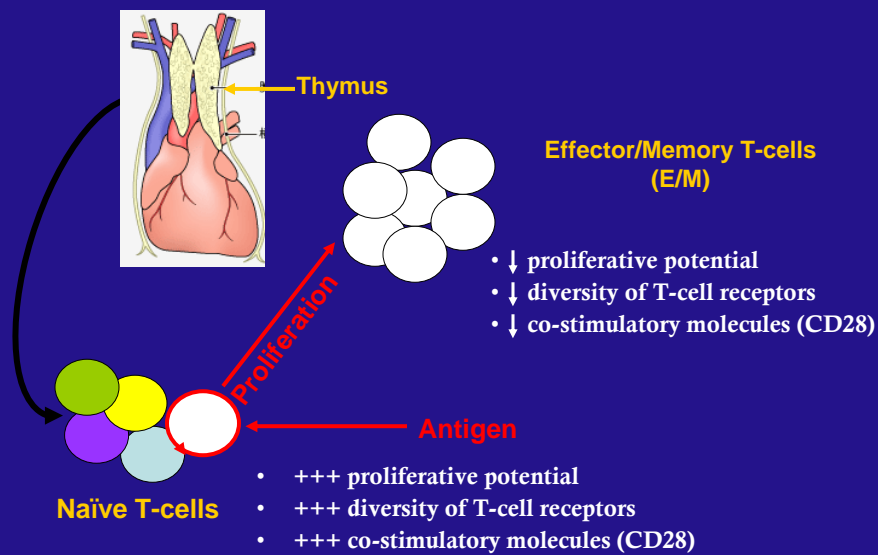


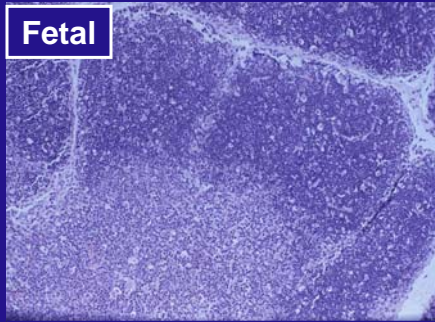
# T-lymphocytes in Aging and HIV Infection

Beth D. Jamieson, Ph.D.  
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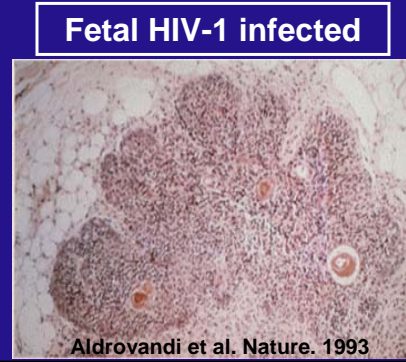
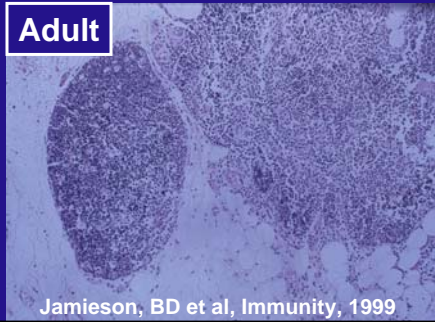
## Differentiation of a T- cell



# The Human Thymus Involutes with Age....



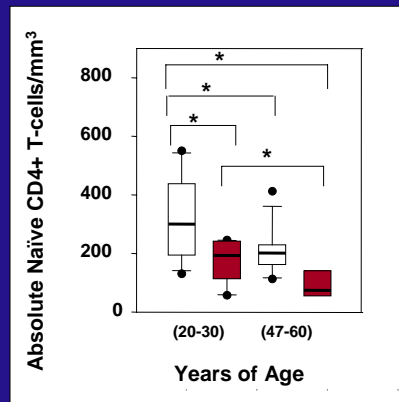
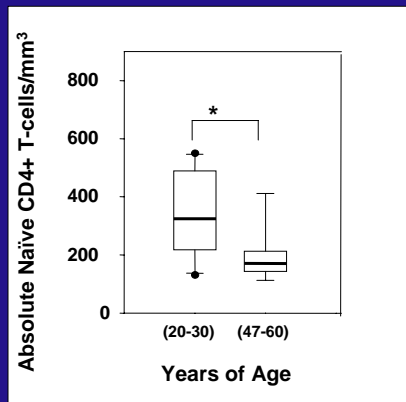
and HIV-1 Infection....



