AIDS-AWARE

CONCERN ABOUT AIDS: Part II
Understanding the AIDS Virus and Types of Infections

Since the recognition of the acquired immunodeficiency syndrome (AIDS) in 1981, considerable progress has been made in understanding the nature of the causative agent, a retrovirus called human immunodeficiency virus (HIV). HIV has a predilection for cells with receptors for the T-lymphocyte activating factor, helper T lymphocytes, a white blood cells in the human blood. The virus enters a cell that is a target for the enzyme reverse transcriptase, leading to the production of DNA that is integrated into the genome of the cell. Additional virus is then produced which infects other cells, leading to the premature maturation and death of cells.

The disease is especially devastating because of the type of cells that are affected, helper T-cells. Helper T-cells play a key role in coordinating a variety of immune functions, including B lymphocyte activity and induction of natural killer cells. When helper T-cells are destroyed, the loss may result in a wide variety of diseases that an intact immune system could really control. Not only does the virus negatively impact the body's immune system by destroying and degrading the patient's helper T lymphocytes, it also infects other cells of the body including B-cells, macrophages and dendritic cells (cells in the nervous system). As a result, an excessive production of known viruses can occur as a consequence of HIV infection.

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This is the second in a series of AIDS-related articles presented as a service to the MIT community by the MIT Medical Department and its AIDS AWARE project.

For more information about AIDS or other AIDS-AWARE activities, please call the MIT Medical Department's Health Education Service at 253-1616.