(HIV: PREVENTION, TREATMENT, HOPE)

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33.2 million people now live with HIV or AIDS.

Over 6,800 people become infected every day—that's almost five people **per minute**.

15 million children have been **orphaned** by AIDS.

Another person age 15-24 becomes infected every **15 seconds**.

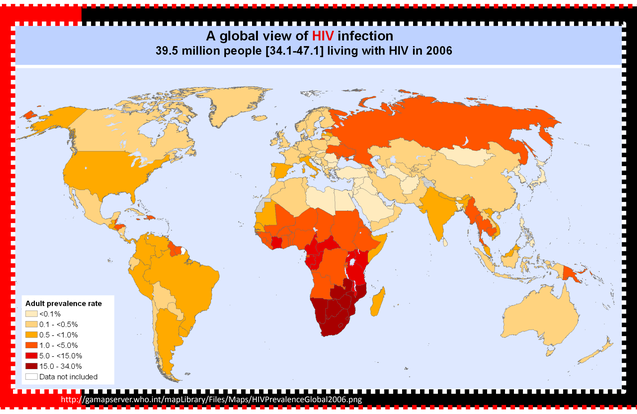
5,700 people **die** from AIDS every day.

One child dies every **minute**.

The Problem

There is little knowledge on the prevention of HIV/AIDS in some of the countries where it is most prevalent.

There are very few dependable treatments.



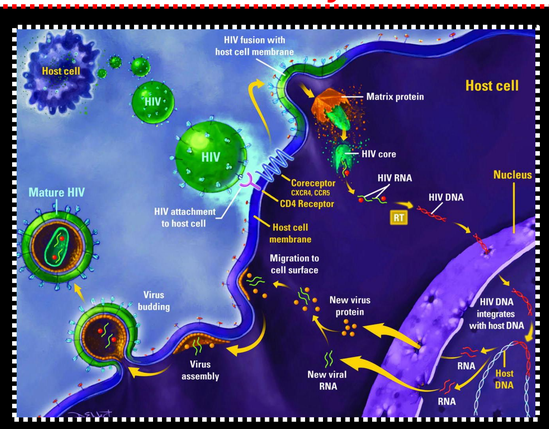
http://gamapserver.who.int/mapLibrary/Files/Maps/HIVPrevalenceGlobal2006.png

Prevention

HIV prevention requires a combination of programmatic and policy actions that:

- Promote safer behaviors
- Reduce vulnerability to transmission
- Encourage use of key prevention technologies
- Promote social norms that favor this risk reduction

HIV Life Cycle



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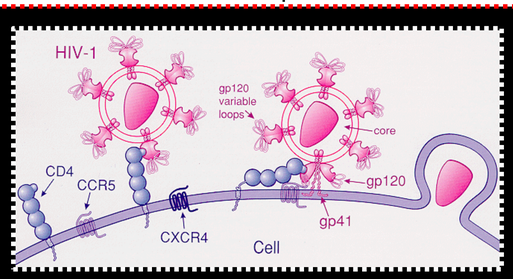
CCR5 Receptors

- CCR5 receptor protein HIV virus use to enter T-cells
- CCR5-Δ32 deletion mutation of CCR5 gene
- Studies show the CCR5 receptor effect HIV



http://upload.wikimedia.org/wikipedia/commons/c/c7/HIV_attachment.gif

Natural Killer (NK) Cells

- Cytotoxic lymphocyte, in immune system
- Destroys infected cells
- Called Antibody-dependent cellular cytotoxicity (ADCC)
- ADCC decreased in HIV infection

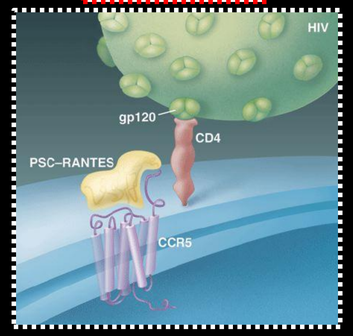
Matrix Metalloprotease Inhibitors

- Infection correlates with increased Matrix Metalloproteinase (MMP)
- MMP inhibits ADCC
- Study in 2008 done by Partners AIDS Research Center
- Lowered MMP levels correlated with restoration ADCC activity

The Treatment

A cocktail treatment of drugs that block the CCR5 receptor, such as Maraviroc, and MMP inhibitor drugs, such as Ilomastat.

Maraviroc



http://huehueteotl.files.wordpress.com/2007/03/hiv-ccr5.jpg

The Solution

UNAIDS

UNAIDS is the Joint United Nations Program on HIV/AIDS. It brings together the efforts and resources of 10 UN system organizations to:

- Help prevent new HIV infections,
- Fund research for new treatments,
- Care for people living with HIV, and
- Lessen the impact of the epidemic.

UNAIDS works in more than 80 countries worldwide.

Next Step

December 1st is World AIDS Day. With Alpha Xi Delta, we will be holding an annual fundraiser for UNAIDS, with the first being on December 1st, 2010.

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