

Nutritional Care for People Living with HIV/AIDS

Answers to
frequently asked
questions



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Abbreviations and acronyms

AIDS – Acquired Immuno-Deficiency Syndrome

ARVs – Anti-retroviral Drugs

HIV – Human Immune Virus

OIs – Opportunistic Infections

PLWHA – Persons Living With HIV/AIDS

WHO – World Health Organisation



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Introduction

People living with HIV/AIDS (PLWHA) need correct information about food and nutrition.

Providing PLWHA with this information will help them make the best food and nutrition choices for proper HIV/AIDS management and improved quality of life.

This booklet has answers to commonly asked questions by PLWHA and caregivers. The questions are grouped into five sections:

Section 1: The link between nutrition and HIV/AIDS

Section 2: Dietary intake and food access by PLWHA

Section 3: ARVs and nutrition

Section 4: Traditional herb therapy

Section 5: Maintaining body composition



Booklet Use

Who should use this booklet?

Counselors, health workers, trainers, and PLWHA, their families, and other care-givers. Even people without HIV/AIDS will find this booklet useful.

When should this booklet be used?

The booklet can be used during counselling sessions with PLWHA, or during education at different fora with PLWHA. Trainers can use it to respond to questions during training sessions.

The link between nutrition and HIV/AIDS

1. What is a good nutritional status?

A good nutritional status is when the body has enough and right kinds of food to meet its requirements for proper functioning, growth, repair and maintenance of health.

How does HIV/AIDS affect the nutritional status of PLWHA?

PLWHA are vulnerable to poor nutritional status because their body's food requirements are increased yet they have poor food intake.

HIV worsens the nutritional status of a PLWHA. This is because:

- HIV/AIDS increases the body's requirement for food.
- HIV/AIDS leads to opportunistic infections, which are often associated with increased body nutrition requirements and poor food intake.
- Drugs taken by PLWHA like Antiretrovirals (ARVs) are associated with side effects that may reduce food intake. Increased body nutrition requirements coupled with poor food intake will lead to a poor nutritional status.

2. Why is good nutrition important for PLWHA?

Good nutrition is important for the well being of a PLWHA because it:

- Strengthens the body's protection and recovery from diseases, especially in the early stages of infection. This helps to delay progression of HIV infection to AIDS.
- Promotes adequate storage and availability of the required nutrients. This is because HIV/AIDS and opportunistic infections increase the body's needs for nutrients.
- Helps maintain body weight and muscle thickness. These are important for maintaining the strength and independence of PLWHA.
- May make taking of medicines bearable and help the medicines work better.

PLWHA should maintain a good nutritional status. They can do this by:

- Eating a balanced diet. The diet should contain a variety of foods including energy giving foods (cereals, tubers, roots, sweet fruits, fats and oils), body building foods (legumes, meat, milk, eggs, seeds), protective foods (fruits and vegetables); and plenty of fluids.

- Exercising of muscles.
- Good food hygiene practices to prevent infections.
- Taking ARVs if prescribed by a doctor. These drugs reduce viral load. This boosts the immune system and reduces the frequency of opportunistic infections, thereby strengthening nutritional status.

3. In the absence of ARVs can good nutrition be sufficient for quality life of PLWHA?

Though good nutrition can help maintain and improve the quality of life of PLWHA, it is not sufficient on its own. Food helps boost and maintain immunity. However, when the viral load in the body is high, nutrition alone cannot fully replace the lost immunity. Prevention and proper treatment of HIV related infections is important to avoid weakening the nutritional status further. ARVs are vital because they reduce the viral load and the rate at which the body's immunity is destroyed.

To benefit from good nutrition, PLWHA have to:

- Regularly monitor their weight. If there is any unintended weight loss over a period of a month, they should seek help from a health worker.
- Eat a large enough quantity of food and include a variety of foods in their meals.
- Promptly seek health care for any other diseases.
- Adopt good personal, food, and water hygiene to prevent infections that can be transmitted through food/water.
- Practice a positive life style to maintain physical and emotional health. (e.g. avoid alcohol and smoking, exercise frequently, and seek psychosocial counselling if required).

Dietary intake and food access by PLWHA

1. What are the best foods for PLWHA?

PLWHA need food from all food types. The food types include energy giving foods, body building foods and protective foods.

