

## **Part II. Knowledge: Technical Update**



## **SESSION 4. NUTRITION MANAGEMENT OF HIV-RELATED SYMPTOMS**

### **Purpose** (slide 2)

The purpose of this session is to equip students with knowledge and skills for the nutrition management of HIV-related symptoms.

### Learning objectives (slide 3)

By the end of this session, students will be able to:

- Explain the nutrition implications of HIV-related symptoms.
- Describe the dietary management of HIV-related symptoms.
- Explain the advantages of proper nutrition for people living with HIV (PLHIV).

### Prerequisite knowledge

- Knowledge of basic facts about HIV and AIDS (Session 1)
- Knowledge of basic nutrition (Session 2)
- Knowledge of the relationship between nutrition and infection (Session 3)
- Knowledge of the links between nutrition and HIV (Session 3)
- Basic counseling skills
- Knowledge of the principles of nursing practices

**Estimated time:** 120 minutes

Session guide (slide 4)

Content	Methodology	Activities	Estimated time (minutes)
Effects of HIV on nutritional status Acute phase Asymptomatic phase Symptomatic phase Full-blown AIDS	Participatory lecture	Review the effects of HIV on nutritional status.	20
Nutrition implications of HIV-related symptoms Reduced food intake Poor nutrient absorption Increased nutrient needs	Participatory lecture	Present HIV-related symptoms and nutrition implications.	20
Importance of proper nutrition for PLHIV	Participatory lecture	Review the importance of good nutrition for PLHIV.	10
Goals and components of nutrition management of HIV-related symptoms	Participatory lecture	Present nutrition management of HIV-related symptoms.	25
Nutrition assessment and counseling of people with HIV-related symptoms	Group activity	Divide participants into two groups. Pass out examples of HIV-related symptoms to each group. Assign time for groups to discuss and identify the dietary management of the symptoms. In plenary, ask each group to present its results and explain the reasons for the recommended food, nutrition, and care practices.	20
	Role-play	Ask students to volunteer for a counseling role-play. Facilitate group discussion.	15
Conclusions			5
Review			5
Total time			120

## Required materials

Flipchart paper and stand  
Writing pens  
Blackboard and chalk or whiteboard and markers  
Overhead projector or LCD projector

## Materials provided

PowerPoint 4  
Handout 4.1. Caring for Symptoms Associated with HIV in Adults  
Handout 4.2. Case Study on Management of HIV-Related Symptoms

## Preparation

Review Lecture Notes and PowerPoint 4.  
Be familiar with related content.  
Review handouts and exercises to identify questions that can help students master the concepts.

## Suggested reading

Bijlsma, M. 1996. *Living Positively: A Nutrition Guide for People with HIV/AIDS*. Mutare, Zimbabwe: Mutare City Health Department.

Fan, H., R. Conner, and L. Villareal. 2000. *The Biology of AIDS*. 4<sup>th</sup> edition. Boston: Jones and Bartlett Publishers.

Food and Nutrition Technical Assistance (FANTA) Project. 2004. *HIV/AIDS: A Guide for Nutritional Care and Support*. 2<sup>nd</sup> edition. Washington, DC: Academy for Educational Development.

Health Canada/Santé de Canada. 2002. *A Comprehensive Guide for the Care of Persons with HIV Disease*. Canadian Strategy on HIV/AIDS. Ottawa.

Miller, T. L., and S. L. Gorbach. 1999. *Nutritional Aspects of HIV Infection*. New York: Oxford University Press.

Piwoz, E., and E. A. Preble. 2001. *HIV/AIDS and Nutrition: A Review of the Literature and Recommendations for Nutritional Care and Support*. Washington, DC: SARA Project, Academy for Educational Development.

Scrimshaw, N. S. 1977. Effect of the Infection on Nutrient Requirements. *American Journal of Clinical Nutrition* 30:1536–44.

WHO/Food and Agriculture Organization of the United Nations (FAO).2002. *Living Well with HIV/AIDS: A Manual on Nutritional Care and Support for People Living with HIV/AIDS*. Rome: FAO.

