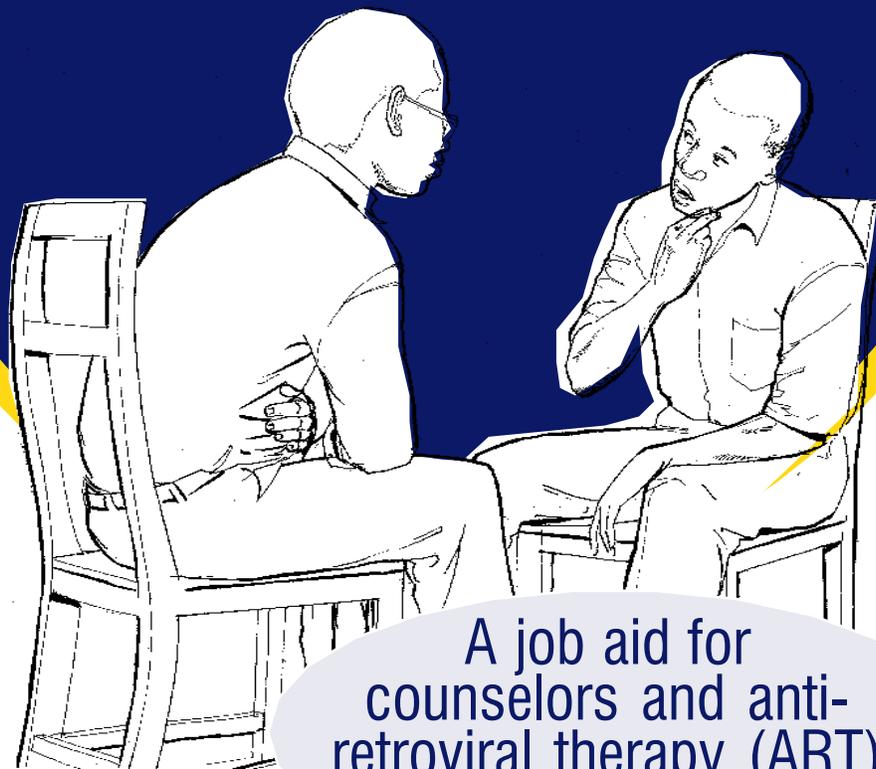


Food and Nutrition Counselling

for PLWHA on
Antiretroviral
Therapy



A job aid for
counselors and anti-
retroviral therapy (ART)
service providers

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Abbreviations and Acronyms

- AIDS** – Acquired Immuno-Deficiency Syndrome
- ARVs** – Anti-retroviral Drugs
- HIV** – Human Immune Virus
- OIs** – Opportunistic Infections
- ORS** – Oral rehydration Solution
- PLWHA** – Persons Living With HIV/AIDS
- WHO** – World Health Organisation



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Introduction

This job aid provides step-by-step information to help counselors and service providers to effectively counsel on nutrition and HIV for PLWHA on ARVs.

Using this job aid will enable counselors to help PLWHA on ARVs:

- a) Understand the food and nutrition implications of drug regimens.
- b) Identify appropriate and possible nutrition actions to:
 - Promote effective treatment,
 - Ensure adherence to drug regimens,
 - Manage side effects, and
 - Minimize negative effects on nutritional status.
- c) Implement the best nutrition actions and make necessary adjustments to dietary practices.



Booklet Use

Who should use this job aid?

Counselors, ARVs service providers and household caregivers.
The job aid can also be used by pharmacists.

When should this job aid be used?

It can be used:

- To prepare a client for ARV treatment,
- To counsel clients who are taking ARVs,
- During subsequent follow-up and home visits to ARV clients.

The job aid can also be used in training counselors and ARV service providers.

How should this job aid be used?

1. Review the entire job aid to get familiar with the contents.
2. Prior to the counselling session, carefully go through the section relevant to the client. Ensure references and other materials needed for the counselling session are available.
3. Use the job aid during the counselling session when the need arises.
4. Refer to the job aid to discuss drug-food interactions and appropriate responses.
5. For training purposes, provide copies of the job aid to trainees.



General Notes to the Job Aid User

- 1. Be drug-specific in recommendations** While some general principles apply to drug-food interactions, different drugs have different interactions with food and nutrition. Different interactions require different responses. All recommendations should be based on a clear understanding of the specific requirements of the drugs a client is taking.
- 2. Keep up-to-date** about drugs being used and their interactions with food, if any. Do not rely on a single static source of information, especially as new drugs and findings emerge. Incorporate the new information in your counselling messages and sessions.
- 3. Learn from your clients' experiences** about what works in easing side effects and ensuring drug effectiveness. However, keep in mind that different clients will have different reactions and preferences.
- 4. When a client changes to a new ARV combination**, provide information about possible food interactions, side effects and recommended responses. Support clients during the adjustment period. Help them identify options to meet any nutrition requirements.
- 5. In addition to supporting nutrition actions, refer clients to medical care whenever necessary.** For example, in cases of:
 - Severe or persistent side effects
 - Opportunistic infection.Medical care is also needed when a client fails to respond to a drug.
- 6. Be client-centered** during counselling sessions. Listen and take note of the clients concerns.



