

There has been much in the news regarding the importance of good nutrition for HIV disease, but very little specific guidance. People frequently have differing ideas on what constitutes 'good nutrition.' It is therefore important that any nutritional advice for HIV-positive people is based on the best available scientific evidence relating to the specific demands of this disease.

This section provides information on the following: Effects of HIV disease on nutritional status How to maintain a good nutritional status Tips on how to increase food intake What are the most protective vitamins and minerals? A list of the best foods Are additional vitamins and minerals recommended? Fortified foods Foods to cut down on Nutrition for HIV-infected children Nutrition for HIV-infected mothers Infant feeding choices for HIV-infected mothers Nutritional support provided by the government

Effects of HIV disease on nutritional status Infection with HIV is the scientifically accepted cause of AIDS. This virus progressively destroys the body's immune system making it harder and harder to fight off diseases like tuberculosis, pneumonia and cancer. AIDS is a collection of diseases that develop when the immune system is no longer able to protect the body from illness. Studies have shown that, with the right sort of nutrition, it is possible to slow down the progression of HIV disease to AIDS, and reduce the number and severity of opportunistic infections. Good nutrition is not, however, a substitute or alternative for medical treatment. Eventually everyone infected with HIV disease will need to take antiretroviral medicines to deal with the effects of the disease. Good nutrition is needed, in combination with appropriate medical treatment, to maintain good health for as long as possible.

People with HIV disease can quickly become malnourished and start to lose weight because the disease has the following effects: It makes people lose their appetites so they don't eat as much as they did before they were infected It speeds up the body's metabolism which means that additional food is needed to stop the person from losing weight It reduces the amount of nutrients the body can absorb from food because the gut becomes damaged by the virus and other types of infections It increases the occurrence of thrush infections in the mouth and throat. The resulting sores can make it very painful for people to eat and swallow

How to maintain a good nutritional status To make sure someone with HIV disease maintains a good nutritional status it is therefore important to do the following: Increase overall food intake to provide more energy and prevent wasting. This is best done by eating more high-protein foods such as all types of dried beans, fish, chicken, meat, eggs and dairy products with extra helpings of high-energy foods such as pap, samp, bread, potato, rice, pasta, oats, sorghum, millet and dried beans. Fats and oils are high in energy and can be eaten in moderation Increase the consumption of foods rich in vitamins and minerals as these protect against infections. Good vitamin-rich foods include all types of fruit and vegetables, especially green leafy vegetables and all types of red, orange and yellow fruits and vegetables. Whole grains, dried beans, fish and meat are also rich in the B vitamins and minerals that are important for maintaining a good immune system

Tips on how to increase food intake One of the biggest problems is getting people with advanced disease to eat enough. They have not only lost their appetites but also may not have the energy to shop or prepare food. The following tips can help: Eat the foods you enjoy and don't rush the meal. Take your time Eat with family or friends so that mealtimes are pleasant social occasions Eat small amounts often if eating big meals is a problem Eat with your fingers if it is easier Eat liquid or soft foods if you have difficulty swallowing. Soft pre-cooked fortified porridges and sour milk are good if you have sores in the throat and mouth Mix vegetable oil, butter, margarine or peanut butter into porridge to increase the energy value Visit the clinic for treatment if you have a problem such as diarrhoea or sores in the mouth What are the most protective vitamins and minerals?

Research suggests that the following nutrients are especially important in supporting immune function and therefore delaying the progress of HIV disease to AIDS:

- Selenium.** This antioxidant mineral appears to be one of the most important nutrients in HIV disease. An infected person who is selenium-deficient is 20 times more likely to die from opportunistic infections compared with an HIV-positive person who has a good selenium status. Selenium-deficient HIV-positive people also progress much faster to AIDS. There is some evidence that selenium deficiency may be a widespread problem in sub-Saharan Africa and therefore making the epidemic worse. The best food sources of this nutrient are offal (kidneys, liver), fish and Brazil nuts (3-4 nuts per day will provide a person's daily requirements). It is recommended that selenium intake should be around 200mcg/day for people with HIV disease. It should not exceed 400mcg/day
- Vitamin B complex vitamins, including folic acid.** Deficiency of vitamin B12 is associated with an eight-fold increase in the risk of dying from an opportunistic infection, such as pneumonia. HIV-positive people who have the highest intake of the full range of B complex vitamins show significantly improved survival rates over an eight-year period. Good food sources include: dried beans, whole grains (whole-wheat bread, oats, coarse maize meal, sorghum), chicken, fish, meat, liver, eggs, dairy products (milk, cheese, yoghurt, sour milk), nuts, bananas and avocados
- Vitamin A (including plant-based sources of vitamin A such as beta-carotene).** Deficiency of vitamin A is associated with a three-fold increased mortality risk due to opportunistic infections. Transmission rates of HIV disease from the mother to her baby are also reduced in those mothers with a good vitamin A status. Good food sources include: dairy products, margarine, green leafy vegetables (spinach, kale), broccoli, cabbage, carrots, pumpkin, butternut, sweet potatoes and mangoes
- Zinc.** Deficiency of this mineral is associated with a two-fold increase in mortality risk. Good food sources include: meat, eggs, leafy green vegetables, nuts, seeds and whole grains
- Vitamin E.** HIV-positive people with the highest blood levels of vitamin E show a decreased risk of disease progression compared with those patients with the lowest vitamin E levels. Good food sources include: whole grains (especially wheat and oats), nuts and seeds (including peanuts and healthy vegetable oils like olive and canola oils) and leafy vegetables

