

Part III. Client Services: A Life Cycle Approach

SESSION 8. NUTRITION CARE AND SUPPORT OF ADULTS LIVING WITH HIV

Purpose (slide 2)

The purpose of this session is to equip students with the knowledge and skills to provide dietary guidance and nutrition counseling and care to adults living with HIV.

Learning objectives (slide 3)

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

- Describe the nutrient requirements of PLHIV.
- Describe the concept of nutrition care and support of PLHIV.
- Demonstrate how to do nutrition assessment of PLHIV.
- Demonstrate how to provide nutrition guidance and counseling to HIV-infected adults.
- Describe the use of locally available foods to meet PLHIV nutritional needs.
- Describe the special nutritional needs of older people.

Prerequisite knowledge

Basic nutrition

Principles of nutrition throughout the life cycle

Nutritional value of indigenous locally available foods

Basics of HIV/AIDS, nutrition, and infection

Link between nutrition and HIV

Estimated time: 120 minutes

Session guide (slide 4)

Content	Methodology	Activities	Estimated time (minutes)
<p>Nutrition care and support of HIV-infected adults</p> <p>Nutrient requirements of HIV-infected people</p> <p>Goals and components of nutritional care and support of HIV-infected people</p> <p>Nutrition assessment of HIV-infected people</p> <p>Nutrition-related actions for HIV-infected people</p>	Participatory lecture	Review the nutrient requirements of HIV-infected people, the effects of HIV on nutritional status, the goals and components of nutrition care and support, and the steps in nutrition assessment and counseling of HIV-infected people.	45
Management of severe malnutrition in adults	Participatory lecture	Summarize the main principles of managing severe malnutrition in adults and preparing specialized foods for treatment.	20
<p>Nutritional needs of older people</p> <p>Factors that affect their nutritional needs</p> <p>Using indigenous locally available foods to meet their nutritional needs.</p> <p>Steps to follow when providing nutrition guidance and counseling to older people</p>	Participatory lecture	Review the nutritional needs of older people and factors that affect their nutritional needs.	25
Nutrition counseling and guidance on menus using locally available foods for adult PLHIV	Group work and role plays	Pass out role plays and group work activities. Assign roles for role plays and questions for group work. After each activity, reconvene to discuss main points.	20
Conclusions			5
Review			5
Total time			120

Required materials

- Flipchart paper and stand
- Writing pens
- Blackboard and chalk or whiteboard and markers
- Overhead projector and transparencies or LCD projector and laptop
- Food composition tables for local foods or foods eaten in east, central, and southern Africa
- Locally available foods
- Cups and food containers commonly used in the country

Materials provided

- PowerPoint 8
- **Handout 8.1. Observation Checklist for Nutrition Assessment of Adult PLHIV**
- **Handout 8.2. Observation Checklist for Nutrition Counseling of Adult PLHIV**
- **Handout 8.3. Sample Menu for a PLHIV**
- **Handout 8.4. Food Sources of Vitamins**

Preparation

1. Review Lecture Notes and PowerPoint 8.
2. Review the handouts and exercises to identify questions to help students master the concepts.

Suggested reading

Charney, P., and A. Malone. 2004. Nutrition Assessment. Chicago: American Dietetic Association.

Commonwealth Regional Health Community Secretariat. 2002. Report on Traditional and Indigenous Foods. Arusha, Tanzania.

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WHO and 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.

Introduction (5 and 6)

The effects of HIV infection on nutritional status and needs vary according to the stage of the disease. Detailed information about these effects at each stage is given in Session 4. WHO recommendations are different for the two distinct phases of HIV infection: asymptomatic and symptomatic.

During the **asymptomatic phase**, energy requirements of PLHIV increase by 10 percent over the level of energy intake recommended for healthy, non-HIV-infected people of the same age, sex, and physical activity level. For example, the energy requirements of a 35-year-old moderately active asymptomatic male PLHIV are 3,152 kcal/day, compared with 2,865 kcal/day for a 35-year-old moderately active male who is not infected with HIV ($2865 + 287$ [10 percent] = 3,152). The energy requirements of a 35-year-old moderately active asymptomatic female PLHIV are 2,360 kcal/day, compared with 2,145 kcal/day for a 35-year-old moderately active female who is not infected with HIV ($2,145 + 215$ [10 percent] = 2,360).

