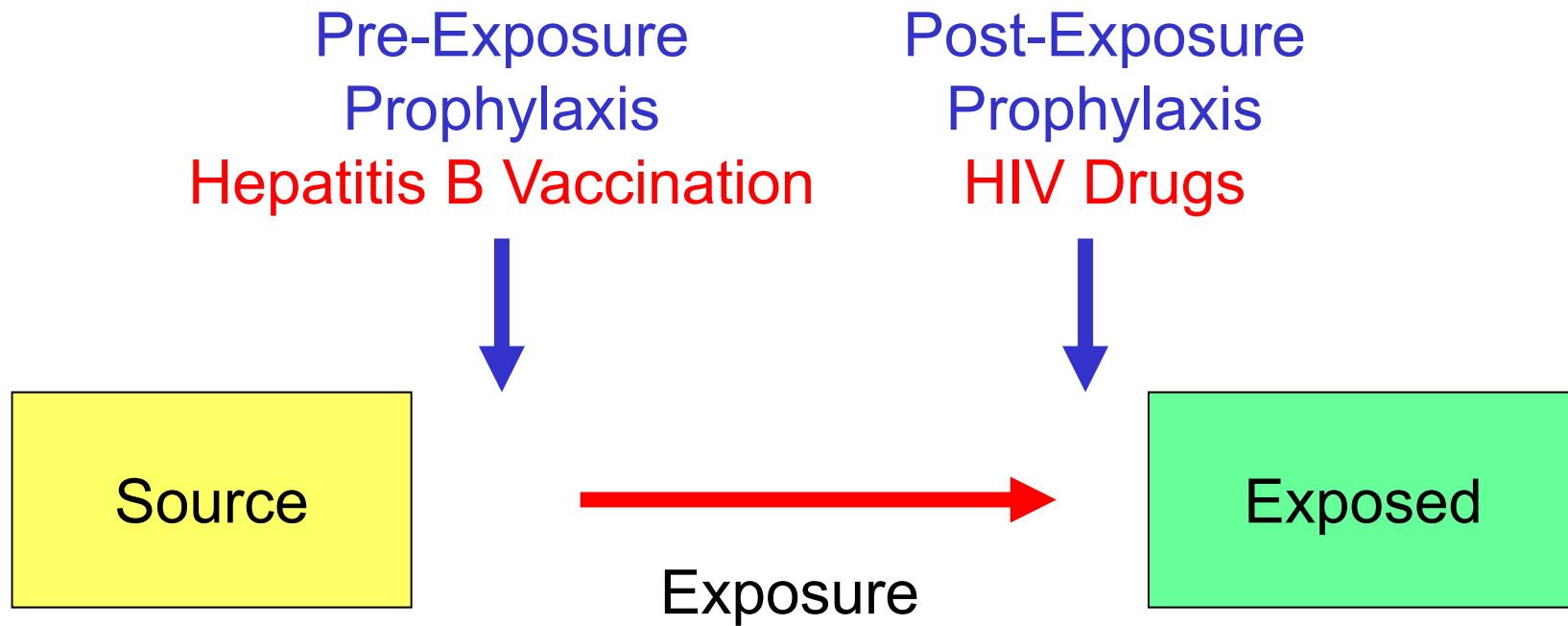
### Syphilis/GO/Chlamydia



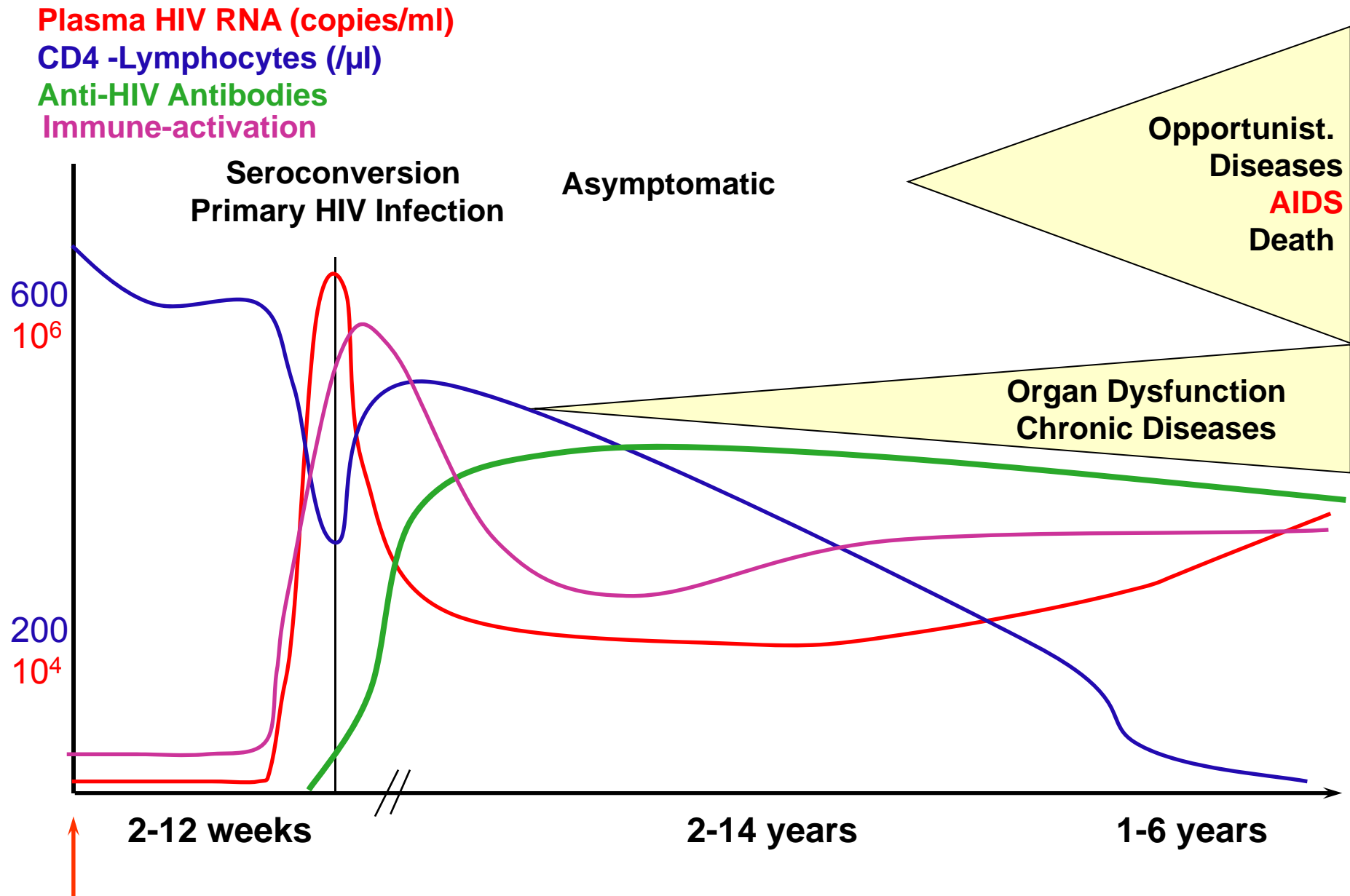
Either

- **Preemptive Therapy at time of presentation**
  - e.g. Ceftriaxon/Azithromycin
- **Therapy after diagnosis**
  - after ca 14 days (GO, Chlamydia)
  - Several weeks (Syphilis)

