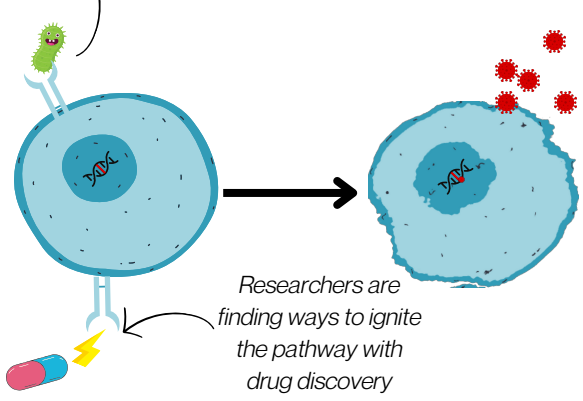
Strategies Toward an HIV Cure

Latency Reversal

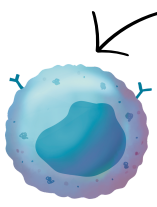
Reactivation happens naturally with exposure to pathogens like vaginosis!



Researchers are finding ways to ignite the pathway with drug discovery

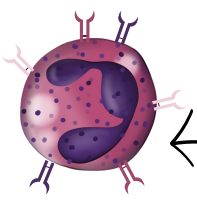
Activating the cells harboring HIV so they become visible for killing and clearance. In the presence of anti-retroviral therapy, the immune system remains protected

Immune-Based



Vaccines: *Train the B-cells and/or T-cells to find and kill HIV more effectively*

Boosting or altering the immune system to improve finding and killing HIV



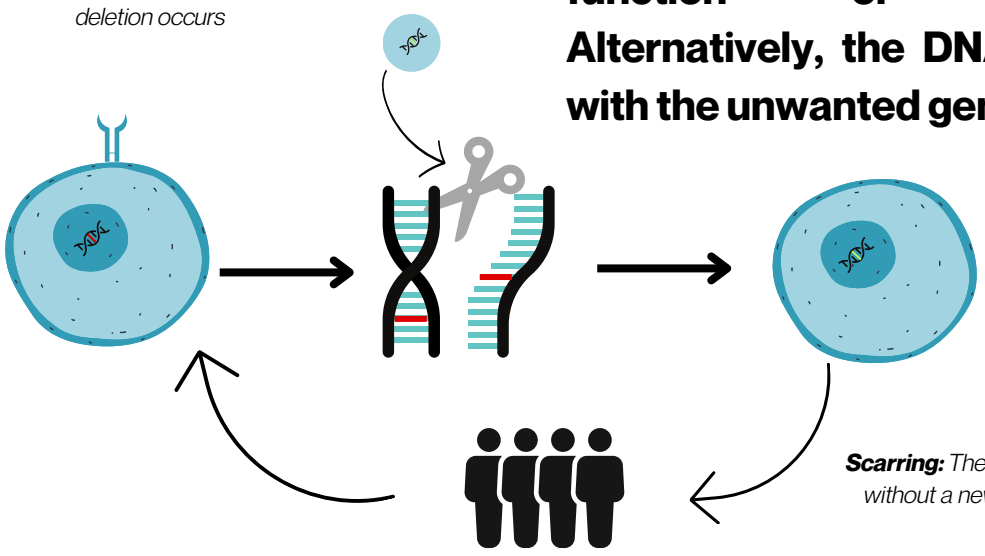
Chimeric Antigen Receptor T-cells (CAR T-cells): *Passively delivered, these T-cells get into sanctuary sites and boost the immune system to fight HIV*

Broadly Neutralizing Antibodies: *Passively delivered these immune products bind to HIV and call for killing*

Gene & Cell Editing

Using molecular scissors, genes are cut out and new genes are inserted to make a change to cell function or phenotype. Alternatively, the DNA can repair with the unwanted gene cut out

Insertion: *A vector carries a new gene that will insert where the deletion occurs*

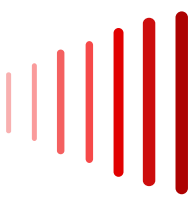


Scarring: *The DNA repairs itself without a new gene inserted*

These cells are collected from people living with HIV and re-infused after editing!

Block & Lock

Latency isn't a light switch...its more like a spectrum

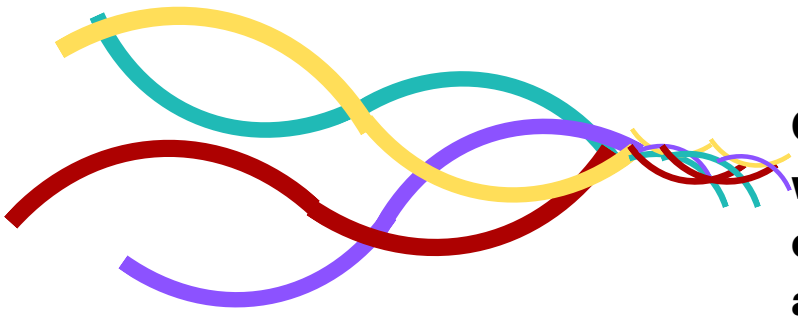


most reactive

Block reactivation by driving cells with HIV deeper into latency

least reactive

Prevent reactivation by driving the genes that code for HIV transcription to knot together so they cannot unfold for coding



Cure strategies will involve a combination of approaches!

AVAC
Global Advocacy for HIV Prevention