During the **symptomatic phase**, energy requirements of PLHIV increase by 20–30 percent over the level of energy intake recommended for healthy, non-HIV-infected people of the same age, sex, and physical activity level. The range in the requirement reflects the fact that people with more frequent and more severe symptoms need up to 30 percent more energy. For example, the energy requirement of a 35-year-old moderately active male PLHIV is 3,438 kcal/day ($2,865 + 573$ [20 percent] = 3,438) during the early symptomatic stage and 3,734 kcal/day ($2,865 + 860$ [30 percent] = 3,725) during the late symptomatic stage. The energy requirement of a 35-year-old moderately active woman is 3,438 kcal/day ($2,145 + 429$ [20 percent] = 2,574) during the early symptomatic stage and 3,734 kcal/day ($2,145 + 644$ [30 percent] = 2,789) during the late symptomatic stage.

Data are not sufficient to recommend an increase in protein or micronutrients for PLHIV. WHO recommends that both PLHIV and non-infected people get 12–15 percent of their energy from protein and take micronutrients at 1 RDA. However, people with pre-existing or concurrent protein and micronutrient deficiencies may require higher intake.

These recommendations are for all PLHIV, whether they are taking antiretroviral drugs or not.

Exercise 1. Divide the students into two groups to do an exercise on dietary guidance for PLHIW. Give each group foods to use for a sample daily menu for an asymptomatic adult living with HIV. Ask each group to:

- Use the foods to design a sample daily menu for an asymptomatic and symptomatic PLHIV. Explain the characteristic of the menu.
- Explain the difference between the menus for the asymptomatic PLHIV and symptomatic PLHIV.
- Describe additional guidance to give to asymptomatic and symptomatic PLHIV.

Ask each group to report back after 30 minutes. Summarize the answers of the two groups.

Contact points for nutrition care and support of PLHIV (slide 7)

Nutrition care and support for PLHIV should be provided at the following contact points:

- Voluntary counseling and testing sites
- Antiretroviral treatment (ART) sites
- Health care facilities
- Home visits and community support groups

Goals of nutrition care and support for PLHIV (slide 8)

Nutrition care and support helps PLHIV do the following:

Improve nutritional status by maintaining weight and preventing loss of weight and muscle mass.

Ensure adequate nutrient intake by improving eating habits and building stores of essential nutrients, including carbohydrates, protein, and vitamins and minerals including antioxidant nutrients necessary for the functioning of the immune system.

Prevent food-borne illnesses by promoting good hygiene and food safety.

Provide palliative care during the advanced stages of HIV disease.

Enhance quality of life by managing symptoms that affect food intake.

Components of nutrition care and support of PLHIV (slide 9)

Nutrition care and support for PLHIV is a package that should include the following;

- Nutrition assessment
- Nutrition counseling
- Micronutrient supplementation (if needed)
- Food provision (if needed)
- Food safety and hygiene
- Physical activity

- Psychosocial support
- Referral to other services

Nutrition assessment (slide 10)

Nutrition assessment gathers information about the client to help guide decisions on their nutrition care and support and referrals to other services to improve their well-being. Nutrition assessment can include the following:

- Anthropometric measurement (body mass index [BMI], weight, and changes in weight)
- Biochemical information (laboratory tests)
- Clinical information (appetite change, nausea, vomiting, alcohol intake)
- Dietary information (24-hour food recall, quality of diet)
- Food security status (food availability and access (See **Session 7: Food Security and Nutrition Care and Support of People Living with HIV** for more information.)

Exercise 2. Ask for two volunteers to role-play nutrition assessment of a person with HIV. One volunteer will play Martha, a 28-year-old asymptomatic PLHIV. The other will play Clara, and HIV/AIDS counselor. Ask Clara to carry out Martha’s nutrition assessment.

