

FAQ Patient Care 6. What are the dietary recommendations for Ebola Treatment Unit (ETU) patients with diarrhoea and/or vomiting and subsequent electrolyte abnormalities?

Diarrhoea and vomiting are among the most frequent symptoms in EVD; they can have an enormous negative impact on a patient's hydration and nutritional status.

One of the consequences of fluid loss is abnormally low electrolyte concentrations, most commonly potassium and calcium.¹

Dietary recommendations for patients with diarrhoea:

- Continue to offer food and fluids (including to those receiving IV fluids) and ensure adequate intake.²
- Do NOT offer sugary carbonated drinks or fruit juices as their high osmolarity may exacerbate diarrhoea.³
- Avoid providing foods high in insoluble fibre (i.e., whole grains) to patients with profuse diarrhea. Reintroduction of insoluble fibre should be done progressively, and once diarrhoea is resolved.⁴
- Ready-to-use therapeutic food (RUTF) or ready-to-use supplementary food (RUSF) in the form of a biscuit or paste should only be given to those able to drink sufficient water by themselves (a minimum ratio of 1 ml of water for each kcal of the diet).⁴
- Ensure timely feeding (before the patient becomes catabolic), and if possible and acceptable, provide protein containing foods during rehydration with IV and/or oral rehydration solution (ORS), despite diarrhoea.⁵
- For patients with profuse or persistent diarrhoea, providing rice water and porridges may be helpful in decreasing stool output (see Annex 1 for recipes). Rice water can be consumed on demand, instead of water, between meals and doses of ORS.^{6,7}
- If temporary lactose intolerance is suspected, consider providing a dairy-free (lactose-free) diet for a period of 24–48 hours. Replace regular diet with a diet consisting of rice porridge, starting with a light porridge without oil. If diarrhoea diminishes, progress to a stronger porridge with oil as tolerated.^{6,7}
 - This porridge is low in protein; it should therefore not be prescribed for an extended period.^{6,7}
 - An alternative is to mix RUTF with the rice porridge, gradually increasing the amount.^{6,7}
- Prescribe zinc to children (20 mg/day) and infants under 6 months of age (10 mg/day) with diarrhoea for the period of 10–14 days.²
 - If the child is receiving F75 or F-100, do not prescribe extra zinc as F75 and F-100 already contains the recommended amount to meet an EVD patient's needs.⁴

Dietary recommendations for patients with profuse vomiting:

- Space meals into small and frequent feedings.⁴
- Provide ORS and monitor signs of dehydration.²
- Keep the patient hydrated; this is essential for clinical status but can also help alleviate the symptom.⁴
- RUTF or RUSF should only be given to those who are able to drink sufficient water by themselves (a minimum ratio of 1 ml of water for each kcal of the diet).⁴
- Ensure timely feeding (before the patient becomes catabolic) and if possible and acceptable provide protein containing foods during rehydration with IV and/or ORS, despite vomiting.⁵
- Discuss with the medical team regarding the utility of adding antiemetic medication.

Dietary recommendations for patients with hypokalemia (low serum potassium):

NOTE: The following guidance does NOT replace the necessary clinical management of electrolyte imbalances – see appropriate clinical guidance for this [here](#) ^a

- Aim for a diet rich in potassium (3-4 g/day).³ Foods rich in potassium should be prioritized in the selection of food and beverages in the diet (see Annex 2 for list of foods).⁴
- Some foods may be rich in potassium when raw, but they lose a lot during cooking (e.g., cereals, fish, green leafy vegetables). If food is boiled, an important part of the potassium is lost in the water (unless it is used for soup and the patient also consumes the water in which the vegetables have been boiled). Fish should preferably be grilled rather than boiled and green leaves should be cooked in a saucepan for a short time and then added to the sauce or the meal.⁸
- Coconut/jelly water (54 mEq/L) and bananas (10 mEq/banana) are well-accepted foods rich in potassium.²
- Specialized nutrition products such as Super Cereal and RUTF may be helpful as they are rich in potassium.^{2,3}

Dietary recommendations for patients with serum calcium abnormalities

NOTE: The following guidance does NOT replace the necessary clinical management of electrolyte imbalances – see appropriate clinical guidance for this [here](#).¹³

Hypocalcemia (low serum calcium)

- Promote consumption of calcium-rich foods (see Annex 3).

Hypercalcemia (high serum calcium)

- Maximize oral rehydration with ORS and/or other fluids.
- Limit/avoid consumption of calcium-rich foods and drinks (see Annex 3).