- HIV increases the energy needs of PLWHA. Therefore PLWHA need to eat foods from all food types in higher quantities and/or more frequently.
- PLWHA are advised to reduce the intake of refined sugars like cane sugar, sweetened juices and foods. It is also advisable to limit fats, oils, coffee, tea and sodas. PLWHA should avoid alcohol, smoking, raw eggs, raw fish and partially cooked foods.

Food groups	Examples of food types	Special preparation considerations
Energy giving foods (<i>Cereals, roots, bananas and tubers</i>) (<i>Fats, oils and sugars-in small quantities</i>)	Matooke, cassava, irish potatoes, maize, sweet potatoes, yams, chappati, posho, rice, bread, millets. Ghee, cooking oil, cooking fat, butter, (siagi), margarine, sugar, honey.	Avoid deep frying.
Body building foods (<i>Legumes and foods of animal origin</i>)	Beef, goat, milk, pork, chicken, fish, liver, kidney, beans, peas, yoghurt, simsims, groundnuts, soya beans, <i>odii, mukene, nswa, nsenene</i> .	<ul style="list-style-type: none"> • Cook all animal products until well cooked. • Do not eat raw eggs.
Protective foods (<i>Vegetables</i>)	<i>Nakati, dodo, jobyo</i> , carrots, <i>ntula</i> , tomatoes, <i>bbuga, ngobe</i> , cabbage, sukuma wiki, pumpkin, pumpkin leaves, spinach, tomato.	<ul style="list-style-type: none"> • Avoid cutting vegetables before washing them. • Avoid cutting vegetables into very small pieces. • Cook immediately. • Cook for a short time. • Avoid adding a lot of water. • Eat immediately after cooking.
Protective foods (<i>fruits</i>)	Banana, pawpaw, <i>matugunda</i> , water melon, mango, guava, passion fruit, pineapple, <i>ntutunu</i> , orange, jambula, tangerine (mangada), apple, jackfruit, tomato, avocado.	<ul style="list-style-type: none"> • Wash properly before eating. • Do not eat rotten fruits.
Beverages	Fruit juice, water, tea. Alcohol should be avoided.	<ul style="list-style-type: none"> • Boil drinking water and water for making fruit juice • Keep drinking water in a clean covered container.

REMEMBER: No single food can meet all the nutritional requirements of an individual, except breast milk for a baby during the first six months. Therefore it is important to eat adequate and different types of foods in a meal.

2. Why are some PLWHA advised not to take red meat?

Red meat includes beef, goat meat, mutton, and game meat.

Although red meat has many nutrients which are important for the body, there are different reasons why some PLWHA may be advised not to eat it:

- i. Red meats have high fat levels, and eating it may increase the level of fat in the blood. This increases the risk of heart disease, liver complications and high blood pressure and may be of particular concern if one is on ARVs. If a PLWHA has high blood fat levels, s/he needs to trim fat off meat and avoid fatty red meat.
- ii. Some people have problems digesting red meat, especially if taken in large amounts. So they may be advised to reduce the intake of red meat.

Meat digestion can be improved by:

- i. Adequately chewing the meat or using minced meat if available.
- ii. Pounding meat until soft before cooking, especially where minced meat is not available.
- iii. Using spices in marinating and cooking meat. Spices such as raw pawpaw, lemon, ginger and garlic can help to soften the meat.
- iv. Eating meat together with pawpaw.

It is recommended that red meat be limited and replaced with white meat. White meat includes fish, skinless poultry, pork and edible insects.

3. Is it appropriate for PLWHA to be vegetarians?

It is appropriate for PLWHA to be vegetarian if:

- They eat all food types required by the body (i.e. energy giving, protective and body building foods). This can be achieved by eating a combination of different plant foods and dairy products.
- It is important to eat adequate amounts of body building foods. Soya foods, legumes and dairy products are a good source of body building foods.

4. What is the difference between an egg from a local chicken and that from an exotic chicken?

From the nutritional point of view they are the same.

- The nutrients from both eggs, like vitamin A, iron and protein are the same.
- It is therefore advisable to eat any egg that is available.

5. Is it true that eating raw eggs is good for PLWHA?

No, it is not true. It is not advisable for PLWHA to eat raw eggs.

- A raw egg may contain dangerous organisms (e.g. salmonella or a bacteria that cause infections leading to abdominal pain, nausea and diarrhoea).

To avoid this, the following is recommended:

- Prepare an egg until there is no slippery liquid.
- If you are making hard boiled eggs, boil for 10 minutes more after the water has started boiling.

