



# NUTRITIONAL ASSESSMENT FOR HIV PATIENTS

Private Health Sector Project



## Nutritional Care and Support

### Components of Nutritional care and support

1. Nutritional assessment
2. Education & counseling on Nutrition & hygiene
3. Linkage to food support/ supplementation
4. Diversified food intake (achieving the Recommended Daily allowance of vitamins & minerals)
5. Management of Malnutrition
6. Management of symptoms- loss of appetite, sore in the mouth, drug side effect
7. Therapeutic feeding when indicated
8. Home –based care & home delivery of meals

### Nutritional assessment for HIV patients

All HIV+ patients in HIV care and treatment shall have routine nutritional assessment and malnourished patients shall be provided with or referred to nutrition care & support.

At every visit assess nutritional status by physical examination: i.e.

Anthropometry & physical signs:

- Measure Weight, Height, MUAC
- Calculate BMI:
- Look for physical signs- pallor, edema, glossitis/ cheilitis

Refer for food and nutrition intervention:

- BMI < 18.5 or
- MUAC < 18.5 cm,
- underweight with/ without edema

**BMI formula:**

$$\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (m) X height (m)}}$$

(Normal value= 18.5 - 24.9)

### Mid/Upper Arm Circumference (MUAC)\*:

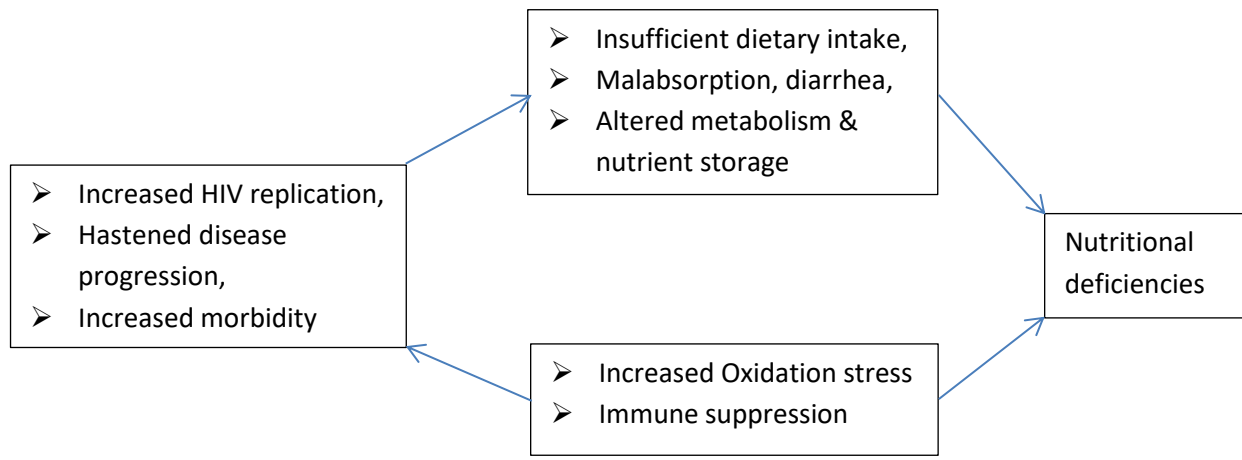
- Circumference of the **left** upper arm,
- Measured at the midpoint between tip of shoulder & tip of elbow

\*\* Better than BMI for pregnant women,

(Normal value: **22cm** for women and **25cm** for men,  
**12.5 - 13.5 cm** for children between 1 & 5 years)

