GLOBAL NUTRITION CLUSTER
Technical Alliance

FAQ Patient Care 1. How should a nutritional assessment be carried out in an Ebola Treatment Unit (ETU)?

What should be included in a nutritional assessment?

A comprehensive nutritional assessment is important for gathering the information required to provide quality and individualized nutritional care to ETU patients. Assessment should include **dietary needs**, **dietary preferences** and **need for feeding support**.

The assessment should be done as soon as possible following admission. Timing may depend on clinical status of patient and staff availability (i.e., adequate time should be devoted to the assessment to ensure all essential information can be captured accurately).

Nutritional care for ETU patients should be carefully monitored and adjusted as needed. Regular re-assessment of patient needs and preferences is a crucial as part of this (see FAQ G4). The nutritional assessment can be completed by any healthcare worker who has been appropriately trained. Carrying out nutritional assessments should be an assigned responsibility to ensure that it is done systematically.

1. Dietary needs

The nutritional management of ETU patients should meet basic (maintenance) nutritional requirements / dietary needs and address or minimize the impact of EVD.

Dietary needs are based on the following nutrition-related conditions:[1,2]

- Age
- Nutritional status (see Table 1 below)
- Pre-existing co-morbidities (e.g., diabetes, hypertension, physical disability)
- Presence and level of dehydration
- Severity of illness
- Presence of metabolic disturbance and/or electrolyte imbalance
- Level of appetite
- Ability to eat and drink / presence of swallowing difficulties
- For children <2 years old: Breastfeeding status – exclusive, mixed (breastfeeding + other milk), complementary (breastfeeding + complementary foods), or not currently breastfed.

When a patient's clinical status is appropriate for feeding, food tolerance[3] and appetite should be assessed. This will help establish whether: 1) a patient's body can handle oral intake (food tolerance); and 2) the patient is ready/wanting to eat/drink (appetite). It is also important to evaluate the patient's physical ability to eat and identify any difficulties or obstacles to eating beyond appetite (see below for feeding support). These factors will help determine the required consistency of foods (e.g., liquid, semi-solid, solid). Whenever possible, food tolerance and appetite should be assessed with a regular meal and at regular mealtime (see Annex 1 and 2 for details). For infants <6 months of age, food tolerance and appetite should be evaluated via a breastfeeding assessment or while feeding an appropriate breastmilk substitute.

2. Dietary preferences

Patients are more likely to eat food that aligns with their preferences and habits. This is essential for patient nutrition and helps decrease the quantity of uneaten food left at the bedside (thus creating less hazardous material and less work for infection prevention and control teams). Receiving and consuming preferred foods can also help patient morale.

Patients should be asked what foods and drinks they like and don't like, so that individual preferences can be accommodated whenever possible and used to inform general meal and recipe planning (see FAQ G4 for more information regarding patient preferences). Non-consumed food and drinks should be recorded and an attempt should be made to understand why they were not consumed.

3. Requirements for feeding support

EVD patients can be very sick and weak and may require physical assistance to eat/drink. Young children, in particular, generally require help to eat and drink, as they are often separated from parents and familiar caretakers.

The type of support required can vary widely, depending on clinical condition and feeding needs. Some patients may benefit from specific equipment and materials to assist with positioning (e.g., sitting support or a cushion that can be easily sanitized) or food intake (e.g., straw, cup and spoon). Other patients may require direct physical support by a caretaker or health worker (i.e., assistance with actual feeding). In some cases, patients may benefit from medication to support feeding (i.e., anti-nausea or heartburn medication).[4]

Patients should be assessed upon admission and daily thereafter to determine what kind of support they require to facilitate feeding. See Annex 3 on feeding support assessment.

Examples of physical support tools to facilitate dietary intake[1]

How to do a nutritional assessment?

Nutritional status is assessed via a **patient's weight, the appropriate age-dependent anthropometric indicator** (see Table 1)**, and presence/absence of nutritional oedema**.