- Wash utensils used for whipping raw eggs with water and soap before using them again.
- Do not buy or use cracked eggs for food. Cracked eggs provide breeding ground for bacteria that may cause diseases.

REMEMBER: PLWHA's bodies have weakened body ability to fight diseases. It is important to avoid anything that may increase the risk of infection.

6. Which milk is better for PLWHA?

Fermented, yoghurt/sour or fresh milk?

All types of milk have important nutrients. One can use any type depending on what is available and preferred.

Fermented milk/yoghurt is beneficial because:

- It is easily digested. It helps in the digestion and absorption of other foods.
- It may inhibit the growth of oral thrush, which is common among PLWHA.

Some people have an intolerance for fresh milk. They may get diarrhoea, bloating of the stomach, or stomach ache. They are advised to take fermented milk. PLWHA who cannot take either fresh or fermented milk should try other body building foods. If a PLWHA has diarrhoea, she may need to avoid taking certain drugs with milk or to stop drinking fresh milk until the diarrhoea stops.

7. Which juice is recommended for PLWHA?

- Fresh fruit or vegetable juices are good for PLWHA.
- They have enzymes that assist in the digestive process.

This conserves vital body energy. One does not feel weighed down after drinking juices.

- Fruit or vegetable juices should be freshly and hygienically prepared using clean boiled water.

PLWHA should avoid taking:

- Fruit juices that have been kept for long, especially outside the fridge. Their sugars break down into simple sugars. These sugars go to the liver and transform into fat. This may be harmful to the body.
- Acidic juices (from fruits like oranges, passion-fruit) in case of a long bout of diarrhoea, or sores in the mouth or the gut.
- Processed and ready to drink juices. Most of these juices are not from fruits. They are made from coloured water, flavour and sugar. Processed juices do not have living enzymes which help in digestion. The nutrients in these juices are usually destroyed due to over processing.
- Juices sold on the streets in polythene bags.

8. Why is it necessary for PLWHA to drink a lot of water?

Water is an essential nutrient to the existence of humans. It carries most nutrients, gases, enzymes, and wastes of body processes. It also has a role in regulating body temperature.

- PLWHA may lose water due to illnesses. For instance, fever may cause loss of water through sweating. Vomiting and diarrhoea may also lead to water loss.
- Water helps in cleaning the body of wastes of metabolism, disease, and the toxicity from drugs like ARVs.

Therefore, one needs to drink at least 8 glasses of clean water per day to replace the water that is lost and meet the body's water needs.

- Drink clean water to avoid water borne diseases. HIV-infected people, especially those with low CD4 counts (less than 100) should be very careful with the water they take. It should always be boiled and if possible filtered. Boiling water for 5-8 minutes kills most of the germs.
- Beware of bottled water. Not all bottled water is safe for drinking.
- Drinking distilled water does not add value over "well boiled and filtered water".
- If one has diarrhoea or is vomiting, use oral rehydration solution that contains sugars and salts. It is a better rehydration fluid than water.

9. Do red or purple coloured fruits, vegetables or drinks increase blood (haemoglobin)?

- Most coloured (red, purple and even yellow and dark green) fruits and vegetables contain nutrients, like vitamins and minerals, in large quantities.
- Some of these nutrients are necessary for blood formation.
- A wide number of traditional vegetables contain iron that is necessary for making blood. An example of this is "rozela" plant (hibiscus specie), which is red in colour. It is rich in iron.
- Eating a variety of vegetables or fruits of different colours is healthy.
- However, not all fruits and vegetables with these colours increases blood (haemoglobin).

REMEMBER: Avoid artificial red or purple coloured drinks. They do not increase blood. They are usually a mixture of water, sugar, artificial flavours and colour.

10. Are fats and oils recommended for PLWHA?

- Fats and oils are concentrated and good sources of energy. They are recommended for PLWHA.
- They help in absorption and transportation of fat-soluble vitamins (A, D, E, K). It is important to make fats and oils part of meals.

However, fats and oils should be used in small quantities as they increase total fat levels in the blood. Fats block the blood vessels. This increases the risk of heart problems.

- Reduce intake of fat from whole milk dairy products, chicken skin and fatty meat. They raise fat levels in the blood.
- Olive oil, corn oil, flaxseed and canola oil, fats from fish and soyabeans are healthier.
- For some ARVs the intake of fats may need to be increased (e.g. saquinavir), while for others fat intake may need to be reduced at the time of taking the drug (e.g. efavirenz or zidovudine). Check with your counselor, nutritionist, or doctor.

