

PERINATAL HIV TRANSMISSION

NAVIGATING PARENTHOOD AND HIV

WHAT IS PERINATAL TRANSMISSION?

Perinatal HIV transmission is the transfer of **human immunodeficiency virus (HIV)** from a parent to their infant **before birth, during delivery, or after birth through breastfeeding.**

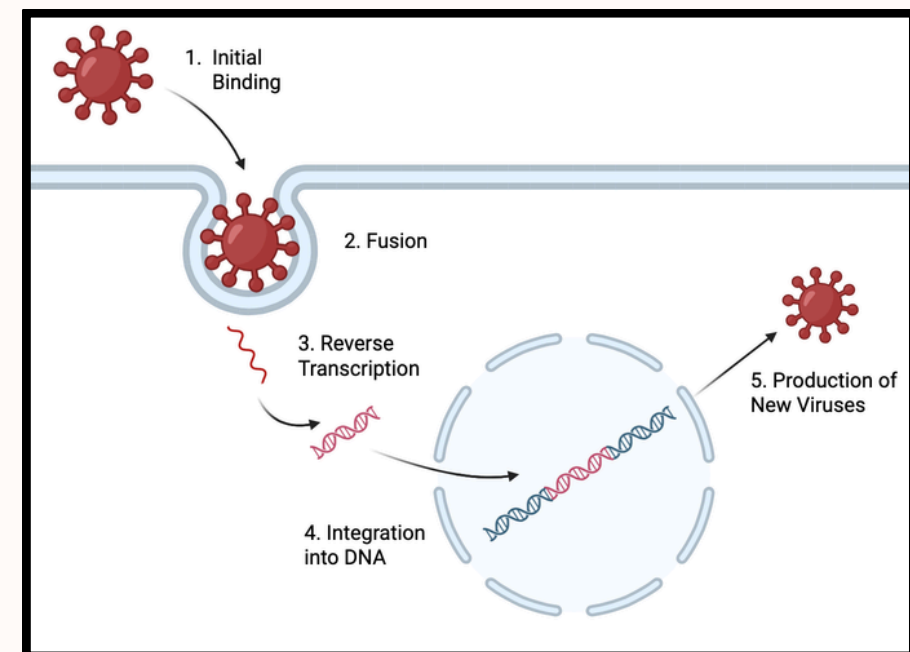
Transmission **does not occur automatically!** It depends on viral exposure, biological barriers, and maternal viral load.



THE BIOLOGY BEHIND HIV INFECTION

HIV is a **retrovirus** that infects **CD4⁺ immune cells**. After entering the cell, the virus converts its RNA genome into DNA and permanently integrates into the host genome.

Once integrated, infected cells produce **new virus particles**, which increase viral exposure in blood, tissues, and bodily fluids.



MODES OF PERINATAL HIV TRANSMISSION

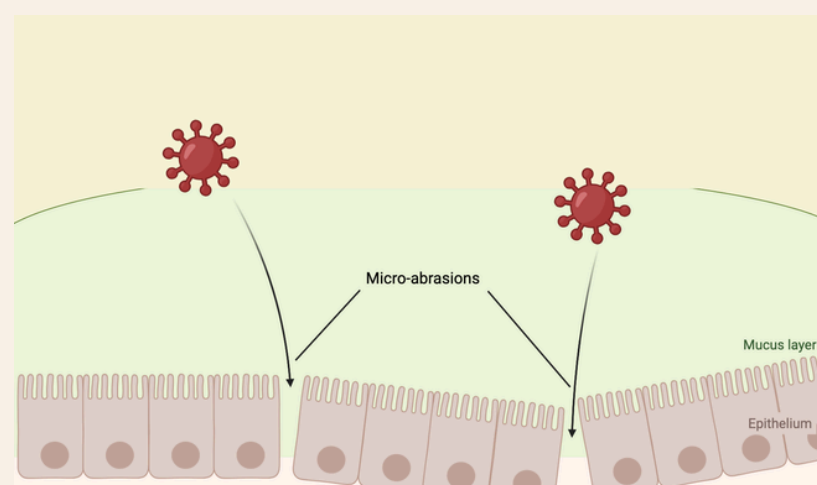
Pregnancy (The Placental Interface)

During pregnancy, HIV transmission can occur in utero at the maternal-fetal interface. The **placenta** normally acts as a selective biological barrier, separating maternal blood from fetal circulation. Transmission risk is low but may increase when placental integrity is disrupted or when infected maternal immune cells traffic across the interface. **Maternal viral load is the primary determinant of transmission risk during pregnancy.**