Distribute **Handout 8.1. Checklist for Observing Nutrition Assessment of PLHIV** to the other students. After the role-play, ask “Martha” and “Clara” to explain what went well and what did not go well. Ask the students to provide additional comments using the checklist. Summarize the main points that came from the assessment. If time allows, ask two other volunteers to do a nutrition assessment of a symptomatic PLHIV.

Nutrition counseling (slide 11)

Health service providers can use information collected during nutrition assessments to fine-tune counseling and determine what other interventions are needed. Nutrition counseling for PLHIV should focus on the following messages:

Increasing food intake. A nutritious diet will help PLHIV maintain proper functioning of the immune system and provide the extra energy needed to carry out daily activities. The health service provider should encourage PLHIV to snack regularly throughout the day and eat small but regular meals. Soft foods may be tolerated better during illness. Eating small but frequent meals will help ensure sufficient food intake to prevent weight loss and wasting.

Eating a variety of foods. The best way for PLHIV to improve their diets and avoid deficiencies is to eat a variety of foods including the following:

- Dried legumes (beans, peas, beans, lentils, cowpeas, pigeon peas, groundnuts and nuts)

- Meat, fish, milk products, or egg, if available
- Fruits and vegetables
- Fats in moderation
- Plenty of water

Managing symptoms and food/drug interactions. PLHIV may suffer from symptoms that can make it difficult to maintain a nutritious diet. Many also take drugs that can have side effects such as taste changes, loss of appetite, diarrhea, nausea, and vomiting. These side effects can affect food intake and nutrient absorption and negatively affect nutritional status. If medications cause taste changes, PLHIV can add flavor enhancers such as salt, sugar, spices, vinegar, or lemon to stimulate the taste buds, increase taste acuity, and mask unpleasant flavors. Eating energy- and nutrient-dense foods such as maize, groundnuts, and carrots and drinking plenty of fluids may help replace nutrient losses and prevent dehydration during fever or diarrhea. (See Session 5.)

Exercise 3. Ask for two other volunteers to play the same roles as in Exercise 2. This time “Clara” should role-play counseling “Martha.” Ask “Clara” to explain how she used the information collected during the nutrition assessment in the counseling session.

Distribute **Handout 8.2. Checklist for Observing Nutrition Counseling of PLHIV** to the other students. After the role-play, ask “Martha” and “Clara” to explain what went well and what did not go well. Ask students to provide additional comments using the checklist. Summarize the main points from the counseling session. If time allows, ask two other volunteers to carry out nutritional counseling of a symptomatic PLHIV.

Exercise 4. Ask the students to divide into two groups to do an exercise on helping adult clients use indigenous and locally available foods to meet their energy and nutrient needs.

Distribute copies of **Handout 8.3. Sample Daily Menu for a PLHIV** and **Handout 8.4. Food Sources of Vitamins** to each student. Ask students to review the frequency of meals, the quantity of food for each meal, the nutrient content of each food, and the contribution of each food to the nutritional needs of adult men and women.

Ask group 1 to answer the following questions, referring to the sample menu:

- Why is the proposed menu suitable for a moderately active asymptomatic 35-year-old man living with HIV?
- Is the frequency of meals realistic? If not, what alternative options do you need to consider?
- How can the proposed quantity of foods be adapted using the local system of measurements?
- How can you adapt this menu to your area or country?
- How can this menu be adjusted if the man becomes less or more active?

Ask group 2 to answer the following question:

- How can you adapt the proposed menu to make it suitable for a 35-year-old *symptomatic* male PLHIV who is recovering at home from severe malnutrition?

Give the groups 1 hour. When the time is up, ask each group to report back. Ask a student to summarize the major points that came out of each group presentation.

Micronutrient supplementation (slide 12)

PLHIV can best meet their micronutrient needs by eating a diverse diet that includes fortified foods. However, pre-existing micronutrient deficiencies and deficiencies resulting from HIV need to be addressed. This may include providing micronutrient supplements at 1 RDA to PLHIV whose diets are not sufficient.

Health service providers should collect clinical and dietary information from PLHIV as a part of nutrition assessment to determine whether their diets are diverse enough to provide the necessary micronutrients. If not, micronutrient supplements can be prescribed. Where available, biochemical tests should be carried out for more accurate testing of micronutrient status.