Patients identified with acute malnutrition should be managed according to the national protocol for the management of acute malnutrition, with special consideration of the patient's EVD status.[2]

Table 1. Suggested anthropometric indicators for assessing nutritional status, and associated nutritional status classification, according to age category

Age category	Anthropometric indicators	Nutritional status classification
<6 months old	WAZ*	https://www.who.int/tools/child-growth-standards/standards/weight-for-age
	WHZ	https://www.who.int/tools/child-growth-standards/standards/weight-for-length-height
6–59 months old	MUAC	Severe acute malnutrition: <115 mm Moderate acute malnutrition: ≥115 and <125 mm No acute malnutrition >125mm
	WHZ	https://www.who.int/tools/child-growth-standards/standards/weight-for-length-height
5–17 years old**	BMI-for-age	https://www.fantaproject.org/tools/bmi-look-up-tables
≥18 years old*	BMI = Weight (kg)/Height (m^2)	Severe acute malnutrition: <16 kg/m^2 Moderate acute malnutrition: ≥16 and <18.5 kg/m^2
Pregnant women	MUAC	<230 mm^3, to be considered for nutritional support

MUAC (mid-upper arm circumference); WHZ (weight-for-height z-score); WAZ (weight-for-age z-score); BMI (body mass index)

* Some organizations use MUAC/age for infants <6 months of age. See https://www.ennonline.net/ourwork/research/mami

**Some national nutrition protocols may also use MUAC for children >5 years of age and adults; refer to these if useful and/or appropriate.

NOTE: The types of measures that can be undertaken will be dependent on available equipment, staff capacity and patient caseload; however, all efforts should be made to take accurate measurements to enable efficient assessment and follow-up.

Taking anthropometric measures:

- **Weight:**
  - Weigh all patients.
  - Cover scales in plastic and change them before after each patient. If plastic is not feasible, sanitize the scale after each patient.[1]
  - Regularly calibrate scales and put them to zero before each use.

- **Height:**
  - Attempt to ascertain height for all patients; this is most important for non-pregnant adults (for calculating BMI).
  - Ask the patient his or her height; take a measurement if height unknown or uncertain.
    - Use appropriate instruments for measurement, according to age and clinical status. For patients ≥2 years old and able to stand, use height (measured standing up); for patients <2 years or unable to stand, use length (measured lying down).
    - Sanitize instruments after each patient.

- **Mid-upper arm circumference (MUAC):**
  - Take MUAC of all children 6–59 months of age and pregnant women. (NOTE: MUAC may be used for individuals outside of this age range according to national or organizational nutritional protocols).
  - Use disposable tapes, one for each patient. If not possible, sanitize the tape after each patient.

Assessing for nutritional oedema (bilateral pitting oedema)

- Nutritional oedema is a clinical sign of acute malnutrition, especially in children. It may also be a symptom of other medical conditions, especially in adults, so take a careful medical history and always ask where the oedema first appeared.
- Assess nutritional oedema in all patients, particularly in children <5 years of age.
- Apply pressure bilaterally, hold for a few seconds, then observe for signs of pitting oedema; first in feet (+), then lower legs (++), then arms (+++).

Table 2. Suggested timing for assessment of nutritional status in ETUs

	Upon admission	During stay	Upon discharge
Weight	X	Daily or at least every two days*	X
Height	X		
Appropriate anthropometric indicator (see Table 1)	X	If there is weight loss or concerns after feeding re-assessment	X
Nutritional oedema	X	If there is weight loss or concerns after feeding re-assessment	X

***** If using a hanging scale with bucket/pants: Clean with soap and water, rinse and then disinfect with 0.1 per cent chlorine solution, or Sulfanios disinfectant if available. If using electric scales, follow the same process as above but take care not to get liquids into electronic compartments. Wipe over electronic displays rather than putting excessive liquid on them. (From MSF Covid IPC advice).

ANNEXES

ANNEX 1. Tips for assessing food tolerance and appetite (children 6 months of age and older)

Provide the patient with an age-appropriate standard/local meal. Ask local staff to help judge meal portions according to local practices.

If it is not possible to perform the assessment with a standard/local meal, use ready-to-use therapeutic food (RUTF) or ready-use-use supplementary food (RUSF) directly from the package or prepared as a porridge. RUTF/RUSF should only be used when a standard/local meal is unavailable, as poor familiarity/acceptability with the product may interfere with accurate assessment (see national protocol for management of acute malnutrition for correct procedure).

A patient has poor **food tolerance** if there are signs of digestive trouble following ingestion of food or drink (e.g., vomiting, abdominal pain, flatulence)**.**

Appetite is evaluated as poor, moderate or good depending on the portion of a meal (or sachet of RUTF/RUSF) that a patient is able to consume. Attention should be given to the ability to handle solid foods. If the patient appears to have good appetite but has difficulty handling solid food, adjust food consistency as needed (e.g., liquid, semi-solid or solid diet).