# Hepatitis B and HIV

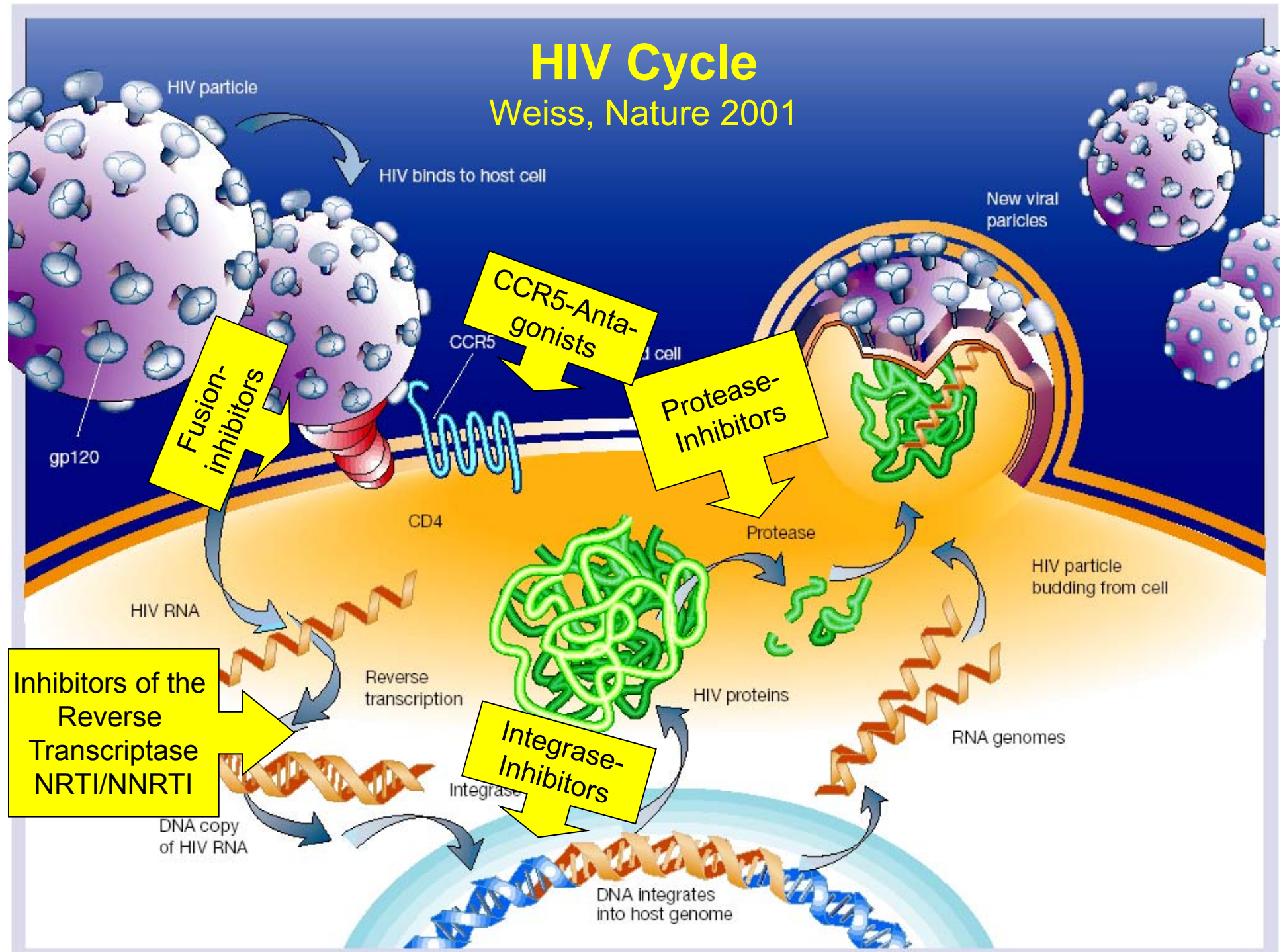


# Natural history of HIV-infection

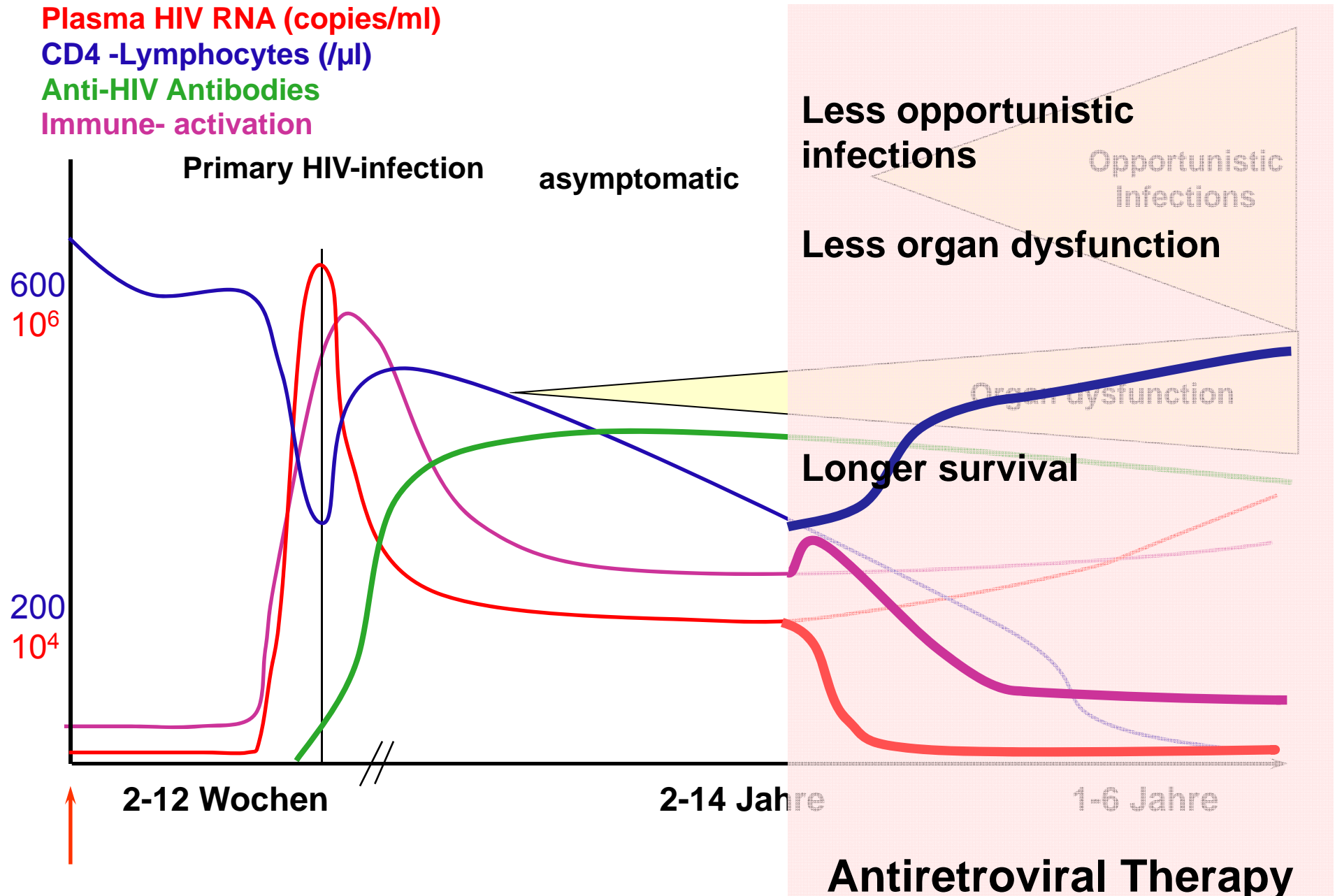


# HIV Cycle

Weiss, Nature 2001



# Verlauf der HIV-Infektion



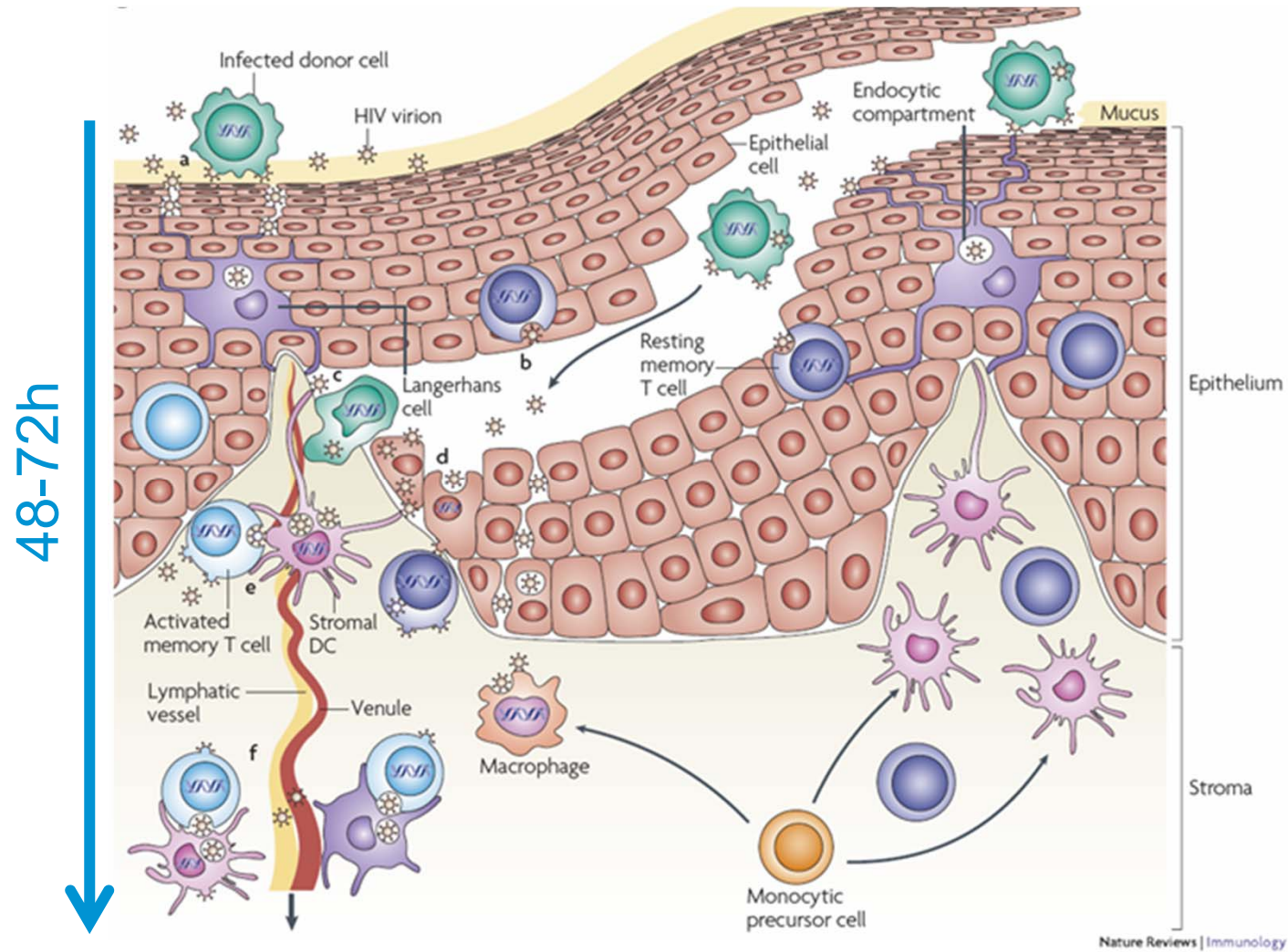
# HIV-Transmission Risk

Exposure	Risk	
Blood Transfusion	>90 %	/1
Needle exchange	0.7 %	/100
Receptive anal intercourse	0.5 % (bis 3%)	