Food provision (slide 13)

Studies have shown that malnutrition significantly increases mortality risk for PLHIV. Specialized food products help malnourished clients manage and address malnutrition.

Severely malnourished clients should receive therapeutic food. Management of severe malnutrition in PLHIV is discussed in more detail below.

Service providers should follow national policies and protocols when determining whether PLHIV need food provision.

Food safety and hygiene messages (slide 14)

Proper food safety and hygiene are important for PLHIV because their immune systems have already been weakened. Preventing water- and food-borne disease is crucial. Contaminated food and water can cause diseases that involve diarrhea and vomiting, which can deplete nutrients and decrease absorption. The following messages encourage PLHIV to maintain healthy hygiene levels:

General

- Drink only clean water that has been brought to a rolling boil to kill germs or treated with a chlorination product such as Water Guard and stored in a clean container with a lid.
- Wash hands with soap before and after touching foods and using the latrine.

Animal products

- Thoroughly cook all animal products (meat, chicken, pork, fish, and eggs).
- Avoid raw or soft-boiled eggs or undercooked meat.
- Thoroughly clean utensils and surfaces that have been in contact with uncooked foods.
- Cover meat, poultry, and fish with a clear cover or cloth and keep separate from other foods to avoid contamination.

Fruits and vegetables

- Use clean water to thoroughly wash all fruits and vegetables.
- If it is not possible to wash fruits and vegetables properly, remove the skin to avoid contamination.
- Cut out bruises on fruits and vegetables to remove any mold or bacteria that may be growing there.
- Avoid eating groundnuts and maize that are moldy, shriveled, or spotted with spots.

Food storage and handling

- Keep areas where food is prepared free of flies and other insects.
- Cover uneaten food to avoid contamination.
- Keep hot foods hot and cold foods cold before eating.
- If food products have expiration labels, do not eat after the “best before” date has expired.
- Store cooked food at most for one day and reheat before eating.
- If you have a refrigerator, put all leftover foods in it.

Physical activity (slide 15)

Being active helps stimulate appetite, develop muscles, reduce stress, and maintain physical and mental health. Health service providers should encourage PLHIV to stay as active as possible. Physical activity can also have a positive effect on mental health.

Psychosocial support (slide 16)

PLHIV may suffer from depression, which can reduce appetite and motivation to maintain their health. During the clinical assessment, the health service provider can focus on the client's emotional state and how this affects diet. Questions related to alcohol consumption may reveal a need for support and counseling.

PLHIV usually can benefit from extra emotional care and psychosocial support. Health service providers should provide such support and refer clients to community groups where available.

Referral to other services (slide 17)

Health service providers can help PLHIV determine which services in addition to typical HIV-related services they are eligible for. Such services might include food aid, livelihood strengthening, and microfinance opportunities. PLHIV support groups and associations are becoming more common in many countries. Aside from offering psychosocial support, these groups can link people to HIV-related services and other programs that can improve quality of life.

Management of severe malnutrition in adults (slide 18)

Malnutrition in adults is often associated with other illness such as infections, intestinal malabsorption, alcoholism, liver disease, or HIV. Both malnutrition and the underlying illnesses should be treated. Health service providers should follow the 1999 WHO guidelines for management of severe malnutrition of adults.

Classification of severe malnutrition in adults (slide 19)

Nutrition assessment is necessary to identify severe malnutrition in adults. For adults, BMI is the preferred index for determining nutritional status. BMI is the ratio of weight in kilograms to height in meters squared (kg/m^2).

$$\text{BMI} = \frac{\text{weight (kg)}}{\text{height (m)}^2}$$

To calculate BMI, divide weight in kilograms by the square of height in meters (kg/m^2). For example, a 50-kg woman with a height of 155 cm (1.55 m) would have a BMI of 20.83 ($50/[1.55*1.55]$).

Treatment of severe malnutrition in adults (slides 20 and 21)

Severely malnourished adults often have infections, impaired liver and intestinal function, and problems related to electrolyte imbalance. Some adults are so

anorexic they require nasogastric feeding, which as a last resort because it can increase the risk of infection.