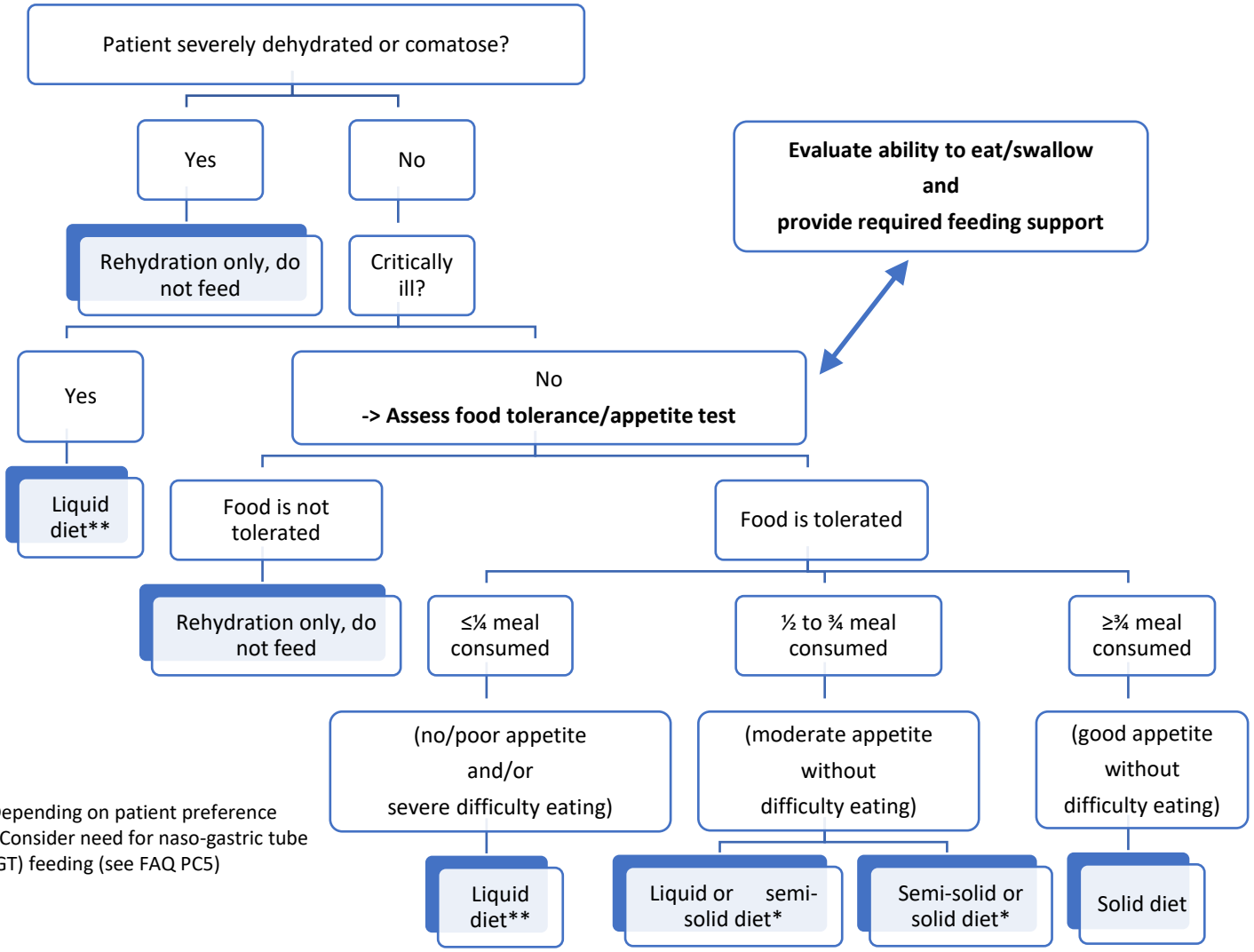
Interpretation of appetite when using a standard meal:

- Consumption of <¼ of the meal = no/weak appetite
- Consumption of ¼ to ¾ of the meal = moderate appetite
- Consumption >¾ meal = good (normal) appetite

Table 1. Interpretation of appetite test when using paste form RUTF/RUSF, based on the patient's weight:[5] z(children 6 months of age and older)

