

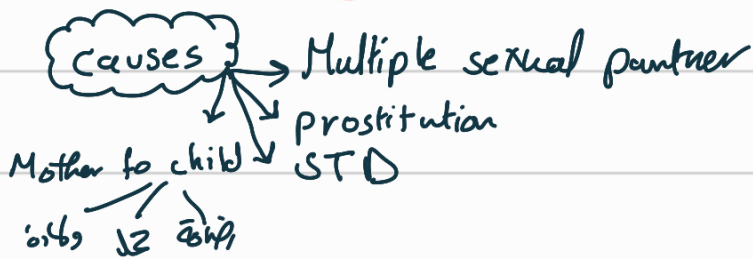
* Morbidity Mortality report shows \Rightarrow homosexual + \downarrow WCD4 + lymphopenic.
Then discovered HIV in 1983 by Gallo & Montagnier.

* Africa > south east asia > America

* \uparrow people living with disease \downarrow death \downarrow incidence

* Comprehensive response (Treatment + \bar{E}_2) most imp. impact in decreasing no.
(comprehensive > treatment centered > prevention centered)

\rightarrow Africa the burning continent :-



* 90% chance of dying of AIDS
in Botswana to 15 yo. boy.

\rightarrow HIV in Jordan

- $\sigma \rightarrow \text{♀}$ - 30-35 - elderly & infant not only adults
- high mortality because of late admission to doctors.

* Transmission :-

- ① Sexual
- ② Mother to child
- ③ IV drug use
- ④ Blood transfusion
- ⑤ Needlestick injury

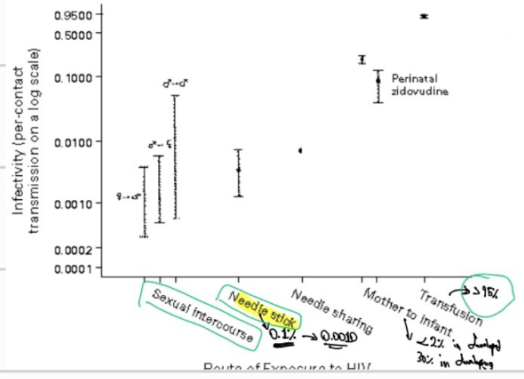
Transmission risk

- HIV 0.3%
- HCV 3%
- HBV 30%

Rule of Three !

HIV transmitted by **All body fluids**

Transmission risk estimates



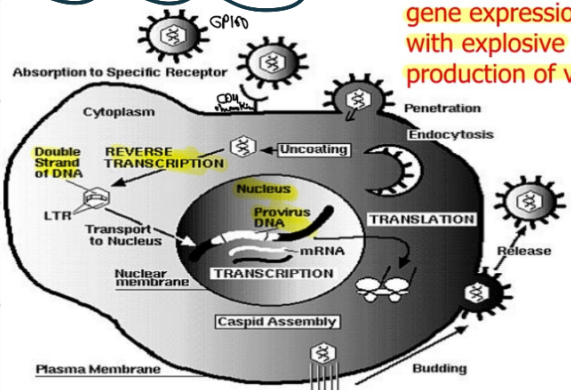
HIV structure: 2 RNA strands ⊕ protease ⊕ Reverse transcriptase ⊕ PI7 ← inside

glycoprotein 160 (gp 120 + gp 41) ← membrane

Binding via **CD4** & **Chemokine receptor** [لازم يتوفر اثنين سوا، ليترف يمسك ويخل جوا الخلية]

- Phylogenetic tree (HIV-1 / HIV-2 / SIV)
↳ Most common

Life cycle of HIV



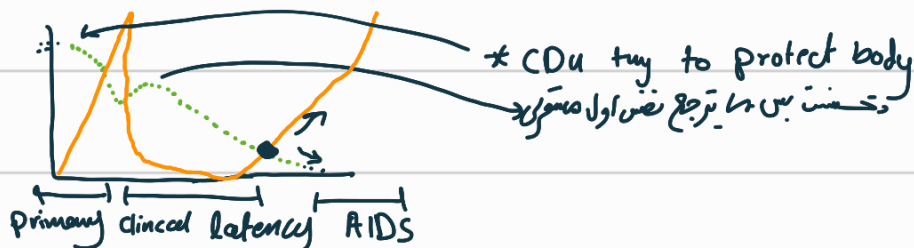
- **Transcriptionally latent**
- **High levels of gene expression with explosive production of virus**

1. Attachment
2. Coreceptor binding
3. Fusion
4. Uncoating
5. Reverse transcription
6. Integration
7. Transcription
8. Translation
9. Assembly
10. Budding
11. Maturation

- Transmission via dendritic cells (CCR5), takes ≈ 2 hrs.

• Viral steady state :- Human body control viral load

• Course of HIV infection



• Predictors \swarrow ^{CD4} viral load

HIV = destruction of immunity

► Acute HIV infection:

- Mono-nucleosis like picture.

- > 70% present with symptoms

2 weeks after acquire HIV

- High viremia / Highly infectious

- Dx by PCR followed by serology
 \downarrow
 4th generation Ag/Ab test (10-14 days)

• Dx \Rightarrow - viral load (PCR) only acute.

- 4th generation

- ELISA

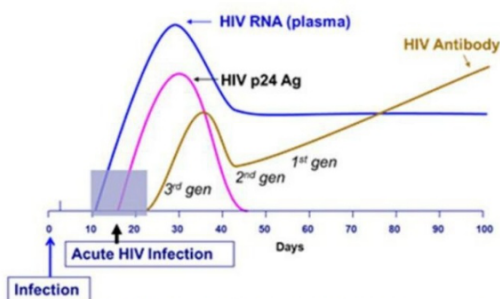
- western blot } \Rightarrow in pregnant & African

Signs and Symptoms of Acute HIV occur: 2 weeks – 3 months

- Fever
 - Fatigue/Malaise
 - Pharyngitis
 - Lymphadenopathy
 - Myalgia
 - Joint Pain
 - Rash
 - Diarrhea
 - Weight Loss
 - Headache
 - Vomiting
 - Oral or genital ulcer
- Rare presentation**

 - Guillain-Barré Syndrome
 - aseptic meningitis
 - hepatitis
- completely asymptomatic

Window Period and HIV Infection



CDC classification :-

CD4 < 200 \Rightarrow AIDS

• HAART "Cocktail"

2 NRTI + PI

Aim \rightarrow \downarrow viral load
 \rightarrow \uparrow CD4

Disadvantage \rightarrow Toxicity
 \rightarrow Cost

Table 1. Antiretroviral Agents Approved by the FDA and in Phase III Clinical Trials

Approved Agents					
NRTIs	PIs	NNRTIs	Fusion Inhibitors	Entry Inhibitors	Integrase Inhibitors
Zidovudine	Saquinavir	Nevirapine	Enfuvirtide	Maraviroc	Raltegravir
Didanosine	Ritonavir	Delavirdine			Efavirenz*
Stavudine	Indinavir	Efavirenz			
Lamivudine	Nelfinavir	Etravirine			
Abacavir	Lopinavir/ritonavir	Rilpivirine			
Tenofovir	Atazanavir				
Emtricitabine	Fosamprenavir				
	Tipranavir				
	Darunavir				
Investigational Agents in Phase III Trials					
					Dolutegravir(S/GSK1349572)