- **The steps to measure MUAC are illustrated in this document.**

## **Vicious cycle of Malnutrition and HIV**



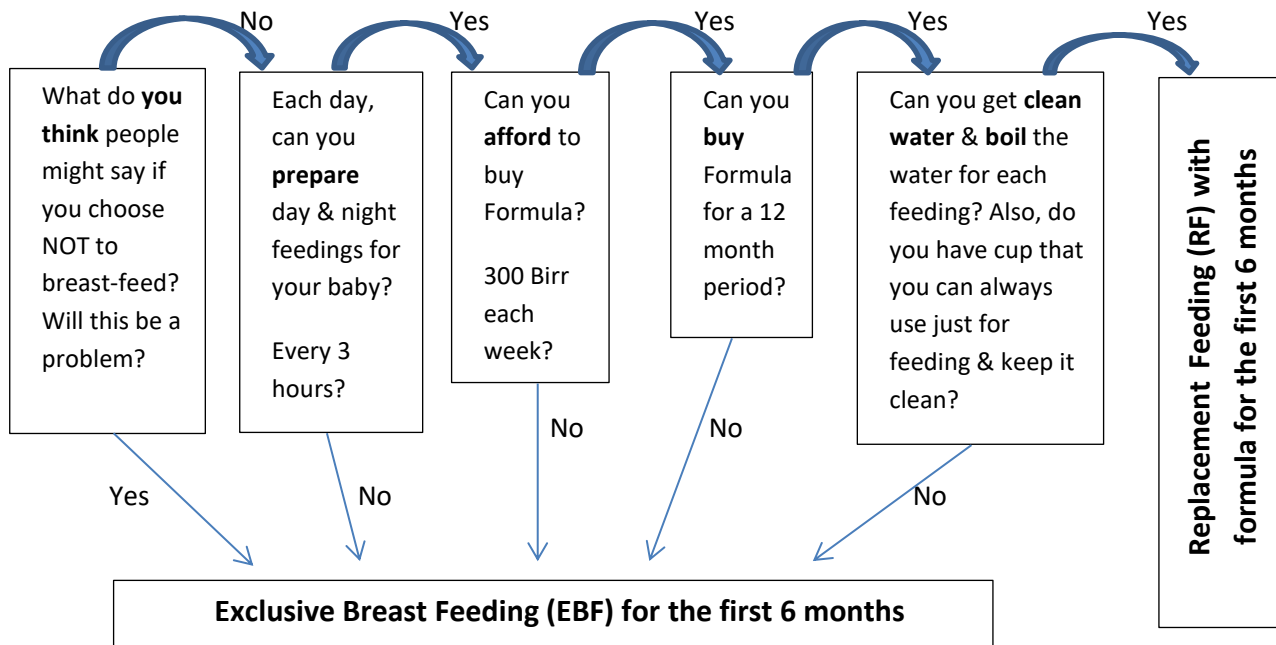
## **Nutritional counseling to HIV+ adults and adolescents**

1. Counsel on the seven ways of maintaining strength:
  1. Educate on seeing a health care worker for periodic nutrition assessment (Weight measurement & interpretation),
  2. Educate to eat more, and different kinds of food,
  3. Instruct to maintain high level of hygiene & sanitation,
  4. Advise to drink plenty of clean and safe water (treated/ boiled),
  5. Advise to maintain a healthy lifestyle,
  6. Encourage to seek early treatment for infections & manage symptoms through diet,
  7. Advise to take medicines as prescribed & to manage food & drug interactions & side effects,
  
2. Counsel on Micronutrient supplements into daily intake:
  - just supplement, and not replacing food or standard therapy (ART),
  - recommend variety of foods,
  - not exceeding ones recommended dietary allowance (RDA),

## **Nutritional Counseling to HIV+ women during pregnancy & lactation: (MNCH)**

- Counsel on having additional meal (snacks) during pregnancy & lactation,
  1. Assess **nutritional status** at every contact/ visit:
    - measure MUAC and record, Normal is > 21 cm,
      - \* If MUAC < 21cm, evaluate for advanced diseases & refer to food & nutrition intervention,
    - measure Weight and record,
      - \* (if no weight gain or <1 kg per month during 2<sup>nd</sup> & 3<sup>rd</sup> trimester- investigate (OIs?), refer for additional food and nutrition intervention!
    - assess anemia by looking for pallor,
      - give iron/ folic acid supplement,
      - \* If sign of anemia:- determine Hgb level, give deworming medicine, counsel to eat foods rich in iron & Vitamins A & B12 (red meat, liver, carrot, eggs, mangoes, green leafy veg),
  2. Counsel on & support **maintaining strength** (7 ways for PLHIV):
    - counsel to eat additional one **snack** during pregnancy & 2 snacks during lactation,
    - address factors that may limit food intake- morning sickness/ nausea/ anorexia, beliefs,
    - take **supplements** with meals,
    - drink plenty of **safe clean water** (treated/ boiled),,
    - maintain high level of **hygiene & sanitation**,
    - seek **early treatment** for infections & symptoms (fever, cough, diarrhea),
    - Use insecticide treated mosquito nets (**ITNs**) for prevention of malaria,
    - **take medicines** as advised by your health care worker & manage food & drug interactions & side effects,
    - counsel on/ prepare her on **family planning** methods & prevention of STIs,
  3. counsel on & support safe **Infant feeding** options:
    - **Exclusive** Breast feeding (EBF) until 6 month,  
EBF = breast milk alone without anything else not even water, except prescribed medication or vaccination.
    - plan for immediate implementation after birth, put the infant on the breast within one hour,
    - counsel and demonstrate proper **baby- breast attachment** and **positioning**,
    - counsel and enable her to maintain breast health,
    - Mixed feeding increases the risk of MTCT and should NEVER be practiced!

If there is a request by mother for replacement feeding, evaluate whether a woman can implement exclusive replacement feeding (ERF) or not using AFASS criteria:



Source: National GL on Pediatric HIV/AIDS & treatment. FHAPCO/MOH, 2007.