A good counselor is a good listener

SECTION 1

Preparation for ARV and Nutrition Counselling Session

Materials: Before counselling begins, make sure the following materials are available in the counselling room/area:

1. Chart on the nutritional implications of ARVs and other drugs commonly used by PLWHA (see Reference Chart 1).
2. Information on dose requirements for ARVs and other drugs used by PLWHA.
3. Chart on common ARV side effects and recommended nutritional management (see Reference Charts 1 and 2).

Understand the possible interactions between the specific ARVs and other drugs the client is taking and food and nutrients.

Use information provided by the client's doctor, drug information included with the medications, and available reference materials (e.g. Reference Charts 1 and 3 included in this booklet).

1. For each drug being taken, identify interactions with food and nutrition that may occur.
2. Identify any foods or dietary practices (including meal timing) that should be recommended given the client's ARV combination. Identify foods or dietary practices that should be reduced or stopped.
3. Identify side effects and drug interactions that may require nutritional management.
4. Consider non-ARV drugs the client is taking.
5. Identify any special effects caused by multiple drugs the client is taking.
6. Consider herbal or food-based supplements the client may be taking which may interact with drugs (e.g., garlic supplements and saquinavir).

SECTION 2

Counselling Clients about Food and Nutrition Implications of ARVs

Before or during initiation of ARVs

1. Explain the benefits of good nutrition for PLWHA who are on ARVs. Good nutrition:
 - a. Strengthens the body's ability to fight diseases, reduces opportunistic infections, and may slow progression of HIV to AIDS.
 - b. Complements ARVs' actions.
 - c. Helps improve the effectiveness of medication and side effect management.
2. Explain how HIV affects the nutrition of PLWHA.
 - a. HIV/AIDS increases the body's nutrition requirements.

- b. HIV/AIDS leads to opportunistic infections which are often associated with increased body nutrition requirements and food intake.
 - c. Symptoms of infections and side effects of drugs taken by PLWHA like ARVs may reduce food intake. Increased body nutrient requirements coupled with poor food intake will lead to a poor nutritional status.
3. Explain that there may be interactions between food and ARVs.
- a. ARVs may have side effects that can reduce food intake, absorption of nutrients and adherence to the drugs.
 - b. Some ARVs affect the availability, absorption and utilization of nutrients in the body.
 - c. Some foods when taken with ARVs may reduce drug effectiveness and worsen the side effects of ARVs.
 - d. Careful selection of food and well-planned meals can help minimize drug side effects and also improve adherence to, and effectiveness of, ARVs.
4. Ask the client if s/he knows the drugs s/he is taking. Explain that knowing the drugs helps:
- a. To ensure the client complies with the recommended timing and dosage. Drugs need to be taken as prescribed.
 - b. To identify possible food and drug interactions associated with each drug.
 - c. In making a daily routine for taking drugs and meals to maximize effectiveness of the drugs, ensure good nutrition, and minimize side-effects.
5. Explain the dietary recommendations for each of the drugs the client is taking. All drugs require the client to:
- a. Drink a lot of clean (boiled) water. Everyone should drink at least 8 glasses or 4 big cups each day.
 - b. Avoid taking alcohol.

Specific food recommendations for first-line ARVs are:

- **Zidovudine** is best taken on an empty stomach. For example, early in the morning, 30-60 minutes before the morning meal (breakfast), and in the evening, 30-60 minutes before the evening meal. If the client experiences stomach irritation, the drug can be taken with food, e.g., breakfast and/or dinner. But it should NOT be taken with a high fat meal. If taken with food, the client should limit the amount of fat/oil in the meal.
- **Nevirapine** does not have dietary restrictions. It can be taken with or without food. Clients taking it should avoid St. John's Wort, a yellow-flowered plant (Latin name of *Hypericum perforatum*) sometimes used as a remedy for depression.
- **Lamivudine** can be taken with or without food.
- **Efavirenz** can be taken with or without food. But it should NOT be taken with a high fat meal. If taken with food, the client should limit the amount of fat/oil in the meal.
- **Stavudine** can be taken with or without food.

Note: For drugs other than those above, refer to Reference Chart 1.

6. Emphasize the importance of using **clean and safe water** when taking medicines.

- a. HIV makes an individual more vulnerable to infections. Using clean and safe water is important to avoid water-borne infections.
- b. Some ARVs call for drinking plenty of water to avoid side effects. For example, when taking indinavir, one should drink at least 1500 ml. of water (6 glasses of water or 3 big cups of water) to avoid complications that may affect important body organs like the kidney.

7. Explain to clients that taking some drugs may lead to side effects that may affect food intake or nutrition. See Table 1 below and Reference Chart 1.

Table 1 Side effects of commonly used ARVs

If the client is taking:	S/he may experience side effects:
Zidovudine (ZDV)	Loss of appetite, anaemia, nausea, vomiting, fatigue, constipation, fever, headaches, changed taste, weight gain.
Nevirapine (NVP) Efavirenz (EFZ)	Nausea, vomiting, fever, weight loss. High blood fat levels, loss of appetite, nausea, vomiting, diarrhoea, flatulence, dizziness.
Lamivudine (3TC)	Nausea, vomiting, diarrhoea, anaemia, tiredness, abdominal pain, loss of appetite.
Stavudine (d4T)	Nausea, vomiting, diarrhoea, fever, loss of appetite, lipodystrophy, abdominal pain.