During the **initial phase of treatment** (usually 1–7 days), life-threatening illnesses and infections are treated and therapeutic food is provided. Non-pregnant severely malnourished adults should also be given a single dose of vitamin A (200,000 IU).

Therapeutic food products such as F-75 and F-100 therapeutic milks are commonly used to treat and rehabilitate severely malnourished people in a clinical setting. There is growing experience with the use of ready-to-use therapeutic foods (RUTF) for PLHIV, especially for community-based approaches to therapeutic care.

F-75 is used during the initial treatment phase, and F-100 or RUTF during the rehabilitation phase. Both formulas can be purchased commercially as a powder that requires adding clean water. They can also be made from dried skimmed milk, sugar, cereal flour, oil, mineral mix, and vitamin mix. Table 2 lists the amounts of ingredients to prepare both F-75 and F-100.

Table 2. Preparation of F-75 and F-100 diets

Ingredient	Amount	
	F-75	F-100
Dried skimmed milk	25 g	100 g
Sugar	70 g	50 g
Cereal flour	35 g	–
Vegetable oil	27 g	60 g
Mineral mix	20 ml	20 ml
Vitamin mix	140 ml	140 ml
Water to make	1,000 ml	1,000 ml

To prepare the F-75 diet, add the dried skimmed milk, sugar, cereal flour, and oil to some water and mix. Boil for 5–7 minutes. Allow to cool and then add the vitamin and mineral mix and mix again. Make up the volume to 1,000 ml of water.

A comparable formula can be made from 35 g of whole died milk, 70 g of sugar, 35 g of cereal flour, 17 g of oil, 20 ml of mineral mix, 140 mg of vitamin mix, and water to make 1,000 ml.

If cereal flour or cooking facilities are not available, a comparable formula can be made from 25 mg of dried skimmed milk, 100 g of sugar, 27 g of oil, 20 ml of mineral mix, 140 mg of vitamin mix, and water to make 1,000 ml. This formula has high osmolarity and may not be tolerated by patients with diarrhea.

To prepare the F-100 diet, add the dried skimmed milk, sugar, and oil to some warm boiled water and mix. Add the mineral and vitamin mix and mix again. Make up the volume to 1,000 ml with water.

A comparable formula can be made from 110 g of whole dried milk, 50 g of sugar, 30 g of oil, 20 ml of mineral mix, 140 mg of vitamin mix, and water to make 1,000 ml. Alternatively, use 880 ml of fresh cow milk, 75 g of sugar, 20 g of oil, 20 ml of mineral mix, 140 mg of vitamin mix, and water to make 1,000 ml.

Hygiene: Everyone who prepares the therapeutic milk and serves patients should wash hands with soap and water beforehand. Once prepared, the liquid milk must be used within 3 hours or discarded.

Table 3 shows the daily dietary and volume requirements to treat severely malnourished adults in the initial stage.

Table 3. Dietary requirements for initial treatment of severely malnourished adults

Age (years)	Daily energy requirement**	Volume of diet required (ml/kg per hour)	
	Kcal/kg	F-75	F-100
19–75	40	2.2	1.7
> 75	35	2.0	1.5

During the **rehabilitation phase**, severely malnourished adults should be given traditional foods with added oil and mineral and vitamin mix. Severely malnourished adults become very hungry as their appetites improve and often ask for food. Health service providers should give a variety of food and allow the adult patient to eat as desired. F-100 should be given between meals. Patients can be discharged when they are eating well and gaining weight (e.g., BMI > 18.5), and have a reliable source of foods at home. Failure to respond to the treatment is often a result of unrecognized underlying illness, micronutrient deficiency, or refusal to follow the treatment regimen.

Follow-up

Before discharge, the health service provider should meet with the patient and caregiver to counsel on how to use foods available at home to improve and maintain good health and nutritional status. Regular follow-up visits should be scheduled with the patient and caregiver after discharge to assess improvement in health and nutritional status and counsel on how to solve medical and nutrition problems encountered during the recovery period.

Nutrient requirements of older adults (slide 22)

As people age their nutritional needs change. Adults > 55 years old need fewer calories but more vitamins and minerals than younger adults. Health service providers who work with older PLHIV need to consider these factors.