The following is recommended:

- Limit the intake of fat during diarrhoea, but resume normal consumption when diarrhoea stops.
- Fats and oils are among foods necessary for weight gain. For a PLWHA experiencing weight loss, fats are an important part of one's diet. However, they should be consumed in small quantities if a PLWHA is gaining a lot of weight.

11. Should PLWHA take sugar?

- Sugar provides a concentrated form of energy for PLWHA.
- However, sugars like table sugar, regular sodas, fatty desserts, and even some sweetened fruit juices that quickly get broken down to simple sugar should be avoided or taken in small quantities. The liver transforms simple sugars into fat. This may lead to increased levels of fat in the blood.
- The following is recommended:
- PLWHA can continue taking sugar as part of their diet, but it should be in small quantities.
- Adding sugar to drinks or some foods increases energy intake. This is useful if a PLWHA has lost weight and wants to gain weight.
- Sugar intake should be decreased or avoided when one has mouth thrush or sores. The organisms causing this condition thrive on sugar. After this condition is cured, normal sugar consumption can resume.

12. What is the importance of honey in PLWHA?

- Honey, like sugar, is a concentrated source of energy. It helps in weight gain and has small amounts of vitamins and minerals.
- Honey contains antioxidants, which get rid of harmful free radicals in our bodies.
- Honey also has antibacterial properties, and has been used to relieve/soothe coughs, wounds and burns.
- If honey is available, PLWHA can use it, and just like other sugars, it should be in small quantities.

Honey's importance in HIV/AIDS has not been demonstrated.

13. Is tea or coffee bad for PLWHA?

Tea and coffee contain caffeine and other substances that may affect absorption of nutrients. Caffeine (also found in chocolates and cola sodas) interferes with the absorption of iron, especially iron from foods of plant origin.

- Coffee and tea have very low nutrient values.
- They should be taken in small quantities.
- Taking light tea or coffee, and reducing the quantity and frequency helps to reduce caffeine intake.
- Avoid taking tea or coffee during meals to reduce interference with iron absorption. If taken, it is advisable to have tea or coffee one hour before or after a meal. Fruit juices or drinks made from boiled spices can be taken instead of tea or coffee.
- Coffee and tea should be avoided in case of dehydration, high blood pressure, and heartburn.

14. Does alcohol have any nutritional value for PLWHA?

Alcohol does not have any nutritional value. PLWHA are advised to avoid taking alcohol because it:

- Interferes with the effectiveness of most drugs (including ARVs).
- Increases the likelihood of drug side effects and worsens side effects.
- Does not have the nutrients needed by PLWHA.

Alcohol has many other negative effects on the body:

- Interferes with food intake, digestion, absorption and storage of nutrients (Vitamin A, D, E, K and B) in the body.
- Inhibits availability of enzymes, which are important in digestion of food and absorption of nutrients in the body.

- Damages cells in the digestive system, which are important in absorption of nutrients.
- Prevents the use of absorbed nutrients by interfering with the transportation and storage of these nutrients.
- May deplete water and salts from the body.
- May cause anaemia as it interferes with absorption and use of vitamins and minerals necessary for blood formation.
- Increases the risk of getting chronic diseases such as stomach ulcers, heart diseases and cancers of the breasts, mouth, throat, larynx and liver.
- Affects thinking and decision making capacity even in regard to safe sex.
- Alcohol weakens the body.

15. Should PLWHA take micro-nutrient supplements? If so, which ones should be taken?

- Adequate intake of vitamins and minerals has been linked to slower disease progression and delayed onset of opportunistic infections (OIs).
- Vitamins and minerals should MAINLY be obtained through eating a variety of foods, fruits and vegetables. Food provides the best source of micronutrients.
- If it is not possible to consume a sufficient quantity and quality of food, or in the case of anaemia or vitamin A deficiency, daily multiple-micronutrient supplement is recommended. Taking multiple micronutrient supplements is preferred to individual micronutrients.

- Excessive doses of some micronutrients (like vitamin A and D) can be toxic. Some people who take high doses of vitamin C experience intestinal upset or kidney complications. It is advisable to adhere to the Recommended Daily Allowance.