8. Explain to the client the importance of **telling a medical doctor about side effects**. These may be a sign of an opportunistic infection or other problems requiring medical treatment.
9. Inform the client that s/he may not experience any or all of the above side effects. Not everyone experiences these side effects. When one does experience side effects, they usually stop after about six weeks when the body gets used to the drugs.
10. Explain that most side effects of ARVs can reduce food intake and utilization by the body. This may weaken one's nutritional status.
11. Explain that some clients experience increased appetite, which can lead to weight gain. The weight gain may or may not be desired depending on the client's body weight.
12. Discuss simple dietary actions that can be taken to alleviate some common symptoms and side effects. See Table 2 below and Reference Chart 2.

Table 2 Nutritional management of common side effects

If the client experiences	Encourage him/her to:
Anorexia (Loss of appetite)	<ul style="list-style-type: none"> o Eat small and frequent meals (5 or more times a day). o Drink small sips of fluids. o Eat favourite foods. o Select foods that are rich in energy. o Avoid strong smelling foods if they negatively affect appetite.
Change or loss of taste	<ul style="list-style-type: none"> o Use flavour enhancers such as salt, spices, or lemon. o Chew food well and move it around in mouth to stimulate receptors. o Clean mouth every morning.
Constipation	<ul style="list-style-type: none"> o Eat foods high in fiber content such as whole cereals, fresh vegetables and fruits, beans. o Drink plenty of liquids. o Avoid processed or refined foods. o Exercise regularly.
Diarrhoea	<ul style="list-style-type: none"> o Drink plenty of fluids. o Continue eating during and after illness. o Prepare and drink rehydration solution regularly. o Avoid fried foods.
Fever	<ul style="list-style-type: none"> o Drink plenty of fluids. o Eat foods rich in energy and other nutrients: Groundnuts and simsim paste, millet/maize, porridge with soya and milk.
Flatulence (gas)	<ul style="list-style-type: none"> o Avoid gas-forming foods, like beans, cabbage, broccoli, and cauliflower.

Nausea or vomiting	<ul style="list-style-type: none"> o Eat small quantities of food at frequent intervals. o Drink after meals and limit intake of fluids with meals. o Avoid having an empty stomach. o Avoid lying down immediately after eating. o Eat small quantities of dry, lightly salty foods to calm the stomach. o Rest between meals.
Dry mouth	<ul style="list-style-type: none"> o Rinse mouth with clean warm salty water. o Avoid very hot foods, sweets, and drinks with a lot of caffeine like coffee, strong tea, and sodas.
Pale hands and fingernails (sign of anaemia)	<ul style="list-style-type: none"> o Eat foods like animal meats, dark green leafy vegetables like spinach and dodo. o Increase the intake of fruits like oranges and mangoes after meals. o Reduce the intake of tea and coffee immediately after meals. o Take iron supplements, tablets or other formulations with advice from your medical doctor. o Ensure you are treated for malaria and hookworms or other parasites.
Increased appetite (when weight gain is not desired)	<ul style="list-style-type: none"> o Eat a variety of foods and limit high fat, sugary, or sweetened foods.

13. Explain that not all symptoms experienced are due to ARVs or other drugs.
- a. Presence of some symptoms may be due to HIV infection or opportunistic infections. For example, diarrhoea may be caused by a bacterial infection. In this case nutritional management is the same, but medical care should be sought for the underlying infection immediately.
 - b. Dietary management of these symptoms is not meant to cure them; it only helps to reduce negative effects on nutritional status.
 - c. Inform the client that it is important that they inform their health provider about all symptoms. This will help in identification of other infections that may be contributing to the persistence of symptoms.

SECTION 3

Helping clients develop a drug-food timetable

Before or during initiation of ARVs

1. Review the client's existing dietary practices by considering the following:
 - a. Foods available to the client.
 - b. Types of foods in meals and how they are prepared.
 - c. Schedule of meals and snacks (schedule over a 24 hour period).
 - d. Food preferences and any foods avoided (and reasons, including allergies).
 - e. Persons responsible for deciding what the client eats and its preparation.
 - f. Any other issues or practices the client brings up.

2. Discuss and identify with the client how existing dietary practices can either be maintained or improved to help ensure good nutrition, comply with instructions for taking the drugs, and minimize side effects. Discuss how to manage drug interactions with various foods in terms of selection, preparation and timing of meals.

3. Inform the client of any foods that should be avoided and increased, based on the specific drugs the client is taking. Focus on local foods available to the client.

4. There are also some foods that should be avoided or taken in small quantities by all clients on ARVs:

Foods to be avoided or taken in small quantities when taking ARVs	Why?
o Alcohol	Reduces effectiveness of drugs and can cause dangerous side effects.
o Too much coffee/tea	Increases fluid loss and interferes with absorption of some nutrients.
o Undercooked meats and raw eggs	Can cause food borne illnesses.
o Expired tinned products o St Johns wort	Can cause food borne illnesses. Reduces the effectiveness of some drugs.
o If taking saquinavir, avoid garlic supplements or eating too much garlic	Reduces the effectiveness of saquinavir.

