

## Maintaining Good Nutrition of HIV/AIDS Patients: A Priority

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### Abstract

Health of any individual depends on the type of food one takes. Balanced diet and quality nutrition are essential for long term health and happiness. Since times immemorial diet has been playing major role for holistic health. Of late the pesticides, the ground water pollution have been a great threat to the nutritive values of foods in addition to threat of carcinogenesis. In any individual, poor nutritional status can both be a cause of an infection and its exacerbation. Nutrition is an independent interpreter of mortality among HIV/AIDS infected people [1].

In this background Healthy diet and good nutritional status particularly for people living with HIV/AIDS (PLWAs) have been pivotal to boost up immunity and to replenish day to losses of several components of diet besides to help to tolerate antiretroviral therapy and its complications. Good nutrition depends on many aspects such as quality and quantity of food, digestion and absorption of the nutrients by the body and usage of these nutrients properly by the different parts of the system.

In an Indian study, a significant occurrence of stunting growth, poor weight, and anemia in children with HIV was observed in addition to Vitamin D, iron and folate being most common micronutrient deficiencies, followed by vitamin A and zinc [2].

HIV-related changes in any of these aspects, and the nutritional problems that come along with them are loss of weight and decrease in appetite, wasting of muscle, Lipodystrophy, Lipoatrophy and related issues. Further depletion of energy levels, insufficiency of vitamins and minerals, high levels of fats and sugars in the blood and harmful impact of HIV drugs and medicines prescribed for long term use to tackle opportunistic infections are common in PLWAs. Many such HIV-related problems can be avoided or managed by taking the right amount of nutrients either through food or dietary supplements.

**Keywords:** Nutrition; HIV; AIDS; Vitamin

### Introduction

According to the U.S. Food and Drug Administration (FDA), a healthy diet is defined as the one that provides enough of each essential nutrient, contains a variety of foods from all of the basic food groups, provides adequate energy to maintain a healthy weight, and does not contain excess fat, sugar, salt, or alcohol.

Health of an individual depends on the type of food one takes. A balanced diet and quality nutrition are highly crucial for long term good health and well being of any individual [2].

In people living with HIV/AIDS (PLWAs), a standard diet enriched with all the essential nutrients is required to improve the overall quality of life, maintain a healthy weight, boost the immune system, well tolerate and process the medications and help manage their side effects and other HIV symptoms and complications.

The six essential nutrients include, PROTEINS to build muscles and a strong immune system, CARBOHYDRATES to supply the required energy.

FATS to provide additional and long-term energy, VITAMINS to regulate the body processes, MINERALS to regulate the body functions and assist growth and WATER to act as a medium to regulate the body metabolism [3].

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### HIV and immunity

HIV infection progressively destroys the immune system, leading to recurrent opportunistic infections. Well-nourished people have a healthier immune system and are better able to fight off

infections. As HIV attacks our immune system and leads to its suppression, you may be at a greater risk for food-borne and water-borne illnesses. So in addition to taking a well-balanced and healthy diet, maintaining food safety, water safety and proper hygiene is essential to prevent infections [5].

**Food and water safety**

It is advised to avoid consuming raw, undercooked or spoiled eggs, meat, poultry (such as chicken/turkey), seafood (including sushi and oysters/shellfish); to use a separate chopping board for raw meats; to wash fruits and vegetables properly, to thoroughly wash hands, chopping boards and cooking utensils with soap and water after each use. Meat, poultry, or fish should not be kept at room temperature for more than a few minutes, it's better to preserve them in the refrigerator until cooking [6].

Boiling is the best way to kill germs in water. So, only boiled, filtered or bottled water should be used for drinking, cooking or making ice.

PLWAs have to avoid tap water, avoid drinking water straight from ponds, lakes, rivers, streams or springs, and avoid ice or unpasteurized drinks and juices [7].

**Nutritional requirements in PLWAs**

*Calories* are the energy in foods that fuel the body. Increased calories are required to maintain the lean body mass. For normal people, 17 calories per pound of body weight; if opportunistic infections are present, 20 calories per pound; and for those with weight loss, 25 calories per pound have been advocated.

*Proteins* help build muscles, organs, new tissues, antibodies, enzymes, hormones and other compounds. Sufficient amount of the right types of protein has to be given: 100-500 gm per day - In a HIV-positive man, 80-100 gm per day - In a HIV-positive woman, and not more than 15-20% of the calories from protein - for those suffering from kidney disease.

Extra-lean pork or beef, skinless chicken breast, fish and low-fat dairy products are preferred.

Carbohydrates provide energy, especially to the brain and nervous system.

5-6 servings (about 3 cups) of fruits and vegetables per day, while limiting the consumption of simple sugars such as cakes, cookies, candies, ice creams, etc., and adding legumes and whole grains to the diet is healthy nutrition.

Fats provide additional and long-term energy, insulation and protection. Therefore, 30% of daily calories from fat; 10% or more of daily calories from mono saturated fats like nuts, seeds, fish, avocado, canola and olive oils; less than 10% of daily calories from polyunsaturated fats like fish, walnuts, flaxseed, and corn, sunflower, soybean and safflower oils; and less than 7% of daily calories from saturated fats like fatty meat, poultry with skin, butter, whole-milk dairy foods, and coconut and palm oils, should be consciously added to the diet.