Energy needs. Older adults have lower baseline caloric requirements than younger adults. For example, a 60-year-old moderately active man needs 2,371 kcal/day.

Micronutrient needs. Older adults need more vitamins and minerals than younger adults. Table 4 shows the recommended daily vitamin intake for older people.

Table 4. Recommended daily vitamin intake for older people

Vitamin	Males	Females
Vitamin A µg	900	700
Vitamin C Mg	80	75
Vitamin D µg	15+	15+
Vitamin E mg	15	15
Vitamin K µg	120+	90+
Thiamin mg	1.2	1.1
Riboflavin mg	1.3	1.1
Niacin mg	16	14
Vitamin B6 mg	17	1.5
Folate µg	400	400
Vitamin B12 µg	2.4	2.4
Pantothenic acid Mg/d	5+	5+
Biotin µg	30	30+
Choline mg	550	425+

Factors that affect the nutritional status of older adults (slide 23)

The following factors affect the nutritional status of older adults:

- **Reduced muscle mass and physical activity** reduce the calories needed.
- **Sensory changes** reduce the ability to taste and smell food and reduce appetite and affect eating patterns.
- **Oral health problems** such as tooth loss and gum disease often prevent older adults from eating foods such as meat, fresh fruit, and vegetables that require biting and chewing and might make eating less pleasurable overall.
- **Digestive problems** including gastritis, decline in enzyme production, and changes in the size of the intestine can lead to poor appetite, poor nutrient absorption, and constipation.
- **General health problems** can affect appetite and the ability to prepare food.
- **Degenerative diseases** such as arthritis can make chopping food and collecting firewood more difficult.
- **Side effects of medications** can cause dry mouth, nausea, abdominal pain, bloating, and taste changes, which might change eating habits. Some medications can also affect nutrient absorption and utilization.

Conclusions (slide 24)

Proper nutritional care and support of PLHIV helps strengthen the immune system, reduce the severity of opportunistic infections, alleviate HIV-related symptoms, manage the effects of food-drug interactions on nutritional status, and contribute to the efficacy of and adherence to medications and may slow the progression of the disease to AIDS.

References

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Handout 8.1. Observation Checklist for Nutrition Assessment of PLHIV

Modify and adapt this tool as needed.

Did the health service provider ...	Yes	No	Comments
Review the results of the laboratory tests?			
Take anthropometric measurements (weight, height, BMI)?			
Review dietary intake?			
Types and variety of foods eaten?			
Amount of foods eaten?			
Frequency of meals?			
Use of nutrition supplements?			
Fluid intake?			
Assess food access and availability?			
Assess HIV-related symptoms and illnesses?			
Kinds of symptoms?			
Frequency?			
Food used to address each symptom?			
Strategies to deal with each symptom?			
Review food-drug interactions?			
Medications taken?			
Medication side-effects that affect food intake?			
Effects of medications on nutrient absorption and utilization?			
Effects of food on drug efficacy?			
Unhealthy food-drug effects?			
Assess hygiene and food safety?			
For fruits and vegetables?			
For meat?			
Food access and availability?			
Food grown?			
Food purchased regularly?			
Periods of food shortage?			

Did the health service provider ...	Yes	No	Comments
Foods affected by shortages?			
Strategies to cope with food shortages?			
Assess physical activity?			
Review lifestyle practices such as smoking and drinking alcohol and caffeine?			
Assess psychosocial factors including stress, depression, and stigma?			

Handout 8.2. Observation Checklist for Nutrition Counseling of PLHIV

Modify and adapt this tool as needed.