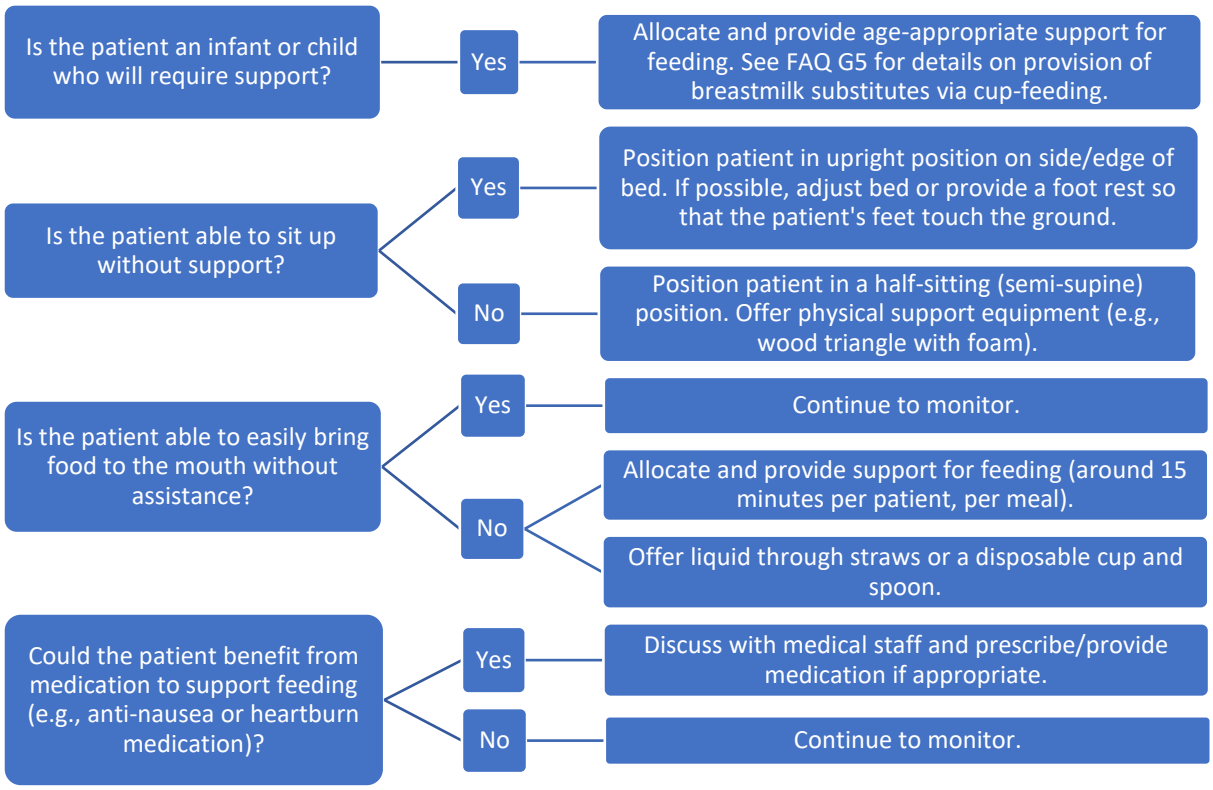
Weight	Minimum amount of RUTF/RUSF sachet (92g) to be consumed for "normal" appetite
<4 kg	At least 1/8 of the sachet
4–6.9 kg	At least ¼ of the sachet
7–9.9 kg	At least 1/3 of the sachet
10–14.9 kg	At least ½ of the sachet
15–30 kg	At least ¾ of the sachet

ANNEX 2. Food tolerance and appetite test - decision tree



* Depending on patient preference
** Consider need for naso-gastric tube (NGT) feeding (see FAQ PC5)

ANNEX 3. Feeding support assessment



References

1. International Committee of the Red Cross (ICRC), Médecins Sans Frontières (MSF OCB/OCG). *Nutritional Protocol for* Patients Infected with Ebola Virus Disease. v 3.; 2016.
2. Save the Children. ETC Nutrition Protocol - Kerry Town Ebola Treatment Centre. V2 ed.; 2015.
3. République Démocratique du Congo, Ministere de la Santé, Programme National de Nutrition (PRONANUT), with support from UNICEF. Protocole de Soins Nutritionnels Chez Le Adultes et Les Enfants Avec Maladie a Virus Ebola (MVE) Hospitalisés Aux Centres de Traitement (CTE).; 2018.
4. GOAL. International Package of Tools and Protocols for Ebola Treatment Units.; 2014.
5. République Démocratique du Congo, Ministere de la Santé, Programme National de Nutrition (PRONANUT), with support from UNICEF. Protocole de Soins Nutritionnels Dans Le Context de La Maladie a Virus Ebola and Republique Democratique Du Congo; 2019.