Related terms

**Catabolism** is the breakdown of body tissues as a source of calories.

**Hypermetabolism** an abnormal increase in metabolic rate.

**Resting energy expenditure** is the amount of calories required for a 24-hour period by the body during a non-active period.

## Introduction (slides 4 and 5)

HIV weakens the immune system and increases vulnerability to opportunistic infections (OIs). OIs cause symptoms that can have negative effects on the nutritional status of PLHIV by reducing food intake or impairing nutrient absorption or metabolism. Nutrition management of HIV-related symptoms is using food and nutrition practices to manage the effects of HIV-related symptoms and maintain food intake and nutrient absorption. Proper nutrition management of HIV-related symptoms can help reduce the severity of symptoms, increase functioning and quality of life, and improve the ability to eat, thereby improving and maintaining nutritional status. Good nutritional status also can boost immune response and reduce vulnerability to OIs.

## Nutrition implications of HIV-related symptoms (slide 6)

As we learned in Session 3, HIV affects nutrition differently in different phases of the infection. Symptoms appear at a critical time when the virus has already begun damaging the immune system and is gradually decreasing the body's capacity to fight infections. CD4 cells, also known as T4 cells, are the main cells to which HIV binds, causing cell death, and are critical to the health of the immune system. The progression of HIV is marked by a progressive depletion of CD4 cells. Monitoring the number of CD4 cells helps monitor the progression of the disease (Fan et al 2000). Medical treatment is critical to treat both symptoms and the underlying OIs. Nutrition interventions complement medical treatment.

Nutrition implications of HIV-related symptoms are categorized according to the effects of HIV on nutritional status, as discussed in Session 3.

**Reduced food consumption** because of appetite loss or anorexia, nausea, oral thrush, constipation, bloating or heartburn. People with HIV tend to have various oral conditions that can make it difficult to eat. These conditions include bacterial infections such as gingivitis or periodontal disease, viral infections such as herpes, and fungal infections such as thrush. Common oral lesions in PLHIV include gingivitis, pyorrhea, periodontitis, aphthous ulcers, stomatitis, chelitis, and secondary syphilis. Most of these lesions require medical treatment, oral hygiene, and proper dietary management to alleviate the symptoms and maintain food intake. **Handout 4.1. Caring for Symptoms Associated with HIV in Adults** includes recommendations for dietary management of some oral conditions. Other oral diseases that are not related to HIV also can affect food intake. Prompt treatment will help PLHIV maintain adequate food intake.

**Increased energy needs** because of fever and sometimes increased needs for other nutrients because of symptoms such as anemia. The body needs additional energy and nutrients to replicate the virus, compensate for nutrient losses, and address symptoms such as fever or anemia that are often present in HIV infection. Fever increases resting energy expenditure and consequently total energy expenditure, increasing energy needs. Often PLHIV gradually decrease their physical activity to maintain their energy balance, limiting their capacity to carry out regular daily activities. As discussed below, symptoms can also reduce absorption of nutrients, further increasing nutrient gaps. In addition to energy, some PLHIV have other symptoms that increase needs for other nutrients. Anemia is common in PLHIV and may result from cytokine-induced suppression of red blood cell production, chronic inflammation, reduced food intake, side

effects of ART such as Zidovudine, or nutritional deficiencies of iron, folate, riboflavin, vitamin A, and vitamin B<sub>12</sub>.

**Poor nutrient absorption** because of symptoms such as diarrhea or vomiting prevents the body from using the nutrients in food and contributes to nutrient losses, which increasingly hamper the ability of PLHIV to meet their nutritional needs. If poor absorption of nutrients is not properly addressed, the deficit in nutrients weakens the body and immune system.

Importance of proper nutrition (slides 7 and 8)

Good nutrition helps maintain good health and prevent disease, regardless of HIV status. Box 1 contains the WHO statement on adequate nutrition (slide 7).

**Box 1. Adequate nutrition for all regardless of HIV status**

Adequate nutrition, which is best achieved through consumption of a balanced healthy diet, is vital for the health and survival of all individuals, regardless of HIV status.

*Source:* WHO 2003.