It is important to remember the following:

- Supplements are not an alternative to a balanced meal. If taken, they should “supplement” the food eaten.
- Supplements do not treat HIV/AIDS. They improve the immunity of the body to fight against infections.
- Get advice from a health professional on which supplements are necessary and the required amount.
- It is not common to overdose or consume toxic levels of a nutrient through food intake but taking supplements may lead to overdose or toxicity.
- Other means of supplementation may be recommended by a doctor if the PLWHA is severely deficient and has had infections or other conditions (e.g. mal-absorption, diarrhoea, specific intolerances, severely malnourished).
- The diet supplements industry is not well regulated in many countries. What is sold may not contain what is written on the label.

ARVs and nutrition

1. Should PLWHA on ARVs eat any special foods?

There are no special foods for PLWHA on ARVs. Like other PLWHA, they need to:

- Eat meals with a variety of foods: energy giving foods (carbohydrates and fats), body building foods (proteins) and protective foods (vitamins and minerals).
- Eat more food as their bodies require more energy
 - Take a lot of clean safe water and fresh juice.

Some ARVs may require:

- Taking with meals (e.g. ritonavir) or before meals (e.g. zidovudine).
- That they may be taken with more fats (e.g. saquinavir) or with a limited amount of fatty foods (e.g. zidovudine, efavirenz).
- Avoiding some foods. Patients on Indinavir need to avoid grapefruit. Patients on Nevirapine need to avoid St Johns Wort. Those on Saquinavir should avoid garlic supplements.
- In all situations, people on ARVs are advised to avoid alcohol.

Side effects

2. What causes continuous nausea and dizziness among PLWHA?

- The nausea may be caused by the HIV/AIDS or it may be due to medicines. It is a common side-effect of most ARV drugs. It can also be a side-effect of other drugs taken to treat opportunistic infections.
- If it is associated with the drug, nausea normally diminishes in 2 to 6 weeks.
- If the symptoms continue after 8 weeks, see a health worker. The health worker will find the offending medicine and may change to another drug if possible or may continue with nutritional management of the symptoms first.

3. Why do some people on ARVs get terrible taste in their mouth?

- Some ARV drugs like lamivudine and zidovudine may lead to change in taste. This may go on for weeks.

REMEDIES FOR CHANGE OR LOSS OF TASTE

Try to use flavour enhancers like spices and lemon or rinse the mouth with water.

4. Why is it that people on ARVs increase fat in different parts of the body?

- The increased fat is a side-effect of some ARVs like stavudine and lamivudine. Little can be done other than change the drug.
- Some people experience this during the start of the treatment, (e.g in the first 6 months) and then stabilise.
- However, not every increase in fat is due to ARVs. Sometimes it is due to intake of more energy (carbohydrates, fats and sugars) than the body uses.

One can try to prevent the increased fat levels by:

- Dietary management: reducing intake of fats, especially saturated fats like animal fats (ghee, butter, cream, fatty-meat), processed fats/oils, sugars and alcohol.
- Eating more fibre (fruits, vegetables, legumes, whole grains)
- Maintaining a healthy weight through manageable exercises (jogging and aerobics) or physical activity.

5. Is it true that some of the ARV drugs make people lose shape/fat on arms, legs, and face?

Yes, it is true.

- This condition is called lipodystrophy.
- Lipodystrophy seems to be associated with some drugs more than others. Drugs like ritonavir and stavudine/d4T) have higher risk of fat loss.

- The condition could also be due to low levels of hormones like testosterone or a combination of the drug effects and low hormone levels.
- There is very little in terms of diet that can be done to “rebuild fat”. Your doctor may recommend an early shift to ARVs that are less likely to cause lipodystrophy (like abacavir and tenofovir).

Traditional herb therapy

Most traditional herb therapies taken for HIV-related disease and symptoms have not been subjected to formal clinical research. Therefore their effect on the course of the HIV disease is unknown.

Some people report short-term benefits of some of these herbs in soothing or relieving some symptoms. Unlike herbal therapies, ARVs have a demonstrated positive effect on slowing progression of HIV.

Some herbs may:

- Have restrictions on food intake,
- Have negative effects in the body,
- Interfere with the effectiveness of drugs one may be taking.