A list of the best foods

- Energy foods,** which should form the main part of the meal: pap, samp, bread, potato, rice, pasta, millet, sorghum, oats and mngqusho (ground samp and beans). Whole grains such as whole-wheat bread and samp are richer in nutrients than refined grains like white bread and mealie meal
- Body-building foods:** chicken, fish, meat, offal (kidney and liver), eggs, dry beans and peas, dairy products (milk, cheese, sour milk, yoghurt), peanuts and nuts
- Protective foods:** all fruits and vegetables especially spinach, kale, broccoli, cabbage, carrots, pumpkin, butternut, sweet potatoes, peppers, tomatoes, oranges and bananas

Foods to cut down on

The following foods can damage a person's health if they are eaten in large quantities:

- Deep fried foods
- Processed salty snack foods (crisps, corn chips etc)
- Sweetened foods and drinks (cakes, sweets, biscuits, fizzy drinks, sweetened artificial fruit drinks etc)
- Alcohol can damage health and immune function and should be avoided or consumed in moderation

Are additional vitamin and mineral supplements recommended?

People with HIV disease can have problems meeting their full vitamin and mineral requirements through diet alone because the disease reduces the absorption of nutrients from food. Government clinics do give out vitamin supplements but it must be remembered that these are not a substitute for adequate vegetables and fruit, or for other types of medication including antiretroviral (ARV) medicines. Good nutrition and appropriate medication work together to help your body fight the virus and its harmful effects. The best form of supportive multivitamin and mineral supplements should

supply the full range of essential nutrients in amounts approximating the Recommended Dietary Allowance (RDA) or no more than 2-3 times this value. The B vitamins, beta-carotene, vitamin C and vitamin E can, under supervision, be safely taken in larger quantities. However, mineral values should always approximate RDA values, as many, like selenium, can be harmful in excess. Remember that if you are about to start taking ARV medication it is important to show the doctor or nurse all the supplements you are taking. Some supplements may not be able to be taken at the same time as the ARV medication.

Fortified foods Pre-cooked fortified porridge meals, which only need milk or water adding, are proving to a very useful way of making sure vulnerable people receive sufficient nutrients on a daily basis. Some examples of the different products that are available include: e'Pap, Philani, Pugamesta, Angel's Mercy, Power Mix, Power Porridge, eezipap, Imuno Pap, Pronutro and CSB. These products vary in quality, price and taste. One of the most thoroughly researched fortified porridge meals is e'Pap. This formulation provides 28 nutrients, including protein and a range of essential vitamins, minerals and fatty acids. The nutrients are in an easily absorbed form and in the quantities that approximate those provided by a well-balanced diet. For further information contact: Econocom Foods at 011 726 5634.

Nutrition for HIV-infected children All of the guidelines above apply to children as well. With HIV-infected children, who have repeated infections and are losing weight, energy needs can be increased by as much as 50%. Appropriate nutritional support is therefore particularly important for these children to maintain health and immune function.

Nutrition for HIV-infected mothers HIV disease does not prevent women from becoming pregnant. In addition pregnancy does not make HIV disease worse or hasten the progression to AIDS. However, HIV-infected pregnant women tend to gain less weight and experience more frequent nutritional deficiencies. Nutritional requirements are increased during pregnancy and lactation, as well as by HIV disease. Good nutritional support for HIV-infected mothers is therefore particularly important to ensure proper weight gain, and improve pregnancy and birth outcomes.

Infant feeding choices for HIV-infected mothers There is an approximately 15% chance of transmitting HIV disease through breastfeeding. This risk can increase to 30% if the mother is recently infected or has advanced HIV disease. It is therefore recommended that HIV-infected mothers do not breastfeed their children if formula feeding is an acceptable, sustainable and safe alternative. This means the mother must have access to a constant supply of formula feed. She must also receive good support and advice to ensure the baby is fed properly and safely. As these conditions cannot easily be met in many parts of South Africa, particularly the rural areas, exclusive breastfeeding for six months is recommended. This means that nothing else (including water) must be given to the baby during this period. Exclusive breastfeeding is associated with the smallest risk of transmission and provides the best source of nutrition for the baby. Mixed feeding (using a mixture of breast milk and formula and infant foods) is associated with higher risks of transmission. After six months of exclusive breastfeeding the baby should be totally weaned from the breast.

Nutritional support provided by the government People who are HIV-positive and unable to meet their nutritional needs should be able to obtain monthly food parcels from one of the government's HIV service points. These are the hospitals and clinics that have been accredited to provide full care and treatment to people with HIV and AIDS, including nutritional support and antiretroviral treatment. All children under 14 years who enrol at a government HIV service point qualify for nutritional support in the form of supplementary meals and vitamin syrup. Child-headed households also qualify for nutritional support from the government. Many NPOs distribute food parcels to people within the community (sometimes on behalf of the government), as well

as encourage food-gardening projects so that infected people can have a supply of fresh vegetables and fruit. The organisations can be found under the Food Security category in the AIDSbuzz Directory.