Good nutritional status is important in the early stages of HIV when proper nutrition strengthens the immune system to fight OIs and may delay disease progression (slide 8). At the onset of symptoms, nutrition interventions can help reduce the severity of infections and the likelihood of weakening the immune system. Proper nutrition also contributes to weight gain and reduces wasting.

**Objectives and components of nutrition management of HIV-related symptoms**  
(slides 9 and 10)

Nutrition management of HIV-related symptoms has the following objectives (slide 9):

- Reduce severity of symptoms.
- Improve functioning and quality of life.
- Enable adequate food intake and absorption during symptomatic periods.
- Prevent malnutrition and wasting.
- Complement and strengthen medical treatment.
- Minimize discomfort and pain while eating by counseling PLHIV to eat small but frequent meals and prepare foods so they are easy to eat.
- Provide additional nutrients to compensate for nutrient losses.
- Prevent dehydration during diarrhea and fever.

Nutrition management of HIV-related symptoms includes the following components (slide 10):

- Assessment to identify symptoms and their effects on diet and nutritional status  
(For more information on nutrition assessment, refer to Session 8.)

- Nutrition counseling for proper dietary management of HIV-related symptoms, based on the use of locally available food and diets. **Handout 4.1. Caring for Symptoms Associated with HIV in Adults** provides recommendations for specific symptoms.
- Provision of supplementary food and/or micronutrient supplementation, if necessary and available

Approaches and practices of symptom management (slides 11–13)

Dietary management of HIV-related symptoms should be integrated into health services and outreach activities where health workers and counselors have contact with PLHIV (e.g., counseling, testing, and antenatal visits). Health workers and counselors can use counseling to assess how clients are managing symptoms and identify alternative options when needed.

**Handout 4.1. Caring for Symptoms Associated with HIV in Adults** lists nutrition practices to manage specific HIV-related symptoms. This dietary advice has been used successfully in some countries but should be adapted to local and personal food habits, food ability, and food preferences. If possible, countries should collect information on such practices and make them available to PLHIV, caregivers, and affected households and communities.

Nurses and program managers can refer to national guidelines on nutrition responses to HIV-related symptoms, if are available, and draw from existing ministry of health guidelines on management of symptoms and illnesses.

**Exercise 1.** Divide students into two equal groups for a question and answer session. Distribute a copy of **Handout 4.1. Caring for Symptoms Associated with HIV in Adults** to each student for reference. Give group 1 a list of the following dietary symptoms: Fever, anorexia, nausea, and vomiting. Give group 2 a list of the following dietary symptoms: Diarrhea, thrush, and constipation. Give each group 10 minutes to identify and master the dietary management of its list of symptoms. In plenary, ask each group present the dietary management of its symptoms. Correct any misinformation and facilitate discussion.

If time allows, give each group another list of symptoms for the same exercise.

When the students have mastered the dietary management of all the symptoms, quiz them orally on the dietary management of all symptoms and ask them to give reasons for the recommended food and nutrition and care practices.

**Exercise 2.** Divide students into pairs for a role-play on nutrition assessment and counseling to help them master this task. Explain that one student in the pair will role-play the counselor and the other will role-play the PLHIV (John). Distribute a copy of **Handout 4.3. Case Study on Management of HIV-Related Symptoms** to each student. Ask the students who will role-play the counselor to assess the client's symptoms and use the information to counsel him on dietary management of his symptoms. Give the pairs 15 minutes for the role-play.

After the role-play, ask two or three students who role-played the counselor to share what was easy or difficult during the assessment and counseling. Ask two or three students who role-played the client to provide feedback first on what the "counselors" did well and then what they could have improved.

Summarize the exercise, highlighting the importance of considering food security issues in the dietary management of symptoms. Remind students to use the related resource materials.

### **Conclusions** (slide 14)

HIV weakens the immune system and increases vulnerability to OIs, which cause symptoms that can have negative effects on nutritional status by reducing food intake or impairing nutrient absorption or metabolism. Proper nutrition management of HIV-related symptoms can help reduce the severity of symptoms, increase functioning and quality of life, improve nutritional status, and boost immune response to OIs. Nutrition management of HIV-related symptoms includes 1) assessment of the effects of the symptoms on diet and nutritional status, 2) counseling on practices to manage specific symptoms based on locally available foods and diets, and 3) supplementary feeding and/or micronutrient supplementation if needed and available.