There is nothing wrong with using alternative therapies if:

- i. They are used to supplement rather than replace standard therapy.
- ii. They are not poisonous and do not overburden your system, e.g. liver or kidney.
- iii. There are no significant negative interactions with other medications.
- iv. They have the potential to prevent, alleviate and/or cure symptoms (e.g. lower blood pressure, increase energy, improve digestion, reduce severity of diarrhoea, etc).
- v. They are provided by a qualified traditional medicine/ alternative medicine practitioner with adequate training background, and preferably who is registered and certified.
- vi. The medical doctor is continuously informed of what one is taking.

Unfortunately, there is no good information on the toxicity of herbal remedies or their interactions with other medicines.

Therefore a PLWHA should realise that taking herbal therapies may involve some risk.

1. Should garlic be recommended for PLWHA?

- Garlic has been found to have ingredients that have antibacterial, antiviral, and anti-fungal functions, particularly in the gut, lungs, throat and mouth. Thus garlic may have some health benefits for PLWHA, but there is no clear medical evidence on this.

- Garlic has been used to manage high fat and bad fat levels in the blood. It may be useful for patients with mild hypertension, and for reducing lipids and fat deposits in the body.
- Garlic helps in improving digestion. It can be useful for patients with digestion problems.

It can be added to food when cooking, in drinks, salad or eaten raw. However, taking too much garlic may cause nausea or vomiting. It is recommended to take not more than 6 cloves per day especially when eaten raw.

REMEMBER:

People on the ARV saquinavir should avoid garlic supplements or too much garlic. It reduces the effectiveness of saquinavir.

2. Does Moringa have any nutritional value to PLWHA?

- Moringa has some nutrients like vitamin A (beta carotene), calcium and iron. It may be a good source for these nutrients.
- Traditionally it is said to have antibiotic activity, and is used to treat different illnesses. Compounds in its leaves and seeds are also said to have purifying effect on water.

Moringa is usually added to food or drinks (like tea).

Studies on its effect on immunity and use for HIV/AIDS are ongoing. Currently there is no evidence of its medical benefits to PLWHA.

3. Should PLWHA drink aloe-vera?

Aloe-vera has been used for medicinal purpose for years. The plant is said to have antibiotic properties and to strengthen the body's ability to fight infections. Traditionally it has been used

in the healing of minor wounds and burns.

However, studies are ongoing to assess the benefits of the plant among PLWHA and currently there is no evidence of its medical benefits to PLWHA.

4. Are mushrooms recommended for PLWHA?

- Yes PLWHA can eat mushrooms as part of their daily food. They provide some minerals and vitamins.

Mushrooms are useful for maintaining good health. They may be part of a meal for PLWHA. However, some mushrooms are known to be poisonous. Get more information about edible mushrooms.

- Mushrooms have been used as traditional herbal medicines in China and Japan for thousands of years. In Asia they are commonly used for pain relief and treating diseases like arthritis.
- Mushrooms have components that are known to be anti-viral and may have the potential of treating viral infections. However, research into the field is in early stages. Currently there is no evidence that mushrooms have medical benefits for PLWHA.

Maintaining body composition

1. Why and how do PLWHA get very thin?

Not every PLWHA loses weight. However, some PLWHA lose 10-20% of their normal weight within a very short period.

Factors that may contribute to weight loss in PLWHA include:

- The virus causes changes in the way the body uses and distributes food, especially if the viral load is high. It also causes changes in hormone levels (e.g testosterone) in the body which also may contribute to weight loss.
- Inadequate food intake, which may be due to loss of appetite, inability to swallow due to throat infections, depression, lack of food, or side effects of medication.

- Digestive system infections (diarrhoea, constipation, poor absorption) that may prevent food from being well absorbed.
- Chronic and severe infections which increase demand for foods, especially energy giving foods. If this demand is not met the body breaks down fat and muscle tissue.
- Fat loss (lipodystrophy), especially on the face, arms and legs, as a side effect of ARVs (e.g. stavudine and zidovudine).

2. Is it possible for a PLWHA who is losing weight to gain it?

It is possible for the majority of the PLWHA to regain weight. However, how fast a PLWHA gains weight will depend on a number of factors. Causes of weight loss and factors preventing them from gaining weight include:

- The amount and type of food one eats compared to how much the body requires and use.
- If one takes in more food than is required by the body, one will gain weight.
- If one takes in less food than is required by the body, one will lose weight.

3. How can PLWHA increase weight if they have been losing it?

They can prevent further weight loss and gain weight by:

- i. Eating meals with foods that are rich in energy (e.g. fermented products of millet, sorghum, and maize) and body building foods, especially from animal sources (e.g milk, meat and eggs).

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