**Note:**

Always encourage exclusive breast feeding (EBF), discourage mixed feeding,

If a woman prefers replacement (Formula), counsel her to:

- Prepare fresh infant formula as per the instruction for each feeding,
- Measure the amount of milk powder needed for one feeding & mix it with correct amount of cool, boiled water,
- Wash hands and clean all utensils, containers and cups with soap & soap before preparing milk,
- Feed the infant by cup,
- Not to mix with breastfeeding,

## Criteria for identifying & categorizing Malnutrition in PLWHIV:

- DO Anthropometric assessment at every visit to determine malnutrition & eligibility for therapeutic &/ or supplementary food package:
    - Measure weight in kg to the nearest 100gm,
    - Measure height in meter to the nearest 1 cm, once at the first visit for adults.
    - Calculate BMI at each visit for adults (except pregnant women):
    - BMI result interpretation:
      - BMI <16: →Severe Malnutrition,  
→ **Therapeutic** food package,
      - BMI 16- 18.4: →Moderate/ Mild malnutrition,  
→ **Supplementary** food package,
- |                  |                                   |
|------------------|-----------------------------------|
| BMI < 16:        | <b>Severely</b> malnourished      |
| BMI 16 – 16.9:   | <b>Moderately</b> malnourished,   |
| BMI 17 – 18.4:   | <b>Mildly</b> malnourished,       |
| BMI 18.5 – 24.9: | <b>Normal</b> Nutritional status, |
| BMI > 25:        | <b>Overweight/ obese/</b>         |
- Check for:
    - dietary **intake**,
    - any drug **side effects** or **symptoms** of OIs,
    - possible alcohol **abuse** or poor **adherence**,
  - For pregnant women, use **MUAC** to assess nutritional status and determine malnutrition,
  - For children, use the WHO weight for age and height for age charts (boy/ girl), WHO head circumference for age charts (boy/ girl) to perform growth monitoring and development assessment, and use MUAC to assess nutritional status and determine malnutrition.

### Identifying Malnutrition Using MUAC:

- Defining Malnutrition uses different readings/ values for different groups as below:
  - Adult men, non-pregnant or non-lactating women: < **18.5cm**,
  - Pregnant &/ or lactating women (up to 6 months): < **21cm**,
  - Children:
    - 6- 11 months: < **12cm**,
    - 12- 59 months old: < **13 cm**,
    - 5 – 9 years: < **14.5cm**,
    - 10 -14 years: < **18cm**.

- For malnourished PLWHIV, in addition to Nutritional care & support, it is recommended to do
  - Assessment of the client’s dietary intake, hygiene, sanitation and living condition including food security, and
  - Evaluation for any clinical condition/ factors preventing adequate food consumption.
  - Treat clinical conditions, if it is severe malnutrition, (WFH <-3 or BMI <16), refer for inpatient care/ Therapeutic Feeding (TF).
- If nutritional care is not available, Facilitate and link those malnourished PLWHIV (adult/ children/ pregnant women) to nearby *Food Assistance program for PLHIV* service.

**Types of Nutritional interventions:**

- **Therapeutic Foods:** Ready- to- use Therapeutic food (RUTF)- Plumpy nuts,
- **Therapeutic Formula milk:** F-75 & F- 100 for inpatient care for severe malnourished infants and children
- **Supplementary Foods/ Fortified Blended Food (FBF)\*\*:** Corn-Soy Blend (CSB), fortified oil, micronutrients, milk powder or whey protein concentrate,

*\*\* Food supplementation is not appropriate for infants under 6 months of age!*

Methods of Nutritional care/ intervention:

- Food by prescription
- On-site feeding
- Take home food ration

## Nutritional Management of PLHIV

Depend on **Severity** of malnutrition (Category), **Age** (children/ Adult) & being **pregnancy/ lactating** women.

### Nutritional care plan A (RED)

- It is Therapeutic Feeding that can be given at **In-patient** care level transitioning to out-patient Therapeutic feeding program (TFP),
- Indicated for **Severe Acute Malnutrition** OR **Moderate malnutrition** with **medical** complications:
  - Bilateral pitting edema, WHO WFH <70%/ WHZ<-3, OR
  - MUAC < 11cm (6-11mos), MUAC < 11cm (12-59mos), MUAC <13.5cm (5- 9yrs), MUAC < 16cm (10-14yrs).