After the PowerPoint presentation, if there is still time, ask the students to do one or both of the following exercises.

## References

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- Bijlsma, M. 1996. *Living Positively: A Nutrition Guide for People with HIV/AIDS*. Mutare, Zimbabwe: Mutare City Health Department.
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- Castleman, T., E. Seumo-Fosso, and B. Cogill. 2003. *Food and Nutrition Implications of Antiretroviral Therapy in Resource Limited Settings*. Washington, DC: FANTA Project, Academy for Educational Development.
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- Network of African People Living with HIV/AIDS. 1997. *A Healthy Diet for Better Nutrition for People Living with HIV/AIDS*. Nairobi.
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- Macallan, D. C., C. Noble, C. Baldwin, M. Koskett, T. McManus, and G. E. Griffin. 1999. Prospective Analysis of Patterns of Weight Changes in Stage IV Human Immunodeficiency Virus Infection. In Miller, T. I., and S. L. Gorbach, eds. *Nutritional Aspects of HIV Infection*. New York: Oxford University Press.

Miller, T. L., and S. L. Gorbach. 1999. *Nutritional Aspects of HIV Infection*. New York: Oxford University Press.

Piwoz, E., and E. A. Preble. 2001. *HIV/AIDS and Nutrition: A Review of the Literature and Recommendations for Nutritional Care and Support*. Washington, DC: SARA Project, Academy for Educational Development.

Scrimshaw, N. S. 1977. Effect of the Infection on Nutrient Requirements. *American Journal of Clinical Nutrition* 30:1536–44.

WHO. 2003. *Nutrient Requirements for People Living with HIV/AIDS*. Report of a Technical Consultation, WHO, Geneva, 13–15 May, 2003.

WHO and FAO. 2002. *Living Well with HIV/AIDS: A Manual on Nutritional Care and Support for People Living with HIV/AIDS*. Rome: FAO.

#### Handout 4.1. Caring for Symptoms Associated with HIV in Adults

Symptom	Dietary management	Care and nutrition practice
Anorexia (appetite loss)	<p>Stimulate appetite by eating favorite foods.</p> <p>Eat small amounts of food more often.</p> <p>Eat more energy-dense foods.</p> <p>Avoid strong-smelling foods.</p>	<p>If appetite loss is a result of illness, seek medical treatment</p>
Diarrhea	<p>Drink plenty of fluids (soup, fruit juice, boiled water, tea) to avoid dehydration.</p> <p>Avoid strong citrus fruits such as oranges and lemons, which may irritate the stomach.</p> <p>Eat foods rich in soluble fiber (millet, bananas, peas, and lentils) to help retain fluids.</p> <p>Eat fermented foods such as porridges and yoghurt.</p> <p>Eat easily digestible foods such as rice, bread, millet, maize porridge, potatoes, sweet potatoes, and crackers.</p> <p>Eat small amounts of food frequently and continue to eat after illness to recover weight and nutrients lost.</p> <p>Eat soft fruits and vegetables such as bananas, squash, cooked and mashed green bananas, mashed sweet potatoes, and mashed carrots.</p> <p>Eat eggs, chicken, or fish for protein.</p> <p>Drink nonfat milk if there is no problem with lactose.</p> <p>Boil or steam foods.</p> <p>Avoid the following foods:</p> <ul style="list-style-type: none"> <li>Dairy products such as milk</li> <li>Caffeine (coffee and teas)</li> <li>Alcohol</li> <li>Fried foods and extra oil, butter, or lard</li> <li>Gas-forming foods such as cabbage, onions, and carbonated soft drinks.</li> </ul>	<p>Prevention</p> <p>Drink plenty of clean, boiled water.</p> <p>Wash hands with soap and water before handling, preparing, serving, or storing food.</p> <p>Wash hands with soap after using the toilet or latrine or cleaning a child after defecation.</p> <p>Treatment</p> <p>Drink more fluids to prevent dehydration. Prepare rehydration solutions using oral rehydration salt packets or a home-made solution of 1 liter of boiled water, 4 teaspoons of sugar, and ½ teaspoon of iodized salt.</p> <p>Go to a health center if you have symptoms such as severe dehydration (low or no urine output), fainting, dizziness, shortness of breath, bloody stools, high fever, vomiting, severe abdominal pain, or diarrhea for more than 3 days.</p>
Fever	<p>Eat soups with energy-and nutrient-rich foods such as maize, potatoes, and carrots.</p>	<p>Drink fluids, especially clean boiled water, to prevent dehydration.</p> <p>Bathe in cool water.</p>

