

HISTORY OF HIV & AIDS

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HIV is thought to have originated in non-human primates in sub-Saharan Africa and was transferred to humans late in the 19th or early in the 20th century.^{1,2,3} The first paper recognizing a pattern of opportunistic infections characteristic of AIDS was published in 1981.⁴

Both HIV-1 and HIV-2 are believed to have originated in West-Central Africa and to have jumped species (a process known as zoonosis) from non-human primates to humans. HIV-1 appears to have originated in southern Cameroon through the evolution of simian immunodeficiency virus (SIV) that infects wild chimpanzees.^{5,6} The closest relative of HIV-2 is a virus of the sooty mangabey, an Old World monkey living in litoral West Africa (from southern Senegal to western Ivory Coast. New World monkeys such as the owl monkey are resistant to HIV-1 infection, possibly because of a genomic fusion of two viral resistance genes.⁷ HIV-1 is thought to have jumped the species barrier on at least three separate occasions, giving rise to the three groups of the virus, M, N, and O.⁸

There is evidence that humans who participate in bushmeat activities, either as hunters or as bushmeat vendors, commonly acquire SIV.⁹ However, SIV is a weak virus, it is typically suppressed by the human immune system within weeks of infection. It is thought that several transmissions of the virus from individual to individual in quick succession are necessary to allow it enough time to mutate into HIV.¹⁰ Furthermore, due to its relatively low person-to-person transmission rate, it can only spread throughout the population in the presence of one or more of high-risk transmission channels, which are thought to have been absent in Africa prior to the 20th century.

Specific proposed high-risk transmission channels; allowing the virus to adapt to humans and spread throughout the society, depend on the proposed timing of the animal-to-human crossing. Genetic studies of the virus suggest that the most recent common ancestor of the HIV-1 M group dates back to circa 1910.¹¹ Proponents of this dating link the HIV epidemic with the emergence of colonialism and growth of large colonial African cities, leading to social changes, including a higher degree of sexual promiscuity, the spread of prostitution, and the concomitant high frequency of genital ulcer diseases (such as syphilis) in nascent colonial cities.¹² There is evidence that transmission rates of HIV during vaginal intercourse, while quite low under regular circumstances, may be increased tens, if not hundreds of times, if one of the partners suffers from a STD resulting in genital ulcers. Early 1900's colonial cities were notable due to their high prevalence of prostitution and genital ulcer STD's, to the degree that, as of 1928, as many as 45% of female residents of eastern Kinshasa were thought to have been prostitutes, and, as of 1933, around 15% of all residents of the same city were infected by one of the forms of syphilis.¹³

An alternative view holds that unsafe medical practices in Africa during years following World War II, such as unsterile reuse of single use syringes during mass vaccination, antibiotic and anti-malaria treatment campaigns, were the initial vector that allowed the virus to adapt to humans and spread.^{10, 13, 14}

The earliest well documented case of *Human Immunodeficiency Virus* in human dates back to 1959.¹⁵ The virus may have been present in the United States as early as 1966,¹⁶ but the vast majority of infections occurring outside sub-Saharan Africa (including the U.S.) can be traced back to a single unknown individual who got

infected with HIV in Haiti and then brought the infection to the United States sometime around 1969.¹⁷ The epidemic then rapidly spread among high-risk groups (initially, sexually promiscuous gay men). By 1978, the prevalence of HIV-1 among gay male residents of New York and San Francisco was estimated at 5%, suggesting that several thousand individuals in the country had been infected by then.¹⁷

AIDS was first clinically observed between late 1980 and early 1981.¹⁸ Injection drug users and gay men with no known cause of impaired immunity showed symptoms of *Pneumocystis carinii* pneumonia (PCP), a rare opportunistic infection that was known to present itself in people with very compromised immune systems.^{19, 20, 21} Soon thereafter, additional gay men developed a previously-rare skin cancer called Kaposi's sarcoma (KS).^{22, 23} Many more cases of PCP and KS quickly emerged, alerting U.S. Centers for Disease Control and Prevention (CDC). A CDC task force was formed to monitor the outbreak. After recognizing a pattern of anomalous symptoms presenting themselves in patients, the task force named the condition *Acquired Immune Deficiency Syndrome (AIDS)*.²⁴

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