Jamieson, BD et al, Immunity, 1999

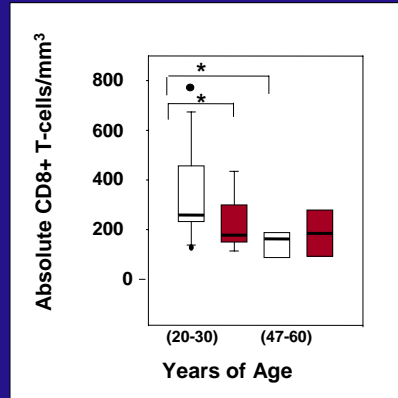
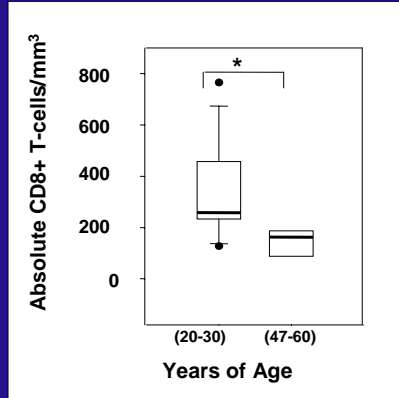
Aldrovandi et al. Nature. 1993

# Both Age and HIV-1 Infection Result in Decreased Numbers of Naïve Helper T-cells



Seronegative  
 HIV-1 infected

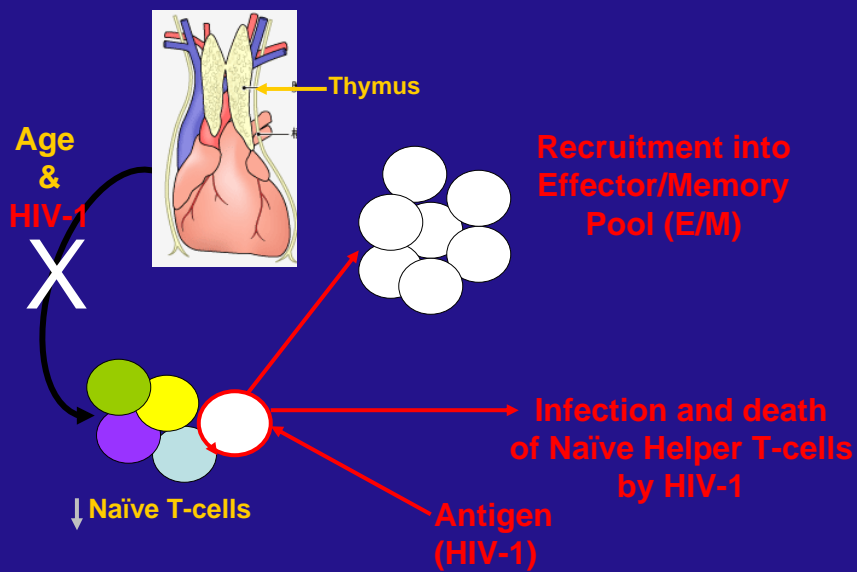
## Both Age and HIV-1 Infection Result in Decreased Numbers of Naïve Cytotoxic T-cells



Seronegative  
 HIV-1 infected

Kalayjian et al. 2003 JID 187:1924

## Modeling Loss of Naïve T- cells



## **Aging is Associated with Functional Changes in the T-cell compartment**

- Hyporesponsiveness to stimulation
- Decreased proliferative capacity and IL-2 production
- Alterations in TCR signaling
- Alterations in cell surface phenotype e.g. less CD28, chemokine receptors etc.

### **Most of which are mirrored in HIV-1 Infection**

- To what extent are the mechanisms behind age and HIV-1-induced alterations similar or distinct?