

AIDS

The word AIDS stands for Acquired Immuno Deficiency Syndrome. This means deficiency of immune system, acquired during the lifetime of an individual indicating that it is not a congenital disease. 'Syndrome' means a group of symptoms. AIDS was first reported in 1981 and in the last twenty-five years or so. It has spread all over the world killing more than 15 million persons.

AIDS is caused by the Human Immuno deficiency Virus (HIV), a member of a group of viruses called retrovirus, which have an envelope enclosing the RNA genome. Transmission of HIV-infection generally occurs by (a) sexual contact with infected person, (b) by transfusion of contaminated blood and blood products, (c) by sharing infected needles as in the case of intravenous drug abusers and (d) from sexual partners, during addicts who take drugs intravenously, individuals who require repeated blood transfusions and children born to an HIV infected mother. Do you know - when do people need repeated blood transfusion? Find out and make a list of such conditions. It is important to note that HIV/AIDS

Infected persons are not isolated from family and society. There is always a time-lag between the infection and appearance of AIDS symptoms. This period may vary from a few months to many years (usually 5-10 years).

After getting into the body of the person, the virus enters into macrophages where RNA genome of the virus replicates to form viral DNA with the help of the enzyme reverse transcriptase. This viral DNA gets incorporated into host cell's DNA and directs the infected cells to produce virus particles. The macrophages continue to produce virus and in this way acts like a HIV factory. Simultaneously, HIV enters into helper T-lymphocytes (T_H), replicates and produce progeny viruses. The progeny viruses released in the blood attack other helper T-lymphocytes. This is repeated leading to a progressive decrease in the number of helper T-lymphocytes in the body of the infected person. During this period, the person suffers from bouts of fever, diarrhoea and weight loss. Due to decrease in the number of helper T-lymphocytes, the person

starts suffering from infection that could have been otherwise overcome such as those due to bacteria especially *Mycobacterium*, virus, fungi and even parasites like *Toxoplasma*. The patient ~~therefore~~ becomes so immuno-^{deficient} that he/she is unable to protect himself/herself against these infections. A widely used diagnostic test for AIDS is enzyme linked immuno-sorbent assay (ELISA). Treatment of AIDS with anti-retroviral drugs is only partially effective. The can only prolong the life of the patient but cannot prevent death, which is inevitable.