Vitamins and Minerals regulate body functions, promote chemical reactions in cells and facilitates growth. HIV-positive people need extra vitamins and minerals to help repair and heal the damaged cells and tissues. Foods rich in vitamins and minerals are: Vitamin A - Dark green, yellow, orange or red fruits and vegetables; whole eggs; liver; milk. Vitamin B - Meat, fish, chicken, grains, nuts, white beans, avocados, and broccoli and green leafy vegetables. Vitamin C - Citrus fruits. Vitamin E - Green leafy vegetables, peanuts and vegetable oils. Selenium - Whole grains, poultry, fish, eggs and peanut butter. Zinc - Meat, fish, poultry, beans, peanuts, milk and other dairy products.

As it's quite difficult to get sufficient amount of all the nutrients from food, multivitamin/mineral capsules can be taken without extra iron. Calcium supplements can also be taken if at least 3 servings of high-calcium diet like dairy products and green leafy vegetables are not consumed through diet [8].

Eating well is the key to maintaining energy, strong immune system and overall health of the individual. Taking proper nutrition is really important to avoid and treat a variety of HIV-related problems, and various complications and side effects from the medications [9].

To manage nausea and vomiting, frequent small meals are advised, while avoiding spicy and greasy foods, foods with strong odors. Ginger tea and ginger ale, bland and low-fat foods help to cope up this issue.

In case of diarrhea, eating slowly and more frequently; cutting back on animal fat, fried foods, sugars, dairy products, fruit juices and caffeinated drinks; drinking plenty of water and Gatorade; eating well-cooked vegetables is suggested. B.R.A.T diet (Bananas, Rice, Apple sauce, Toast) is advised for a brief period.

When there is weight loss and loss of appetite, it is recommended not to drink too much liquids right before meals, to take frequent, small meals and exercise regularly. Making meals as attractive and interesting as possible by including variety of textures, colors and shapes will improve the appetite significantly.

Improving nutritional status

People living with HIV need to have a higher daily intake of calories to prevent weight loss. Further to maintain a healthy weight, the amount of calories consumed should be more than the amount of calories burnt.

Carbohydrates are a good source of energy, but it's recommended to take more complex carbohydrates as they take longer to digest compared to that of simple carbohydrates which cause blood sugar to rise sharply, hence not recommended for people with diabetes in HIV/AIDS. Complex carbohydrates include: whole grains, beans (legumes), starchy vegetables like corn and potatoes, and brown rice.

Taking more protein, along with some amount of physical activity helps to fight muscle loss. It is advised to consume at least 3 servings of protein everyday. Protein rich foods include: lean meats, fish, cottage cheese, yogurt, eggs, beans, chick peas, soya-beans and nuts. Some animal sources of protein contain high saturated fats hence should be limited, especially in people with high cholesterol or are at a risk for heart disease.

Maintaining a healthy gut is necessary for the body to get what it requires from the foods, supplements and medications. This can be achieved by taking fiber rich foods which help to keep the bowel movements regular and support gut health [10]. Foods high in fiber include: oats, lentils, chickpeas, beans, whole grain bread, prunes and apricots.

Water, juices, fresh fruits and vegetables help in proper digestion and elimination of waste. Drinking about 2 liters of water per day helps in preventing dehydration, constipation and reduce the side effects of medications.

Foods to reduce inflammation are advised because the immune system of people living with HIV always struggles to get rid of the virus, as a result - is always "activated". An activated immune system produces inflammation. This results in many conditions including heart disease and cancer. Foods that help to reduce inflammation include: green leafy vegetables, Chinese cabbage, broccoli, beets, celery, tomatoes, certain fish (mackerel, salmon, sardines and tuna), certain fruits (blueberries, cherries, pineapple and strawberries), certain nuts (almonds and walnuts), certain oils (olive oil and coconut oil), certain seeds (chia seeds and flax seeds), certain spices (turmeric and ginger).

It may not always be possible to get all the required micronutrients (vitamins and minerals) from the foods that are consumed, resulting in problems such as anemia. Hence people living with HIV are needed to take multivitamin supplements to prevent such problems, and to build and repair tissue. Supplements do not replace a well-balanced diet but can help in getting additional micronutrients required by the body [11].

Assessment of nutrition

Periodical assessment of Nutritional status of an individual when suffering from HIV is very important by taking into consideration the weight and other measurements of muscle mass and body fat ,Hemoglobin and hematocrit counts that measure the iron content in the blood. Hemoglobin A1c levels to diagnose or monitor diabetes and other blood tests to assess the levels of essential fats, proteins, vitamins and minerals.

When a patient identifies changes in the body composition, self-report by him/her is usually the best early indicator; that is when the clinicians should use specific body composition measures to assess body fat redistribution [12].

Conclusion

Since then, nutrition and balanced diet have been the primordial components for maintaining a quality health and a standard body weight, following the basic principles of healthy eating like choosing lean, low-fat sources of protein; cutting down on sugary foods, soft drinks and caffeinated drinks; consuming high amounts of fresh clean vegetables and to the extent possible organic in nature, fresh fruits, whole grains and legumes; including all the essential nutrients in the diet, will serve better to fight against the HIV infection. In addition, it is advised to use multivitamin, mineral and calcium supplements, as it is not always easy to get all the nutrients from the foods one consumes. A well-balanced healthy diet and supplements are the key parts of the total strategy to fight against HIV and stay healthy. Working with a health care provider and a qualified dietician on a regular basis for a nutritional evaluation helps to determine the best dietary practices in the wake of emerging trends in more scientific nutritional approach for holistic health of PLWAs [13].

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