5. Discuss with the client what constraints s/he faces in accessing food or in following identified dietary practices for the ARVs s/he is taking. Consider constraints such as:

- Income.
 - Seasonal variations.
 - Food allocation within the home, decision-making about food choices and preparation.
 - Reduced capacity to eat due to infection symptoms.
 - Reduced capacity to prepare food due to infection symptoms.
 - Knowledge about nutritional needs (adequate and right meals).
 - Psychosocial factors (e.g. depression or anxiety).
 - Food related traditional practices and taboos.
 - Stigma-related constraints.
 - Constraints due to conflict, war, domestic violence or other environmental factors.
 - Other constraints raised by the client.
6. Help the client to identify options to improve access to needed foods and identify dietary practices that are possible and meet the nutritional needs caused by the ARVs he/she taking.
- a. Discuss with the client possible ways to address the constraints identified above.
 - b. Seek alternative foods and behavior changes that are possible and practical at individual or household level to meet food intake requirements of ARV combination.
 - c. Inform the client of services that can support improved diet and nutrition. When possible, provide referrals.

Depending on the client's situation, link him/her to support services like food aid programs, income generating programs, services to strengthen livelihoods, nutrition assessments, PLWHA support services, and counselling and peer support groups.

7. Identify and discuss with the client the need to change eating patterns to promote effectiveness of ARVs.
 - a. Increased frequency (like having snacks in between meals)
 - b. Timing of the meals in relation to taking of the drugs (including when to take beverages like tea and coffee)
 - c. Food preparation (like limiting the amount of fat/oils)

8. Help the client to make a drug-food timetable.
 - a. Develop a daily meal and drug plan together. It should specify what drugs and types of foods to take at what time of the day. (The “meal planner” tool can be used for this process.)
 - b. Discuss with the client how to maintain and follow the timetable.
 - c. If possible, encourage the client to identify within the family a source of support who can be involved in developing the drug-food timetable and in following the timetable at home.

9. Allow time to discuss any questions, concerns or issues the client may raise.

SECTION 4

Helping clients follow dietary recommendations and the drug-food timetable

During follow-up sessions (once the client is on ARVs)

1. Assess how the client is following recommendations for drug and food intake and nutritional practices.
 - a. Ask the client to explain the timing of food and drug intake. Assess whether the client is following the drug-food timetable? Support as appropriate.
 - b. Review drug-food interactions and recommended actions that are needed.
 - c. Let the client discuss any problems experienced or other issues of concern.
 - d. Remember that reactions to drugs, needs and preferences will differ from client to client.

2. Let the client explain any dietary responses that are proving impossible to follow.
 - a. Consider economic, seasonal or social changes that have occurred since ARVs were started that may require different foods to be used.
 - b. As needed, together with the client identify alternative food options for any recommendations s/he is unable to follow.

3. Ask about any symptoms or side effects experienced, actions taken, and their effect.
 - a. Ask the client what dietary actions s/he took to manage the side effect. As needed, review and recommend dietary actions, using Table 1 and Reference Charts 1 and 2.
 - b. Assess whether the symptoms in any way contributed to failure to follow instructions for taking drugs.
 - c. Ask whether the client sought medical care for any side effects. If not, and if the side effects are still present, recommend the client seek medical care.

4. Assess whether any symptoms or reactions may be due to opportunistic infections rather than a drug side effect (e.g. persistent diarrhoea).
 - a. If so, refer client for medical assessment and treatment.
 - b. Recommend that the client continues with nutritional management of the symptom, in addition to the medical treatment.

5. Emphasise the importance of correctly following instructions for taking drugs and accompanying dietary practices. Even if the client is feeling much healthier, continuing the treatment regimen is important.

6. Allow time to discuss any questions, concerns or issues the client may raise.

SECTION 5

Helping clients maintain a healthy weight

Before or during initiation of ARVs or during follow-up sessions

1. Weigh the client
 - a. Compare current weight to previous weight.
 - b. For clients who are underweight, experiencing unintended weight loss, or who want to increase their weight, refer to nos. 2 - 8 below.
 - c. For clients who are overweight and clients who are experiencing unintended and undesired weight gain, refer to no. 9 below.

2. If the client is experiencing unintended weight loss or is not increasing weight, ask the client to describe his/her daily food intake.
 - a. Assess whether energy intake is adequate. Try to get a sense of the adequacy of the client's intake. Consider whether the client is eating a sufficient quantity of energy giving foods. General indicators that a client is getting sufficient amounts of food are:
 - i. Eating at least 3 meals a day.
 - ii. Eating meals that contain a variety of foods. These include energy giving foods, body building foods, protective foods (fruits and vegetables) and lots of water and juices. (Refer to "Answers to Frequently Asked Questions" for examples of food types.)
 - iii. Eating snacks in between meals, especially those that are high in energy like porridge or bananas.
 - iv. Increasing intake of energy, either by increasing quantities of food taken during meals or by increasing the frequency of meals and snacks. Determine this by comparing current and previous intakes in terms of quantity and frequency.
 - b. Asymptomatic PLWHA require **10%** more energy than the recommended daily allowance for HIV-negative individuals of the same age, sex, and physical activity level. Symptomatic clients require **20-30%** more energy than the recommended daily allowance for HIV-negative individuals of the same age, sex, and physical activity level.

3. If intake of energy giving foods is estimated to be inadequate, assess the reason(s):
 - a. If due to drug-related side effects (such as nausea and loss of appetite) discuss with the client whether dietary management can help. Counsel (refer to Table 2 and Chart 2). If needed, modify the food-drug timetable to enable increased intake.