Percutaneous needle stick	0.3 %	/1000
Receptive vaginal intercourse	0.1 %	
Insertive anal intercourse	0.07 %	
Insertive vaginal intercourse	0.05 %	/10'000
Reptive oral intercourse with ejaculation	0.01 %	
Insertive oral intercourse	0.005 %	/100'000

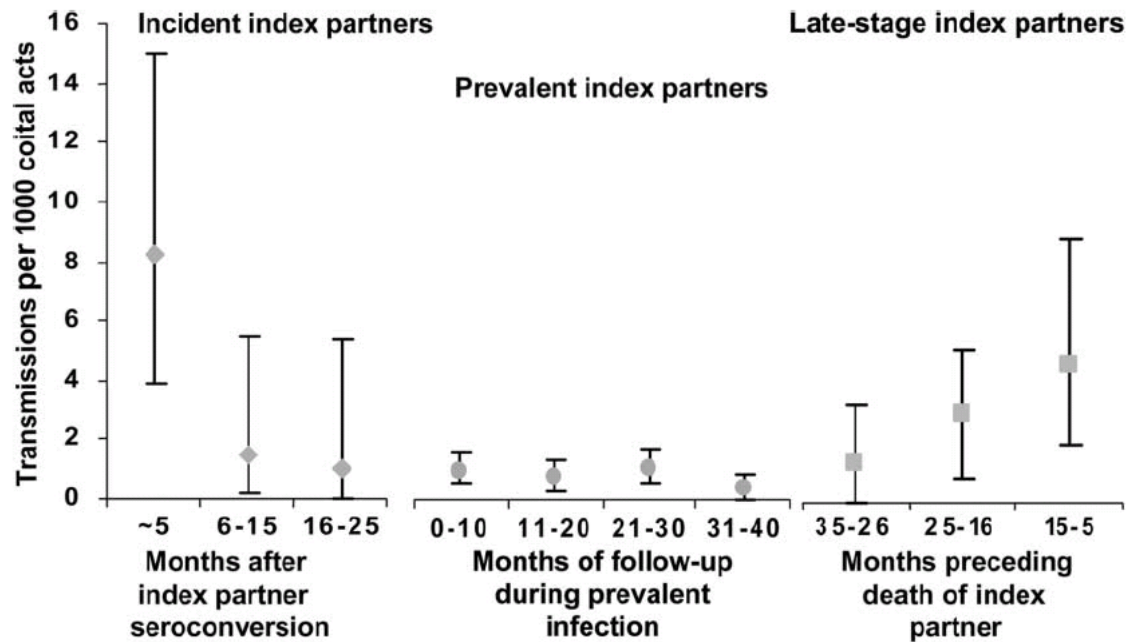
CDC. Antiretroviral postexposure prophylaxis after sexual, injection-drug use, or other nonoccupational exposure to HIV in the United States. MMWR 2005;54 (no.RR-2): 1-20



# First steps of infection



# Additional Risk Factors



**Figure 1.** HIV transmission per coital act, and 95% confidence intervals, by follow-up interval

High HIV- viral load	up to >30x
Viral load undetectable for 3 months	virtually no risk
Other sexual transmitted infections (GO, HSV, Syph)	up to 10x
No Circumcision	2-3x
Primary HIV-infection	10-100x



