

# Smoking & HIV/AIDS

## In Summary

The DC Department of Health estimates that one in twenty DC residents is living with HIV or AIDS. That number is even higher among older District residents and other at-risk populations.

With proper treatment, many people living with HIV/AIDS in the District are living longer, more productive lives, but smoking poses a great threat to their long-term health and well-being.

We've known for a long time how dangerous smoking and second hand smoke are for the entire community. The American Cancer Society reports that "each year about 438,000 people in the United States die from illnesses related to cigarette smoking. Cigarettes kill more Americans than alcohol, car accidents, suicide, AIDS, homicide, and illegal drugs combined."

The impact of smoking is far greater, however, for people living with HIV/AIDS. Smoking weakens the immune system, and makes it even harder to fight off opportunistic infections associated with HIV. Smoking also increases the risk of HIV-associated malignancies and other cancers found among people living with HIV/AIDS. Further, HIV positive individuals who are at greater risk for heart disease because of lipodystrophy, significantly compound that risk by smoking.

Smoking cessation services are a crucial component of long term HIV/AIDS care. Residents of the District of Columbia can access free support to quit smoking by calling 1-800-QUIT-NOW. DC residents who call this number can get free smoking cessation aids like nicotine gum or patches.

## Smoking and Opportunistic Infections among People Living with HIV

- Oral diseases including hairy leukoplakia<sup>1</sup> and candidiasis<sup>2</sup> (thrush) are more common among HIV positive smokers.
- Pulmonary diseases including cryptococcus<sup>3</sup> and bacterial pneumonia<sup>4</sup> are more common among HIV positive smokers.

## HIV, Smoking, and Cancer

- HIV infection is associated with an increased risk of many types of cancer. As the survival time of HIV/AIDS patients has increased, the risk of several types of cancer has also increased.<sup>5</sup>
- HIV-associated malignancies, such as anal and cervical cancer are observed more frequently among HIV/AIDS patients who smoke.<sup>6,7</sup>
- Other cancers commonly associated with cigarette smoking, such as lung and head and neck, are observed more frequently among HIV-infected smokers compared with non-infected smokers.<sup>8</sup>

<sup>1</sup> Shiboski, C.H., Neuhaus, J.M., Greenspan, D., & Greenspan, J.S. (1999) Effect of receptive oral sex and smoking on the incidence of hairy leukoplakia in HIV-positive gay men. *Journal of Acquired Immune Deficiency Syndromes*, 21, 236-242.

<sup>2</sup> Conley, L.J., Bush, T.J., Buchbinder, S.P., Penley, K.A., Judson, F.N., & Holmberg S.D. (1996). The association between cigarette smoking and selected HIV-related medical conditions. *AIDS*, 10, 1121-1126.

<sup>3</sup> Hajjeh, R. A., Conn, L.A., Stephens, S.S., Baughman, W., Hamill, R., Graviss, E., Pappas, P.G., Thomas, C., Reingold, A., Rothrock, G., Hutwagner, L.C., Schuchat, A., Brandt, M.E., & Pinner, R.W. (1999). Cryptococcosis: Population-based multistate active surveillance and risk factors in human immunodeficiency virus-infected persons. Cryptococcal Active Surveillance Group, *The Journal of Infectious Diseases*, 179, 449-454.

<sup>4</sup> Burns, D.N., Hillman, D., Nearnton, J.D., et al. (1996) Cigarette smoking, bacterial pneumonia, and other clinical outcomes in HIV-1 infection. *Terry Bein Community Programs for Clinical Research on AIDS. Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology*, 13, 374-383

<sup>5</sup> Goedert, J. (2000) The epidemiology of acquired immunodeficiency syndrome malignancies. *Seminars in Oncology*, 27, 390-401.

<sup>6</sup> Palefsky, J. M., Minkoff, H., Klish, L.A., Levine, A., Sacks, H.S., Garcia, P., Young, M., Melnick, S., Miotti, P., & Burk, R. (1999) Cervicovaginal human papillomavirus infection in human immunodeficiency virus-1 (HIV)-positive and high-risk HIV negative women. *Journal of the National Cancer Institute*, 91, 226-236.