Did the counselor ...	Yes	No	Comments
Review the results of the laboratory tests?			
Greet the client?			
Introduce himself or herself to the client?			
Treat the client with respect and acceptance?			
Listen carefully and actively and show empathy to the client's needs and concerns?			
Make eye contact when talking with the client?			
Ask open-ended questions?			
Counsel on food intake?			
Counsel to eat small and frequent meals?			
Counsel to eat a variety of foods?			
Counsel on nutritional management of HIV-related symptoms?			
Counsel on nutritional management of food-drug interactions?			
Counsel on meal and drug time table?			
Counsel on foods to avoid?			
Counsel on recommended foods?			
Counsel on nutrient supplements required?			
Counsel on food safety and hygiene?			
Counsel on water?			
Counsel on food handling?			
Give psychosocial support?			
Praise and reaffirm the things the client is doing right?			
Suggest interventions that were acceptable, affordable, and feasible for the client?			
Communicate the nutrition information based on the client's level of knowledge and cultural values and beliefs?			
Maintain professional conduct during counseling?			
Discuss and schedule a follow-up meeting?			

Handout 8.3. Sample Daily Menu for PLHIV

The menu below provides 3,152 kcal/day for a 35-year-old moderately active, asymptomatic male PLHIV.

Meal	Type and quantity of foods
Breakfast	1 bowl of maize porridge with milk and groundnut paste 1 orange Water
Snack	1 serving of paw paw 1 chapati
Lunch	2 bowls of <i>ugali</i> 1 cup of spinach stew with dried fish 1 banana Water
Snack	1 bowl of maize porridge with milk and groundnut paste
Dinner	1 bowl of <i>matoke</i> 1 cup of beans with crayfish Water

Handout 8.4. Food Sources of Vitamins

Vitamins	Food sources
Vitamin A	All yellow and orange fruit and vegetables, dark green leafy vegetables, liver, oil fish, dairy products, and egg yolks
Vitamin C	Citrus fruits (orange, lemon, guava)
Vitamin D	Milk, meat, fish, liver
Vitamin E	Leafy vegetables, vegetable oils, peanuts, egg yolks, dark green vegetables, nuts and seeds, whole-grain cereals
Vitamin K	Fish, liver, spinach, egg
Vitamin B1 Thiamin	Whole grain cereals, beans, meat and poultry, and fish
Vitamin B2 riboflavin	Milk, yogurt, meat, green leaves, and whole-grain cereals
Vitamin B3 niacin	Milk, fish, eggs, meat, poultry, peanuts, and whole-grain cereals
Vitamin B6	White beans, maize, avocados, whole-grain cereals, seeds, eggs, leafy vegetables, bananas, legumes, meat, and fish
Folate	Liver, red meat, green leafy vegetables, fish, legumes, groundnuts, oilseeds, whole-grain cereals, egg yolks, and avocados
Vitamin B12	Red meat, fish, poultry, seafood, sardines, eggs, milk, and whole-grain cereals
Pantothenic acid	Foods of animal and vegetable origin
Biotin	Liver, kidney, soy flour, egg yolk, cereal, and yeast
Choline	Egg yolk, beef, peanut, and soybeans

Source: Adapted from Network of African People Living with HIV/AIDS (NAP+), 1996.

Session 8: Nutrition Care and Support of Adults Living with HIV



Purpose

To equip students with the knowledge and skills to provide dietary guidance and nutrition counseling and care to adults living with HIV

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Learning Objectives

- Describe the nutrient requirements of adult PLHIV.
- Demonstrate how to assess the nutritional status of adult PLHIV.
- Demonstrate how to provide nutrition counseling to adult PLHIV.
- Describe the use of locally available foods.
- Describe the nutritional needs of older people.

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Session Outline

- Goals and components of nutrition care and support of PLHIV
- Dietary guidance to meet the nutritional needs of PLHIV.
- Management of severe malnutrition in PLHIV
- Nutritional needs of older adults

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Nutrient Requirements of PLHIV

During the ***asymptomatic phase***:

- PLHIV energy requirements increase by 10% over those of healthy non-HIV-infected people of the same age, sex, and physical activity.
- Protein and micronutrient requirements remain the same.

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Nutrient Requirements of PLHIV

During the ***symptomatic phase***:

- PLHIV energy requirements increase by 20–30% over those of healthy non-HIV-infected people of the same age, sex, and physical activity.
- Protein and micronutrient requirements remain the same.