- b. If dietary management of side effects is not effective and side effects continue, refer the client to a medical doctor. The doctor may prescribe appetite stimulants for appetite loss; anti-emetics (to prevent vomiting) for nausea or vomiting; or anti-diarrhoea medications.
 - c. If drug-related side effects are not the issue and food is available in the household, but dietary intake is inadequate, then counsel the client on increased energy intake.
 - i. Increase the amount of food consumed.
 - ii. Increase the frequency of meals and snacks.
 - iii. Increase intake of energy giving foods.
 - iv. This may require helping the client identify appealing, available and affordable foods.
 - v. If needed, modify the food-drug timetable to enable increased intake.
 - d. If the client lacks access to sufficient food, help him/her identify options to increase access to food (see nos. 5 and 6 in Section 3). It may be necessary to link the client to programs providing supplements, food assistance, or other goods and services if possible.
4. If dietary intake is adequate and the client has correctly followed instructions and complied with the drug schedule but weight is still low, assess the possibility of opportunistic infections or other illnesses that may be affecting nutrient absorption or utilization. If OIs or other illnesses are:
- a. Present, then counsel on dietary management (as in Reference Chart 2) and refer to a medical doctor.
 - b. Not present, and the reason for weight loss is not known, refer the client to a medical doctor for assessment.
5. If dietary intake is estimated to be adequate and OIs and side effects that affect nutrient absorption are not present, it is possible the weight loss is the result of metabolic changes or other problems. In this case, refer the client to a medical doctor.

Remember to provide the client with information about maintaining adequate food intake.

6. Counsel clients to do moderate physical exercise (three to four times a week) when possible. This is useful for building muscles. If the client experiences difficulties exercising, refer him /her to a physiotherapist if available.
7. If improved diet as a result of counselling fails to increase weight, refer the client to a medical doctor for further assessments.
8. If the client is severely malnourished, urgently refer to a hospital or an appropriate nutritional rehabilitation institution. WHO guidelines should be followed to screen clients for severe malnutrition if personnel trained in the screening are available. In a hospital or nutritional rehabilitation institution, the national guidelines, *Management of Severe Malnutrition in Uganda*, should be followed to manage the malnutrition.
9. For **overweight** clients and those experiencing unintended and undesired weight gain:
 - a. Ask the client about his/her daily food intake. If intake of fat and/or energy is higher than recommended, help the client to identify ways to reduce consumption of high-fat and high-energy foods, especially those not rich in other nutrients.
 - b. Encourage the client to eat a variety of foods.
 - c. Encourage the client to continue with physical activity such as house work or other work, and to exercise regularly through recreational activities or walking.
 - d. If weight increase may be due to metabolic changes fully or partly, (e.g. if weight has increased rapidly despite little change in dietary intake), refer the client to a medical doctor for assessment and treatment.
10. Allow time to discuss any questions, concerns or issues the client may raise.

SECTION 6

Helping clients maintain healthy body composition

During follow-up sessions (once the client is on ARVs)

1. As needed, refer the client to medical services to test for unhealthy impacts of ARVs on nutrient levels and body composition.
 - a. If taking **zidovudine** or **lamivudine**, refer for an anemia test.
 - b. Clients taking **efavirenz** or other protease inhibitors may require testing for blood fat levels (cholesterol and triglycerides).
 - c. Clients on **stavudine** or **zidovudine** may require tests for bone health.
 - d. For clients on other ARVs, use Reference Chart 1 and the

doctor's advice to identify possible negative impacts that require testing.

2. If the client is experiencing nutrient metabolism issues like high blood fat levels and anaemia, discuss nutritional responses in addition to any medical responses needed.
3. If the client has anaemia, assess whether **the anaemia** is associated with inadequate intake of foods rich in iron (or high intake of iron binding foods).
 - a. If an iron-deficient diet is a likely cause of anaemia:
 - i. Recommend the client take iron supplements (not more than 60 mg elemental iron per day for adults) and folic acid (400 μ g per day).
 - ii. Advise the client to eat foods rich in iron like meat (including fish and chicken), dark leafy vegetables (including spinach, dodo, nakati), and fruits rich in vitamin C like mangoes, oranges.
 - b. If the diet is adequate in iron, refer the client to a medical doctor for assessment. Certain ARVs can cause anaemia through mechanisms other than poor nutrient utilization or nutrient deficiencies.
4. If the client has **high blood fat levels**:
 - a. Assess dietary fat intake:
 - i. Assess whether the client is having adequate energy intake.
 - ii. If the client has adequate energy intake and can access adequate energy intake from non-fat sources, counsel the client to limit consumption of foods rich in saturated fats, like butter, ghee, egg yolks.
 - iii. If dietary counseling does not reduce the blood fat levels, refer for medical care. The client may require drug therapy or possibly a change in ARV regimen.
 - b. Counsel the client on exercises that she/he can undertake, based on his/her health status and environment.

5. If the client is experiencing changes in body shape, e.g. loss of fat in any body part other than the stomach, increased breast size, “buffalo humps” (distribution of fat between the shoulders):
 - a. Counsel the client that there may not be an effective cure for the condition.
 - b. Refer the client to a medical doctor.
 - c. Encourage the client to do exercises.