Symptom	Dietary management	Care and nutrition practice
	<p>Drink plenty of liquids.            Drink tea made from lemon, guava, or gum leaves.            Drink more, beyond thirst.            Continue to eat small, frequent meals as tolerated.</p>	<p>Rest.            Take two aspirin or Panadol, if available, with meals three times a day.            Go to a health center if you have a fever for several days that is not relieved with aspirin, loss of consciousness, severe body pain, yellow eyes, severe diarrhea, convulsions, or seizures.</p>
Nausea and vomiting	<p>Eat small and frequent meals.            Eat soups, unsweetened porridge, and fruit such as bananas.            Eat lightly salty and dry foods such as crackers to calm the stomach.            Drink herbal teas and lemon juice in hot water.            Avoid spicy or fatty foods.            Avoid caffeine (coffee and tea) and alcohol.            Drink liquids such as clean boiled water.</p>	<p>Avoid an empty stomach, which makes nausea worse.            Avoid lying down immediately after eating; wait at least 20 minutes to avoid nausea.            Rest between meals.</p>
Thrush	<p>Eat soft mashed foods such as carrots, sweet potatoes, bananas, scrambled eggs, soup, and porridge.            Eat cold foods or foods at room temperature.            Avoid spicy, salty, or sticky foods that can irritate mouth sores.            Avoid strong citrus fruits and juices that can irritate mouth sores.            Avoid sugary foods that cause yeast to grow.            Avoid alcohol.            Drink plenty of liquids.</p>	<p>Seek medical treatment.            Use a spoon or cup to eat small amounts of food.            Tilt your head back when eating to help you swallow.            Rinse your mouth with warm boiled salt water after eating to reduce irritation and keep infected areas clean so yeast cannot grow.</p>
Anemia	<p>Eat more iron-rich foods such as eggs, meat, fish, and liver; green leafy vegetables such as collard greens and spinach; legumes such as beans, lentils, and groundnuts; nuts; oil seeds; and</p>	<p>If available, take one iron tablet a day with food and with vitamin C (tomato or orange juice) to help with absorption.            Seek treatment for malaria and hookworm.</p>

Symptom	Dietary management	Care and nutrition practice
	fortified cereals. Take iron supplements.	Drink plenty of fluids to avoid constipation.
Muscle wasting	Eat small meals more often. Improve the quality and quantity of your diet by eating a variety of foods. Eat more protein. Eat more starchy foods such as cereals and other staples.	Do regular weight-bearing exercises to build muscles.
Constipation	Eat high-fiber foods such as maize, whole wheat bread, green vegetables, and washed fruits with the peel. Drink plenty of liquids. Avoid processed or refined foods.	Avoid using enemas and medications to cleanse the bowels. Drink plenty of liquids, including boiled water.
Bloating or heartburn	Eat small, frequent meals. Avoid gas-forming foods such as cabbage, onions, and carbonated sodas. Drink plenty of fluids.	Eat long enough before sleeping to let food digest.
Tuberculosis	Eat foods high in protein, energy, and vitamins.	Seek medical attention immediately. Ask health workers about taking medication with food. If taking Isoniazid for treatment, take a vitamin B <sub>6</sub> supplement to avoid deficiency.
Loss of taste or abnormal taste	Enhance the flavor of food with salt, spices, herbs, or lemon. Chew food well and move it around your mouth to stimulate taste receptors.	