**Phase 1:** Inpatient feeding program with special milk, **F-75**

**Transition:** Stabilized and tolerate F-75, the patient will be transitioned to **F-100** milk or **RUTF**

**Phase 2:** can be in-patient or out-patient with **F-100** milk or **RUTF** (+ **FBF** in adults).

- Perform clinical care:
  - Provide **vitamin A**, deworm with **Albendazole**, and repeat every 6 months
  - Ensure **CPT** (CTX Prophylaxis),
  - Screen for **TB**,
  - Treat infection if any, treat **dehydration**,
- Discharge criteria:
  - WHZ > -2 or WFH > 80% OR
  - MUAC > 11cm for children 6 – 59months,
  - MUAC > 13.5cm for children 5 – 9 years,
  - MUAC > 16cm for children 10 – 14 years, **AND**
  - No edema for consecutive 2 visits,
- Routine follow up is every week for children and every 2 weeks for adults,
- Check progressive weight gain at every visit and Advise care giver to feed according to the prescription.



## **Nutritional care plan B (YELLOW)**



- **Supplementary food:**  
For **Moderate** malnutrition, **poor** weight gain or PLWHIV with signs of symptomatic **diseases**.
  - For all HIV- affected OVC 6- 23 months, provide supplementary food regardless of nutritional status:
    - Provide 100gm FBF per day AND 92gm RUTF in addition.
    - Exit at age of 24 months unless malnutrition persisted/ detected,
  - For malnourished adults and adolescents (non-pregnant/ lactating):
    - BMI <16 or BMI b/n 16 & 18.5 with bilateral edema: → 3 sachets of RUTF + 400gm of FBF,
    - BMI 16- 18.5: → 1 sachet of RUTF + 200gm of FBF daily,
  - For HIV+ pregnant/ lactating women:
    - MUAC > 18.5 & < 21cm: →1 sachet of RUTF + 300gm of FBF
- **Perform clinical care:**
  - Provide CPT (CTX prophylaxis)
  - Counsel client or care giver to make sure they understand the plan
  - Screen for TB
  - Clinically stage and assess eligibility for ART
  - If on ART, assess immune response
  - Provide vitamin A, deworm with Albendazole, and repeat every 6 months
- **Discharge criteria:**
  - Change to Nutritional care plan C when BMI >18.5 for adults or MUAC >21 for pregnant/ lactating women AND there is no Weight loss AND no clinical sign of symptomatic diseases.
  - Change to Plan A or refer to specialized investigation and care if not gaining weight for 3 or more months or continues to lose weight for 2 or more months,
- First visit in 2 weeks & every 1 – 2 months depending on response

## How to Measure Mid-upper Arm Circumference (MUAC):

1. Keep your work at eye level. Sit down when possible. Ask the patient/ mother to remove any clothing that may cover the left arm.
2. Locating the tip of the child's shoulder with your fingertips
3. Bend the child's elbow to make the right angle
4. Place the tape at zero, on the tip of the shoulder and pull the tape straight down past the tip of the elbow. Read the number at the tip of the elbow to the nearest centimeter. Divide this number by 2 to estimate the midpoint. You can also bend the tape up to the middle length to estimate the midpoint. A piece of string can also be used for this purpose.
5. Mark the **midpoint** with a pen on the arm.
6. **Straighten** the child's arm and wrap the tape around the arm at the midpoint. Make sure the numbers are right side up. Make sure the tape is flat around the skin.
7. Inspect the tension of the tape on the arm. Make sure the tape has the proper tension and is not too tight or too loose. Repeat any step as necessary.
8. When the tape is in the correct position on the arm with correct tension, read and call out the measurement to the nearest 0.1cm.
9. Immediately record the measurement.

## Measuring Height

- Height/ Length is measured against a firm straight surface with bare foot,
- Occiput of the head, shoulders, buttocks, calves & heels shall touch the firm surface,
- Line of sight shall be parallel to the ground (in case of standing) or to the foot rest in case of measuring using board.
- Read the number straight at right angle to the wall or measuring board

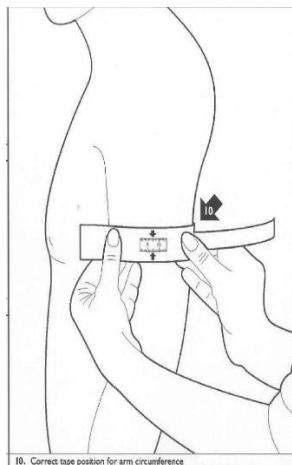


Fig.1 Measuring MUAC

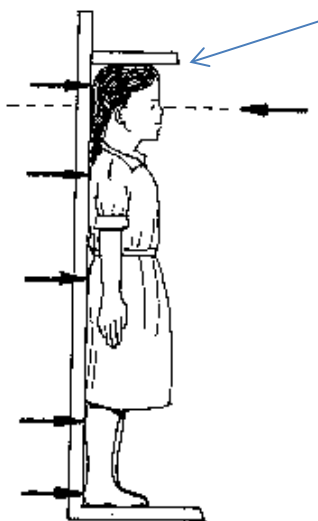


Fig. 2 Measuring Height