6. Allow time to discuss any questions, concerns or issues the client may raise.

SECTION 7

Counselling clients during home visits

Before or during initiation of ARVs or during follow-up sessions

1. Follow actions according to the type of session planned for the visit (from Section 1-6 above).
2. Explain to household members the importance of good nutrition and the client's specific food and nutrition needs. Discuss with them the types of foods that will help the client maintain his/her health and promote effective treatment.
3. Assess conditions in the household that affect diet and drug adherence:
 - a. Hygiene conditions.
 - b. Food production.
 - c. Income sources and levels.

- d. Knowledge of household members.
 - e. Food preparation and storage.
 - f. Who makes decisions about food and who prepares food.
 - g. Stigma issues.
 - h. Psycho-social issues.
 - i. Food allocation within the home.
4. If there are conditions that prevent clients from following drug and food recommendations, discuss with the client and household members to identify options to address these conditions. For example:
- a. If hygiene conditions are poor, suggest ways to improve cleanliness of food preparation, safety of water, and the personal hygiene of client and of those preparing food.
 - b. In case of limited access to needed foods, discuss kitchen gardens or other sources of additional food production.
 - c. If poor income is preventing the household from accessing sufficient food, refer if possible to available income generating and food assistance services.
 - d. If stigma within the household is affecting the client's food allocation or appetite, provide counselling to reduce stigma. Emphasize the role household members can play in supporting the client. Suggest that eating with other household members may help increase the client's appetite.
5. Through discussion with client and household members, identify possible options to improve the content of the client's diet for management of drug-food interactions if needed.
- a. Share information with household members about the client's food and drug intake requirements.
 - b. Discuss options such as:
 - i. Adjusting meal timings to coordinate with the client's drug timings and to allow more frequent meals by the client.
 - ii. Changing food preparation as needed to create more

- desired or digestible meals for the client.
- iii. Adjusting the types of foods purchased with the money allocated for food in order to meet nutritional requirements of the client.
6. Seek input from household members about ways to ensure that the client correctly follows drug and dietary recommendations.
 - a. Other household members can play important roles in supporting the client.
 - b. For example, a household member (including an older child) can take responsibility for seeing that the client correctly follows instructions for taking drugs and recommended food intake.
 7. Allow time to discuss any questions, concerns or issues the client or other household members may raise.

Reference Materials:

- | | |
|--------------------|-------------------------------------------------------------------------|
| Reference Chart 1: | Recommended Food Intake and Side Effects for ARVs and other Medications |
| Reference Chart 2: | Nutritional Management of Common ARV Side Effects |
| Reference 3: | Interactions between Medications and Food/Nutrition |
| Reference 4: | Glossary |

Reference Chart 1: Recommended Food Intake and Side Effects for ARVs and other Medications

Medication	Purpose	Recommended to be taken	Possible side effects
Abacavir (ABC)	Antiretroviral	Can be taken without regard to food.	Nausea, vomiting, fever, allergic reaction, anorexia, abdominal pain, diarrhoea, anaemia, rash, hypertension, pancreatitis, dyspnea, weakness, insomnia, cough, and headache.
Didanosine(ddl)	Antiretroviral	With water only, 1 hour before or 2 hours after eating. Avoid alcohol. Do not take with juice. Do not take with antacid containing aluminum or magnesium.	Anorexia, diarrhoea, nausea, vomiting, pain, headache, weakness, insomnia, rash, dry mouth, taste loss, constipation, stomatitis, anaemia, fever, dizziness, and pancreatitis.
Efavirenz	Antiretroviral	Can be taken with food, but do not take with a high fat meal. Avoid alcohol.	Elevated blood cholesterol levels, elevated triglycerides levels, nausea, dizziness, anorexia, rash, vomiting, diarrhoea, dyspepsia, abdominal pain, flatulence.
Indinavir (IDV)	Antiretroviral	1 hour before or 2 hours after meal. Drink at least 1,500 ml of fluid daily. Do not drink grapefruit juice, it may lower the level of medicine in the blood. Avoid St. John's wort.	Nausea, abdominal pain, headache, kidney stones, taste changes, vomiting, regurgitation, diarrhoea, insomnia, ascites, weakness and dizziness. May increase the risk of lipodystrophy.

Medication	Purpose	Recommended to be taken	Possible side effects
Lamivudine (3TC)	Antiretroviral	Can be taken without regard to food. Avoid alcohol.	Nausea, vomiting, headache, dizziness, diarrhoea, abdominal pain, nasal symptoms, fatigue, pancreatitis, anaemia, insomnia, muscle pain, cough and rash.
Lopinavir	Antiretroviral	Can be taken without regard to food. Avoid St John's wort.	Abdominal pain, diarrhoea, headaches, weakness, nausea. May increase the risk of lipodystrophy and or diabetes.
Nelfinavir	Antiretroviral	With meal or light snack. Avoid St John's wort.	Diarrhoea, flatulence, nausea, abdominal pain, and rash. May increase the risk of lipodystrophy.
Nevirapine(NVP)	Antiretroviral	Can be taken without regard to food. Avoid St John's wort.	Nausea, vomiting, rash, fever, headache, skin reactions, fatigue, stomatitis, abdominal pain, drowsiness, paresthesia. High hepatotoxicity.
Ritonavir	Antiretroviral	With meal if possible. Avoid St John's wort.	Nausea, vomiting, diarrhoea, hepatitis, jaundice, weakness, anorexia, abdominal pain, fever, diabetes, headache, dizziness. May increase the risk of lipodystrophy.
Saquinavir	Antiretroviral	With meal or light snack within 2 hours of a high-fat meal and high-calcium meal. Avoid garlic supplements and St John's wort.	Mouth ulceration, taste changes, nausea, vomiting, abdominal pain, diarrhoea, constipation, flatulence, weakness, rash and headache. May increase the risk of lipodystrophy.