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Contact Points for Nutrition Care and Support of PLHIV

- Voluntary counseling and testing sites
- ART sites
- Health care facilities
- Home visits and community support groups

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Goals of Nutrition Care and Support of PLHIV

- Prevent malnutrition and wasting.
- Achieve or maintain body weight and strength.
- Enhance ability to fight opportunistic infections.
- Possibly delay disease progression.
- Promote effectiveness of drug treatment.
- Improve quality of life.

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Components of Nutrition Care and Support of PLHIV

- Nutrition assessment
- Nutrition counseling
- Micronutrient supplementation (if needed)
- Food provision (if needed)
- Food safety and hygiene
- Physical activity
- Psychosocial support
- Referral to other services

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Nutrition Assessment

- Anthropometric measurement (BMI, weight, weight changes)
- Biochemical information (lab data)
- Clinical information (appetite changes, nausea, vomiting, alcohol intake)
- Dietary information (24-hour recall, quality of diet)
- Food security status (food availability and access)

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Nutrition Counseling Focus

- Increase food intake
- Eat a variety of foods
- Manage symptoms and drug-food interactions

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Micronutrient Supplementation

- A varied diet is the best way to avoid micronutrient deficiencies
- Micronutrient supplementation should be at 1 RDA
- Clinical and dietary information determines the need for micronutrient supplements
- Biochemical tests (e.g., hemoglobin, serum retinol) should be done where available.

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Food Provision

- Malnutrition significantly increases mortality risk for PLHIV.
- Specialized food products can help PLHIV manage undernutrition.
- Service providers should follow national policy and protocols to determine whether PLHIV need food supplements.

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Food Safety and Hygiene Messages

- Drink only clean water brought to a rolling boil.
- Wash hands with soap.
- Thoroughly cook animal products.
- Wash all fruits and vegetables.
- Cover uneaten food.

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Physical Activity

- PLHIV should be encouraged to be as active as possible.
- Physical activity helps stimulate appetite, develop muscles, reduce stress, and maintain physical and mental health.

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Psychosocial Support

- Health service providers should give PLHIV psychosocial support and refer them to community groups where possible.
- Depression can decrease appetite.
- Nutrition assessment should collect information on the client's emotional state and how this affects diet.
- Questions about alcohol consumption may reveal a need for support and counseling.

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Referral to Other Services

- Food aid
- Livelihood strengthening
- Microfinance opportunities
- PLHIV support groups and associations

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Management of Severe Malnutrition in Adult PLHIV

- Malnutrition is often associated with other illnesses (e.g., infections, intestinal malabsorption, alcoholism, liver disease, HIV).
- Health service providers should follow 1999 WHO guidelines on managing severe malnutrition.

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Adult Nutrition Classification by BMI

BMI	Classification
< 16.0	Severely malnourished
16.0—16.99	Moderately malnourished
17.0—18.49	Mildly malnourished
18.5—24.9	Normal
25.0—29.9	Overweight
≥ 30.0	Obese

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Treatment of Severe Malnutrition in Adults

Initial phase (1–7 days)

- Treat life-threatening illnesses.
- Provide therapeutic food.
- Give a single dose (200,000 IU) of vitamin A if client is not pregnant.

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Therapeutic Foods

- Therapeutic food products such as F-75 and F-100 to treat and rehabilitate severely malnourished PLHIV in clinical settings
- Growing experience with ready-to-use therapeutic foods (RUTF) for PLHIV, especially for community-based approaches

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Nutrient Requirements of Older Adults

As people grow older, their nutritional needs change:

- Less energy
- More micronutrients

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Physical Factors That Affect Nutrition in Older Adults

- Reduced muscle mass and physical activity reduce the need for calories.
- Sensory changes reduce taste and smell.
- Tooth loss and gum disease make it difficult to eat some foods.
- Digestive problems reduce enzyme production and change intestine size.
- General health problems affect appetite and ability to prepare food.
- Drugs can cause dry mouth, nausea, abdominal pain, bloating, and taste changes.

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Conclusion

Proper nutrition care and support help strengthen the immune system, alleviate symptoms, reduce the severity of opportunistic infections, enhance the effectiveness of and adherence to medical treatment, and manage the negative effects of drug-food interactions on nutritional status and may slow disease progression for PLHIV.

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