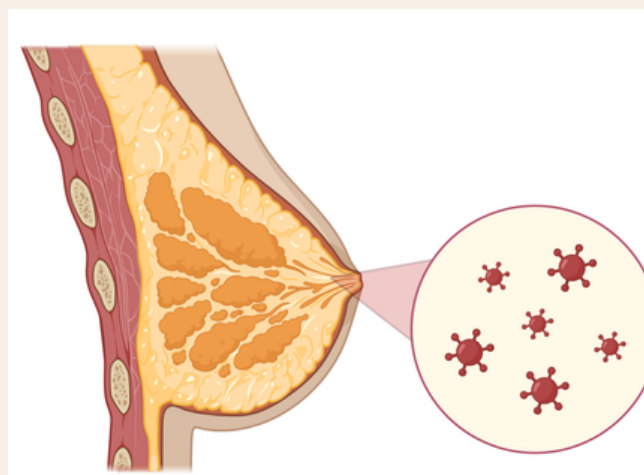
Labor and Delivery (Blood/Mucosal Exposure)

During labor and delivery, the infant may be exposed to HIV through contact with maternal blood and genital secretions. Transmission occurs when the virus encounters infant mucosal surfaces or enters through microabrasions formed during delivery. **The likelihood of transmission increases with higher maternal viral load and prolonged exposure.**



Breastfeeding (Milk to Infant Mucosa)

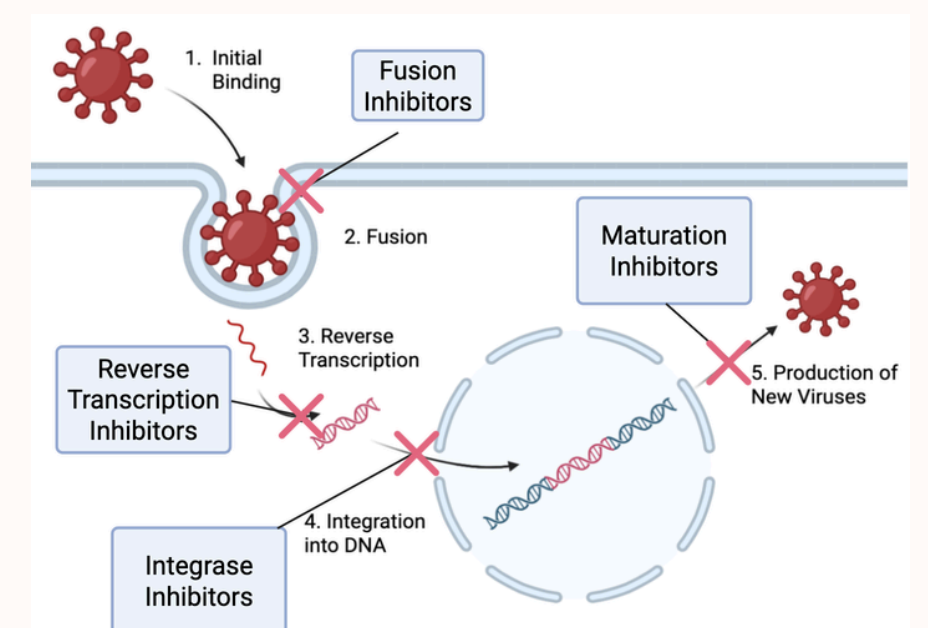
HIV can be transmitted postnatally through **breast milk**, which may contain the virus or infected immune cells. Transmission occurs when the virus contacts the infant's oral or gastrointestinal mucosa over repeated exposures. **Effective antiretroviral therapy greatly reduces viral load in breast milk, significantly lowering transmission risk.**



ANTIRETROVIRAL THERAPY

Antiretroviral therapy (ART) suppresses HIV replication by blocking key steps of the viral lifecycle, preventing the infection of new cells. By reducing viral replication, ART lowers the amount of circulating virus (**viral load**) in blood and bodily fluids. This viral suppression dramatically reduces the risk of HIV transmission at all stages of parenthood, including pregnancy, labor and delivery, and breastfeeding.

ART is **given to all pregnant individuals with HIV** during pregnancy, labor, and delivery, **and to their newborns for 4-6 weeks after birth.**



ADDITIONAL RESOURCES!