Medication	Purpose	Recommended to be taken	Possible side effects
Stavudine(d4T)	Antiretroviral	Can be taken without regard to food. Limit the consumption of alcohol.	Nausea, vomiting, diarrhoea, peripheral neuropathy, chills and fever, anorexia, stomatitis, anaemia, headaches, rash, bone marrow suppression, pancreatitis. May increase the risk lipodystrophy.
Tenefovir (TDF)	Antiretroviral	Take with food.	Abdominal pain, headache, fatigue and dizziness.
Zidovudine (ZDV)	Antiretroviral	Better to take without food, but if it causes nausea or stomach irritation, take with a low fat meal. Do not take with a high fat meal. Avoid alcohol.	Anorexia, anaemia, nausea, vomiting, bone marrow suppression, headache, fatigue, constipation, fever, dizziness, dyspnea, insomnia, muscle pain and rash.
Isoniazid	Treatment of tuberculosis	1 hour before or 2 hours after meals. May cause possible reactions with foods such as bananas, beer, avocados, liver, smoked pickled fish, yeast and yogurt. May interfere with vitamin B6 metabolism and require vitamin B6 supplementation. Avoid alcohol.	Anorexia and diarrhoea.
Rifampin	Treatment of tuberculosis	On an empty stomach 1 hour before or 2 hours after meals. Avoid alcohol.	Nausea, vomiting, and loss of appetite. diarrhoea

Medication	Purpose	Recommended to be taken	Possible side effects
Fluconazole	Treatment of candida (thrush)	With food.	Nausea, vomiting, diarrhoea. Can be used during breastfeeding.
Nystatin	Treatment of thrush	With food.	Infrequent occurrence of diarrhoea, vomiting, nausea.
Sulfonamides: Sulfamethoxazole, Cotrimoxazole (Bactrim, Septra)	Antibiotic for treatment of pneumonia and toxoplasmosis	With food	Nausea, vomiting and abdominal pain.
Chloroquine	Treatment of malaria	With food	Stomach pain, loss of appetite, nausea, vomiting. Not recommended for breastfeeding women.
Quinine	Treatment of malaria	With food	Abdominal or stomach pain, diarrhoea, nausea, vomiting, lower blood sugar.
Sulfadoxine and Pyrimethamine (Fansidar)	Treatment of malaria	With food and continuous drinking of clean boiled water	Nausea, vomiting, taste loss, and diarrhoea. Not recommended if folate deficient. Not recommended for women breastfeeding.

Source: Adapted from FANTA 2001, Pronsky et al. 2001, Nerad 2003, Castleman et al. 2003, and WHO 2003.

Reference Chart 2: Nutritional Management of Common ARV Side Effects

Side Effect	Recommended Nutritional Management	Avoid
Anorexia	<ul style="list-style-type: none"> o Eat small and frequent meals. o Eat favourite foods. o Select foods that are rich in energy. o Take multivitamins. 	<ul style="list-style-type: none"> o Avoid strong smelling foods.
Nausea or vomiting	<ul style="list-style-type: none"> o Eat small quantities of food at frequent intervals. o Drink after meals and limit intake of fluids with meals. o Limit salt intake and eat dry foods to calm the stomach. o Sip oral rehydration solution (ORS) if vomiting. o Rest between meals. 	<ul style="list-style-type: none"> o Avoid having an empty stomach for too long. o Avoid lying down after eating.
Change or loss of taste	<ul style="list-style-type: none"> o Use flavour enhancers such as salt, spices or lemon. o Chew food well and move around in mouth to stimulate receptors. 	
Constipation	<ul style="list-style-type: none"> o Eat foods high in fiber content. o Drink plenty of fluids. o Exercise regularly according to capacity. 	<ul style="list-style-type: none"> o Avoid processed or refined foods.
Diarrhoea	<ul style="list-style-type: none"> o Drink plenty of fluids (clean boiled water). o Continue eating during and after illness. o Prepare and drink ORS regularly. o Eat banana or potatoes to replace potassium and sodium. o Take soluble fibre foods (like oranges, mangoes, oats, and legumes). o If diarrhoea is severe check for lactose intolerance. Decrease intake of dairy products and see if diarrhoea improves. Lactose intolerance is often temporary. o Seek medical care if there is blood in the diarrhoea. 	<ul style="list-style-type: none"> o Avoid fried foods. o Avoid alcohol. o Reduce the amount of dietary fat if taking nelfinavir).
Fever	<ul style="list-style-type: none"> o Drink plenty of fluids. o Eat energy and nutrient dense foods. o Eat small, frequent meals. 	