#### Handout 4.2. Case Study on Management of HIV-Related Symptoms

John, 35, was tested for HIV 2 years ago when he donated blood to his brother, who just had an accident. John was informed the day after the blood donation that he was HIV positive. He attended several counseling sessions to help cope with the infection and remembered that the counselor insisted that he seek prompt treatment for any symptom. John has not been feeling well for the past 2 days. He is suffering from nausea, thrush, and fever, and has decided to go to the counselor again for advice.

## Session Four: Nutrition Management of HIV-Related Symptoms



## Purpose

Provide knowledge and skills for nutrition management of symptoms related to HIV.

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## Learning Objectives

- Explain the nutritional implications of HIV-related symptoms.
- Describe the dietary management of HIV-related symptoms.
- Explain the advantages of proper nutrition for PLHIV.

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## Session Outline

- Effects of HIV on nutritional status
- HIV-related symptoms and nutrition implications
- Importance of proper nutrition for PLHIV
- Nutrition management of HIV-related symptoms

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## Rationale

- HIV causes opportunistic infections (OIs), which have symptoms that affect nutritional status negatively.
- Nutrition practices can help manage symptoms and reduce negative nutrition impacts.
- Nutrition management of HIV-related symptoms can help reduce the severity of symptoms, increase functioning and quality of life, and improve the ability to eat, thereby improving and maintaining nutritional status.

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## Nutrition Implications of HIV-Related Symptoms

- Reduced food consumption from appetite loss or anorexia, nausea, oral thrush, constipation, bloating, or heartburn
- Increased energy needs because of fever and other nutrient deficiencies such as anemia
- Reduced nutrient absorption because of diarrhea and vomiting

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## Importance of Good Nutrition Regardless of HIV Status

Adequate nutrition, best achieved by eating a balanced, healthy diet, is vital for health and survival for all people, regardless of HIV status (WHO 2003).

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## Importance of Good Nutrition for PLHIV

- In the early stages of HIV infection, strengthens the immune system and reduces vulnerability to OIs
- In later stages, reduces the severity of infections and prevents weight loss and wasting

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## Goals of Nutrition Management of HIV-Related Symptoms

- Reduce severity of symptoms.
- Improve functioning and quality of life.
- Enable adequate food intake and absorption during symptomatic periods.
- Prevent malnutrition and wasting.
- Complement and strengthen medical treatment.
- Increase comfort and reduce pain.
- Provide nutrients to compensate for nutrient loss.
- Prevents dehydration in diarrhea fever.

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## Components of Nutrition Management of HIV-Related Symptoms

- Nutrition assessment
- Nutrition counseling for proper dietary management
- Micronutrient supplementation if necessary and available

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## Approaches to Symptom Management

- Adapt dietary management to the client's food habits and diet.
- During counseling, assess how the client is managing symptoms.

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## Managing Specific Symptoms

- Anorexia: Eat small amounts of food more often.
- Diarrhea: Drink lots of fluids, eat small amounts of food more often, and continue to eat after illness.
- Anemia: Eat iron-rich foods (animal products, green leafy vegetables) and take iron supplements.
- Thrush: Eat soft mashed foods, avoid spicy food, and drink plenty of fluids.
- Loss of taste: Enhance flavor with salt, spices, herbs, or lemon; chew food well and move it around in the mouth.

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## Managing Specific Symptoms, Cont.

- Bloating and heartburn: Eat small, frequent meals, avoid gas-forming foods, and eat long enough before sleeping.
- Nausea: Eat small, frequent meals, avoid lying down immediately after eating, and rest between meals.
- Fever: Drink plenty of fluids and eat energy- and nutrient-rich soups and foods.
- Constipation: Eat more high-fiber foods and drink plenty of fluids.

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## Conclusions

- HIV increases vulnerability to OIs, which cause symptoms that can reduce food intake or impair nutrient absorption or metabolism.
- Nutrition management of HIV-related symptoms can reduce the severity of symptoms, improve nutritional status, and boost immune response.
- Nutrition management includes assessing the effects of the symptoms on diet and nutritional status, counseling on specific symptoms, and food and/or micronutrient supplementation if needed and available.

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