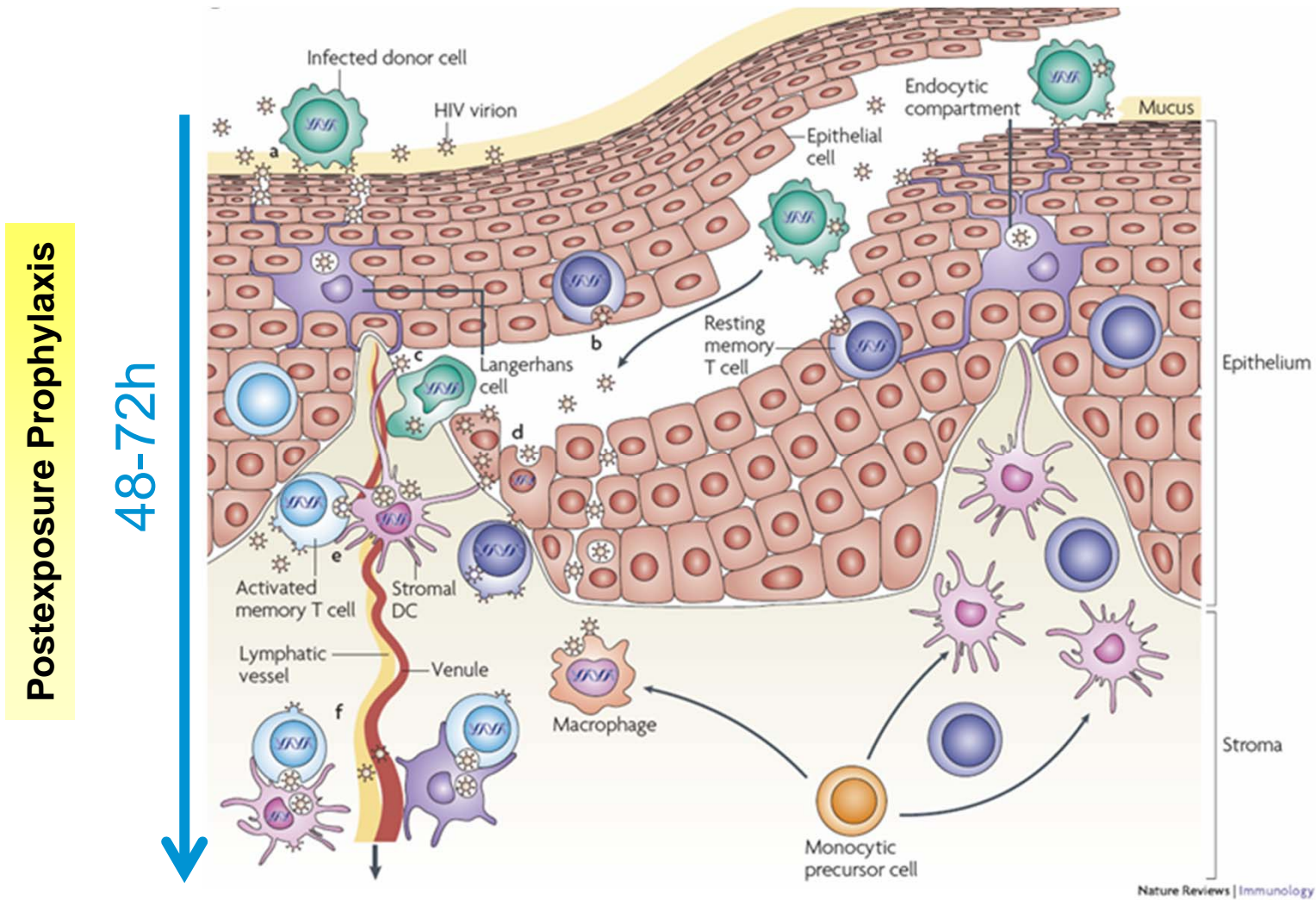
# Antiretroviral therapy as postexposure prophylaxis

## Does it work?

### Vaginal exposure in Rhesus Macaques

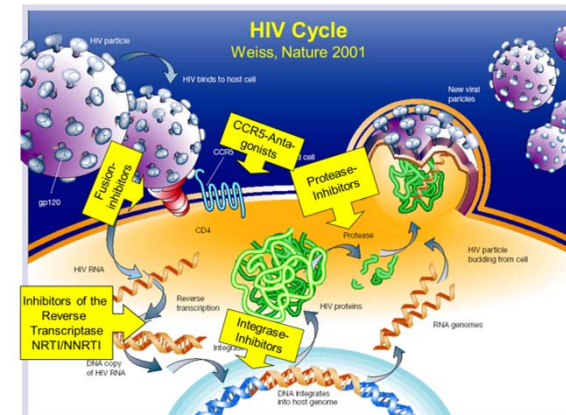
	HIV PCR / HIV-Antibodies (week)									
	0	1	2	3	4	8	12	16	20	24
Control	-/-	-/-	+/-	+/+	+/+	+/+	+/+	+/+	+/+	+/+
	-/-	-/-	+/-	+/+	+/+	+/+	+/+	+/+	+/+	+/+
	-/-	-/-	+/-	+/-	+/+	+/+	+/+	+/+	+/+	+/+
	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
12h	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
36h	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
72h	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
	-/-	-/-	-/-	-/-	-/-	-/-	-/-	+/+	+/+	+/+
	-/-	-/-	-/-	-/-	-/-	-/-	-/-	+/+	+/+	+/+