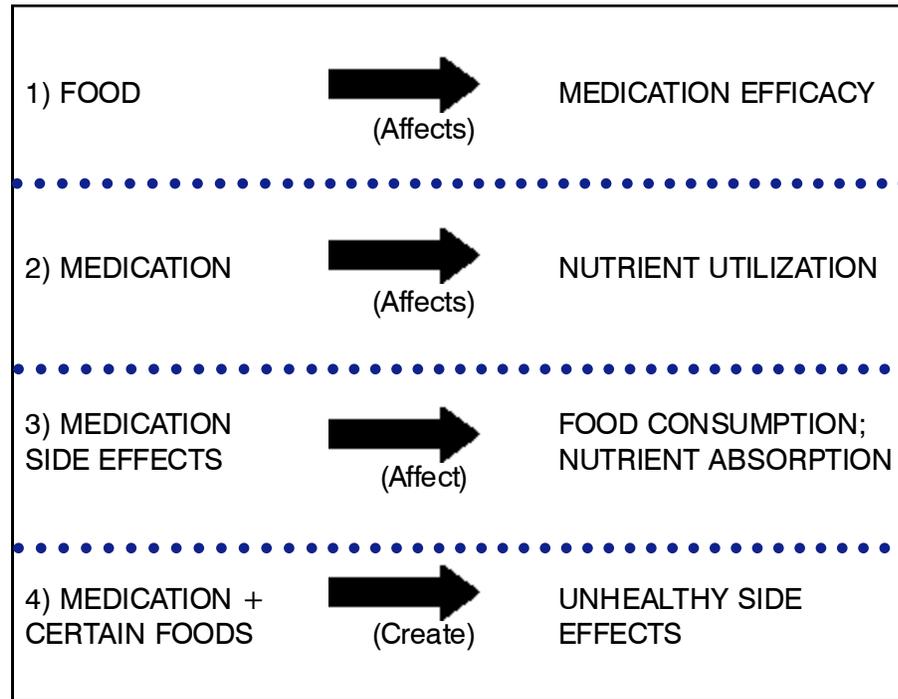
Side Effect	Recommended Nutritional Management	Avoid
Flatulence		o Gas-forming foods, such as beans, cabbage, broccoli, and cauliflower.
Dry mouth	o Rinse mouth with clean water (warm with a pinch of salt). o Maintain good oral hygiene. o See a health worker if you have problems swallowing or have spots in the mouth.	o Very hot foods, sweets, drinks with a lot of caffeine, like coffee and tea, and some sodas.
Anaemia (pale/white palm or finger nails)	o Eat foods rich in iron like animal meat (especially liver), fish, chicken, and kalo, spinach, dodo (amaranths leaves), and lima beans. o Increase the intake of fruits like oranges, mangoes after meals. o Take iron supplements.	o Taking tea and coffee immediately after meals.
High Blood Cholesterol	o Eat a low fat diet. o Eat fruits like oranges, mangoes, pawpaw, and vegetables like nakati, dodo, sukuma wiki, spinach, daily. o Exercise regularly according to capacity.	o Limit intake of foods rich in cholesterol (like egg yolks, red meat) and saturated fat (ghee, fatty meat/muchomo, potato chips, cheese, chocolate) and saturated fats and processed "hard" fats.
High Triglycerides	o Eat fruits, vegetables, and whole grains daily. o Avoid alcohol and smoking. o Exercise regularly according to capacity.	o Limit sweets and excessive carbohydrate and saturated fat intake.

Sources: 1) Castleman, T, E. Seumo-Fosso, and B. Cogill. Food and Nutrition Implications of Antiretroviral Therapy in Resource Limited Settings. Washington D.C.: FANTA Project, Academy for Educational Development, 2003.

- 2) HIV/AIDS: A Guide for Nutrition, Care and Support. FANTA, Academy for Educational Development, 2001.
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- 4) Pronsky, Z., S.A. Meyer, and C. Fields-Gardner. HIV Medications Food Interactions. 2001.
- 5) American Dietetic Association. Manual of Clinical Dietetics. Chicago, 2000.

Reference 3:

Interactions between Medications and Food/Nutrition



Source: Castleman, T, E. Seumo-Fosso, and B. Cogill. Food and Nutrition Implications of Antiretroviral Therapy in Resource Limited Settings. Washington D.C.: FANTA Project, Academy for Educational Development, 2003.

Reference 4: Glossary

Absorption of food - Body process of taking in food through intestines

Antiretroviral drugs - Drugs that reduce the multiplication of HIV in the body.

Anorexia – An illness that results in loss of desire to eat hence weight loss

Asymptomatic – Without signs

Bacterial infection – Infection from germs

Dietary - Anything that relates to diet or food consumed

First line antiretroviral drugs - First recommended combination of ARV drugs for PLWHA.

Medication efficacy - The ability of a drug to carry out its function, i.e. to control or cure an illness.

Metabolism - Chemical processes that change food into living matter to produce energy

Non-adherence - Terminating consumption of the medication before completing the full course; or failure to follow medication schedules, doses, or other directions.

Nutrition - The process involved in taking in food and utilising it in the body.

Opportunistic infection - Infections that affect people living with HIV due to a weakened body immunity

Side effects – After effects of taking a drug

Symptomatic – With signs

Psychosocial - Related to mental well-being



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