CATIE-News

CATIE’s bite-sized HIV and hepatitis C news bulletins.

Study links diet to health in HIV positive men

5 January 2009

One of the hallmarks of untreated HIV/AIDS is unintentional weight loss, or wasting. In the early 1980s, before the name AIDS was given to the pandemic, people in East Africa referred to AIDS-related wasting as “slim” or “slim disease.”

There are many reasons unintentional weight loss can occur in people with HIV/AIDS. Here are a few:

- HIV damages the intestine, causing inflammation. A damaged intestine can have difficulty breaking down food and absorbing nutrients.
- HIV weakens the immune system in the intestinal tract. This increases the risk of infection by many other germs, some of which can cause diarrhea. Prolonged and recurring bouts of diarrhea can lead to weight loss.
- HIV seems to alter the way the body extracts energy from food, pushing it into more inefficient pathways.
- Fighting a long-term infection requires increased protein and other nutrients. If extra food is not eaten to provide these nutrients, weight loss can occur.
- Changes in the body’s production of hormones occur in HIV/AIDS. Decreased levels of growth hormone and testosterone can contribute to reduced muscle mass and weight loss.

In high-income countries, highly active antiretroviral therapy (HAART) is generally available. As a result, in people who are engaged in their medical care and treatment, death from AIDS-related conditions is uncommon. Researchers are increasingly forecasting that HIV positive people might be able to live near-normal life spans because of HAART and access to medical services.

Despite this good news, a team of researchers at Tufts University in Boston has found that unintentional weight loss can still be a problem for some people even with the availability of HAART. So, research on HIV-related wasting continues.

Another group of nutrition researchers at Tufts University has been studying the diets of hundreds of HIV positive men over the past decade. A recent analysis of their work suggests that people can be divided into three groups based on the type of food and drink that they consume. Not surprisingly, the group that had the least nutritious diet, which the study team called the “fast food and fruit drinks” group, had the highest viral load and lowest CD4+ cell count. Moreover, AIDS was more common in this group than in the other dietary groups. These and other findings appear in the report below.

Study details

The Tufts study, Nutrition for Healthy Living, enrolled HIV positive adults between February 1995 and June 2005. Participants visited study clinics twice a year; they were interviewed and technicians took blood samples and analysed their body composition, assessing the proportion of fat, muscle, bone and water. At each visit, researchers asked participants about the foods they had eaten over the past three days. Using this information, over the course of the study researchers were able to form a good idea of the dietary habits of participants.

The average profile of participants was as follows:

- age – 46 years
- all were male
- 66% were White
- 34% were people of colour
- 28% had been diagnosed with AIDS
- viral load – 1,600 copies
- CD4+ count – 444 cells

**Results**

Based on extensive nutritional analysis of participants’ diets, the research team was able to divide participants into three groups, or clusters, based on their eating and drinking habits, as follows:

- fast food and fruit drinks group
- juice and soda group
- fruit, vegetable and low-fat dairy group

**Notes on clusters**

The researchers stated that people in the Juice and Soda cluster had “significantly higher” intakes of juice and soda than people in the other two clusters. Similarly, the Fast Food group had significantly greater intakes of fast food compared to the other two clusters. The Fruit, Vegetable and Low-fat Dairy cluster had significantly greater intakes of these foods along with whole grains, nuts, water and diet drinks than the other two clusters.

**Stereotype or reality**

In some respects, the naming of the clusters and the description of some of the people in them seems almost stereotypical, but the research team stresses that they do reflect the common food choices made by the particular participants in the clusters.

**Food and health**

Researchers then assessed the health, social and economic information they had on file about the people in these different clusters and found the following:

**Fast food and fruit drink group**

People in this cluster tended to have low incomes and were exposed to HIV largely because of heterosexual sex or injecting street drugs. They were the people who were mostly likely of all the three groups to have high viral loads and low CD4+ counts.

**Fruit, vegetable and low-fat dairy products**

On average, these participants identified themselves as gay. Researchers found that they were a bit heavier and had more muscle mass compared to the other groups. In this cluster, participants were least likely to be poor and had the greatest intake of protein, fibre and micronutrients (vitamins and trace minerals). The reason for their high intakes of protein and other nutrients is due mainly to their nutritious choices of foods. The research team is certain of this because they were able to account for participants’ use of vitamin and other supplements. In this cluster, participants had the highest CD4+ counts of all three groups.

**Juice and soda**

This cluster had the greatest intake of calories per day yet the lowest average weight of all three groups. What’s more, over the course of the study people in the other two groups gained weight. Researchers suspect that people in the Juice and Soda cluster might have been at high risk for wasting and may have been attempting to compensate by eating more food—reflecting their greater intake of calories.

**Multiple factors**

The decision-making that underpins the purchase of certain foods is influenced by many factors, including the
As a result, low-income people may not have the same choices, opportunity or time to spend finding nutritious food as some middle-class people.

The study was not a controlled clinical trial, so it is difficult to draw firm conclusions about the role between diet and health. However, given the importance of nutrition in maintaining health and the 10-year span of the study, it does seem as though nutrition must have played some role in the health of participants.

**Missing in action**

A major drawback of this study is the lack of women. The research team stated that too few women returned completed food questionnaires, and therefore they chose to not include women in the study. Perhaps a modified study protocol adapted to the lives of HIV positive women in the Boston area could enable more women to be enrolled in future nutrition studies.

This Boston study that examined dietary patterns and the health of HIV positive people is something that needs to be done in other high-income countries. As HIV positive people live longer lives because of HAART, their focus on looking after themselves (this is sometimes called health-work) will likely shift from surviving infections to living longer and healthier lives. Good nutritional habits can help HIV positive people reduce the risk conditions that are increasingly becoming concerning, such as cardiovascular disease, diabetes, thinning bones and other issues often related to aging.

One possible outcome of the Boston study is that it may highlight the need that some populations have for learning healthy eating and shopping habits and life skills, as well as accessing social, medical and addiction services.


Also, a fun and colourful *story about healthy eating* in CATIE's *Positive Side* magazine is available at: [http://www.positiveside.ca/e/V10I1/Conquerthekitchen_e.htm](http://www.positiveside.ca/e/V10I1/Conquerthekitchen_e.htm)

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**REFERENCES:**


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Production of this content has been made possible through a financial contribution from the Public Health Agency of Canada.

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