# Postexposure prophylaxis: as fast as possible!

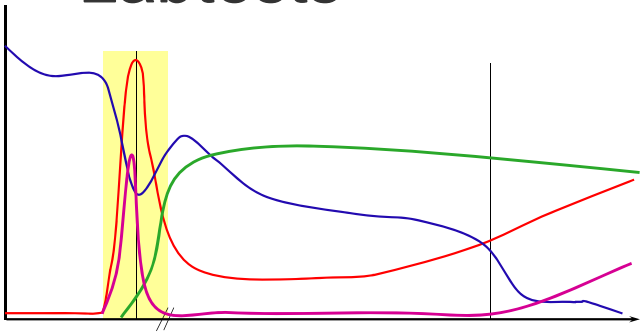


23 year old women  
presents at the emergency department  
after a sexual assault, most probably rape

- HBV vaccinated ?
  - No: vaccination
- Within 48 (72h) after assault
  - Start immediately with 3 antiretroviral drugs **PEP**
    - 2 NRTIs + Integrase Inhibitor
    - 3 NRTIs
    - 2 NRTIs + Protease Inhibitor
  - Test aggressor (source)



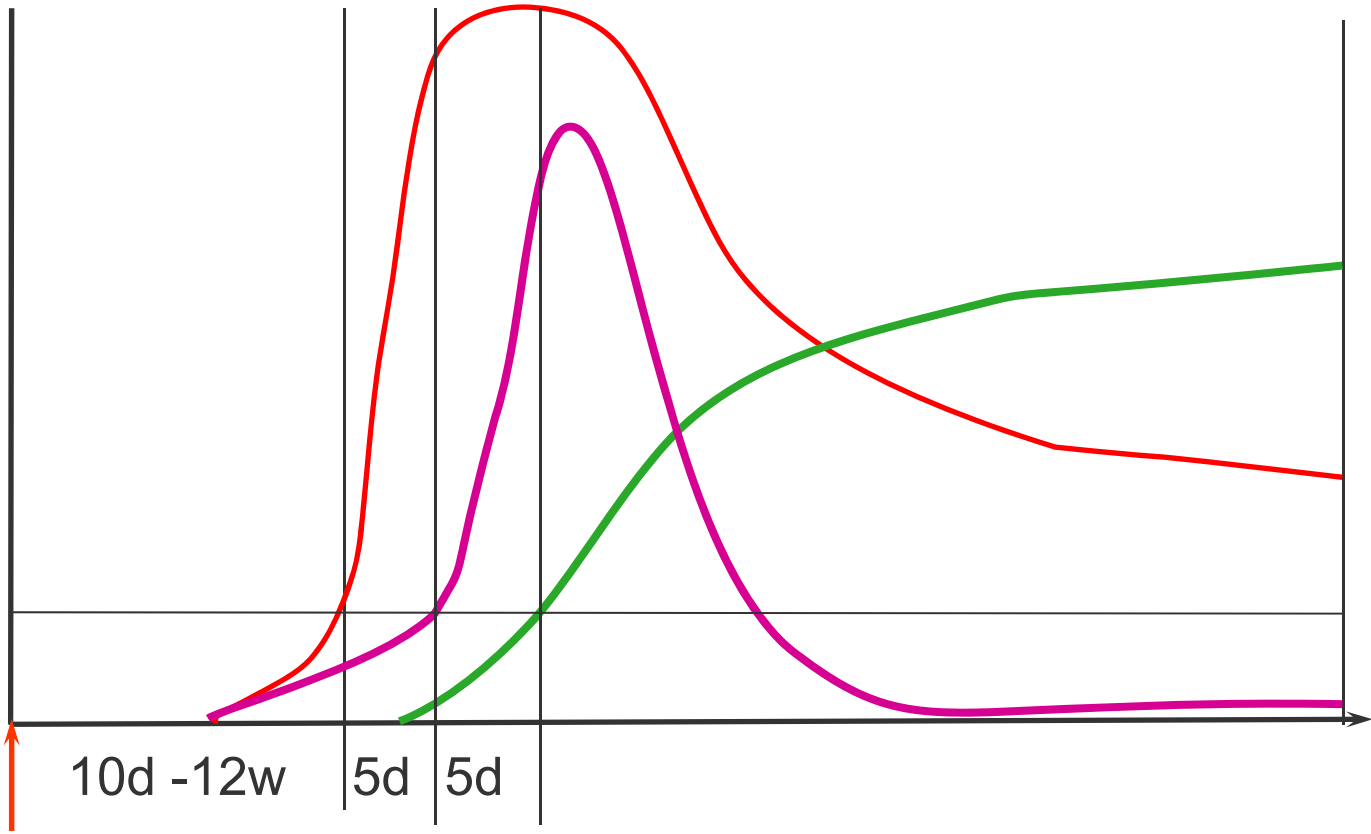
# HIV Seroconversion, primary HIV infection Labtests