<sup>7</sup> Palefsky, J.M., Shiboski, S., & Moss, A. (1994) Risk factors for anal human papillomavirus infection and anal cytologic abnormalities in HIV-positive and HIV-negative homosexual men. *Journal of Acquired Immune Deficiency Syndromes*, 7, 599-606.

## HIV, Smoking, and Heart Disease

- HIV/AIDS patients who experience lipodystrophy, a common side effect of antiretroviral treatment, have significantly elevated risk factors for heart disease.<sup>9</sup>
- Cigarette Smoking, an established risk factor for cardiovascular disease, may be particularly harmful to HIV/AIDS patients receiving prolonged antiretroviral treatment.<sup>10</sup>
- One recent study showed an increased risk of heart disease for non-smokers of as much as 60 percent, when regularly exposed to secondhand smoke.<sup>11</sup>

## Smoking and HIV/AIDS Medications

- Smoking can increase the likelihood of complications from HIV medications, like nausea and vomiting.<sup>12</sup>
- Smoking can interfere with processing of HIV/AIDS medications by the liver.<sup>12</sup>

## AIDS Dementia Complex

- AIDS Dementia Complex is more common among HIV positive smokers.<sup>13</sup>

## HIV Positive Non-Smokers are Likely to Live Longer than HIV Positive Smokers

- For people who are HIV positive, smoking accelerates the progression to AIDS.<sup>14</sup>
- In a long term observational study of HIV positive women in the United States, HIV positive women who smoked experienced a mortality rate 53% higher than non-smoking HIV positive women.<sup>15</sup>

8 Tirreli, U., Spina, M., Sandri, S., Serraino, D., Gobitti, C., Fasan, M., Sinicco, A., Garavelli, P., Ridolfo, A.L., & Vaccher, E. (2000). Lung carcinoma in 36 patients with human immunodeficiency virus infection. The Italian Cooperative Group on AIDS and Tumors. *Cancer*, 88, 563-569.

9 Hadigan, C., Meigs, J.B., Corcoran, C., Rietschel, P., Piecuch, S., D'Agostino, R.B. & Grinspoon, S. (2001) Metabolic abnormalities and cardiovascular disease risk factors in adults with human immunodeficiency virus infection and lipodystrophy. *Clinical Infectious Diseases*, 32, 130-139

10 Gritz, E., Vidrine, D., Lazev, A., Amick III, B., Arduino, R. (2003) Smoking behavior in a low-income multiethnic HIV/AIDS population. *Nicotine & Tobacco Research* 6, 71-77.

11 Whincup, P.G., Gilg, J.A, Emberson, J.R., Feyeraabend, C., Bryant, A., Walker, M., Cook, D., (2004) Passive smoking and risk of coronary heart disease and stroke: prospective study with cotinine measurement.

12 AIDS Info Net Fact Sheet 803. <http://www.thebody.com/content/treat/art6104.html>. Accessed October 10th, 2008.

13 Burns, D.N., Hillman, D., Nearton, J.D., et al. (1996) Cigarette smoking, bacterial pneumonia, and other clinical outcomes in HIV-1 infection. Terry Beinr Community Programs for Clinical Research on AIDS. *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology*, 13, 374-383

14 Nieman RB, Fleming J, Coker RI, Harris JR, Mitchell DM. (1993) The Effect of Cigarette Smoking on the Development of AIDS in HIV-1-seropositive Individuals. *AIDS* 7, no 5. 705-710.

15 Feldman J, Minkoff H, Schneider M, Gange S, Cohen M, Watts, H, Gandhi M, Mocharnuk R, Anastos K (2006) The Association of Cigarette Smoking with HIV Prognosis Among Women in the HAART Era – A Report from the WSomen's Interagency HIV Study. *Am J Public Health*. 2006;96: 1-6.