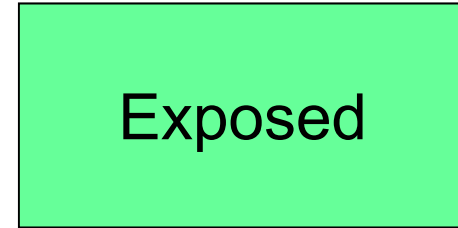
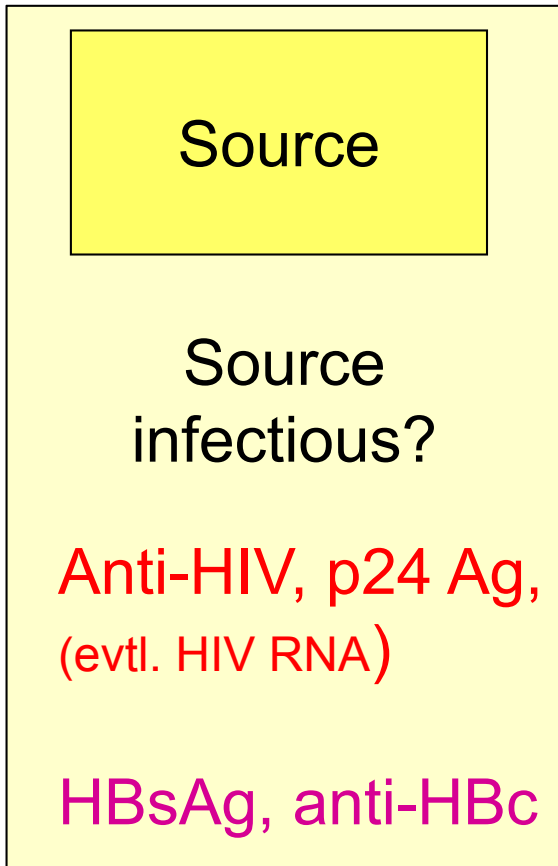


Klinische  
Symptome  
10-20 Tage

Plasma HIV RNA  
p24-Antigen  
Anti-HIV Antibodies

Detection limit

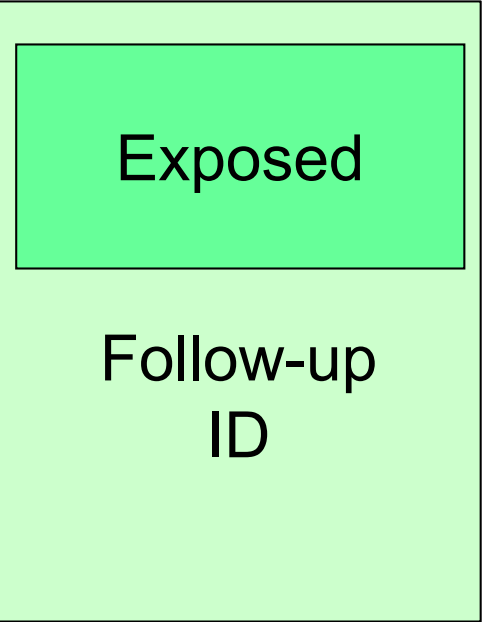




Source



Exposure

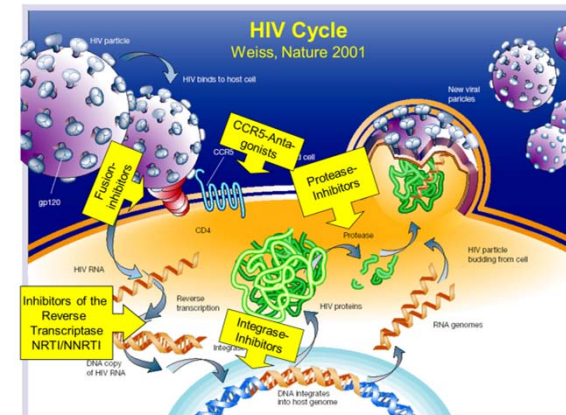


Exposed

Follow-up  
ID

23 year old women  
presents at the emergency department  
after a sexual assault, most probably rape

- HBV vaccinated ?
  - No: vaccination
- Within 48 (72h) after assault
  - Start immediately with 3 antiretroviral drugs **PEP**
    - 2 NRTIs + Integrase Inhibitor
    - 3 NRTIs
    - 2 NRTIs + Protease Inhibitor
  - Test aggressor (source)
    - Stop PEP if HIV-uninfected



## Exposed

Protection of sex partners (STD, HIV, HBV)

Exposure HBV: If vaccine protected no measures

Exposure HIV:

- PEP for 4 weeks
- clinical and lab controls
- serology for HIV 3 months after end of PEP



# Berner Modell