^a <https://www.who.int/publications/i/item/optimized-supportive-care-for-ebola-virus-disease>

Dietary recommendations for patients with serum sodium abnormalities

NOTE: The following guidance does NOT replace the necessary clinical management of electrolyte imbalances – see appropriate clinical guidance for this [here](#).¹³

Hyponatremia (low serum sodium)

- Principally a water balance disorder; management should consider volume status (hypovolemia).
- Increase consumption of sodium-rich foods (see Annex 3 for the list of foods).³
- Specialized nutrition products, such as Super Cereal and RUTF, may be helpful as they are rich in sodium.³
- If hypovolemic: encourage consumption of ORS instead of water (see Annex 3 for list of foods).

Hypernatremia (high serum sodium)

- Increase fluid intake.
- Limit the consumption of sodium-rich foods (see Annex 3).³
- Avoid consumption of RUTF as it is rich in sodium.³

ANNEXES

Annex 1. Recipes for rice water and rice porridge⁹

1. Rice water

- Boil 50 to 60 g of rice (dry weight) in 1 litre of water for 30 minutes (covered to avoid evaporation)
- Filter and retain liquid
- Add 1 to 2 tbsp of sugar to liquid

2. Light rice porridge

- Boil 50 to 60 g of rice (dry weight) in 1 litre of water for 30 minutes (covered to avoid evaporation)
- Crush rice
- Add 1 to 2 tbsp of sugar

3. Rice porridge (enriched)

- Cook 80 g of crushed rice (or rice flour) in ± 300 ml of water for 15 to 20 minutes
- Add 15 g (1 tbsp) sugar (and 20 g oil)

This porridge provides 525 or 348 kcal depending on whether oil is added; it is low in protein (only 4.2 per cent or 6.4 per cent of caloric content).

Annex 2. Foods rich in potassium¹⁰

Food	Classification (potassium mg/100 g edible portion)		
	High (250–499)	Very high (500–750)	Extremely high (751–1190)
Starchy roots, tubers			
Cassava flour		X	
Cassava tuber dried		X	
Cocoyam tuber, raw or boiled	X		
Potato, boiled	X		
Sweet potato, boiled	X		
Yam tuber, boiled		X	
Legumes			
African yam bean, boiled	X		
Bambara groundnut, dried, boiled	X		
Bambara groundnut, dried, raw			X
Beans, white, boiled	X		
Peas, boiled	X		
Soya beans, boiled		X	
Vegetables			
Garlic, raw		X	
Green leaves (amarante, baobab, cassava, roselle, spinach, vernonia), raw or boiled ^b	X		
Parsley, fresh		X	
Tomato paste, concentrated			X

^b Around 50% is lost through boiling (unless cooked as a soup and the patient also eats the cooking liquid). Preferably cook for a short time in a saucepan.

Food	Classification (potassium mg/100 g edible portion)		
	High (250–499)	Very high (500–750)	Extremely high (751–1190)
Nuts and seeds			
Cashew nuts, raw		X	
Coconut, kernel, dried, raw		X	
Coconut, mature kernel, fresh, raw	X		
Groundnut, shelled, dried, raw		X	
Melon seeds		X	
Sesame seeds	X		
Meat and poultry			
Goat meat, boiled or grilled	X		
Pork meat, grilled	X		X
Rabbit meat, grilled	X		
Fish			
Most fish, especially anchovy, carp, mackerel and sardine, preferably grilled, rather than boiled		X	
Fruits			
Avocado, pulp	X		
Baobab fruit/monkey bread (pulp)			X
Coconut milk/water	X		
Dates (dry)		X	
Dattock dried pulp			X
Dattock pulp, raw	X		
Figs (dry)			X
Mango pale orange/deep orange	X		
Melon	X		
Orange	X		
Papaya	X		
Plantain, ripe, raw		X	
Plantain, ripe, boiled	X		
Tamarind fruit, ripe, raw		X	

Annex 3. Foods and drinks that are rich in calcium or sodium.^{3,11,12}

	Rich in calcium	Rich in sodium
Vegetables	Green leafy vegetables: broccoli, collard greens, kale, okra	
Foods of animal origin	Dairy: cheese, yoghurt Fish with bones that are eaten: sardines, pilchards	Eggs Fresh fish Lean meat Poultry Yoghurt Cheese
Beverages	Milk	Milk
Cereal and grains	Calcium-fortified flours and cereals	Brown or wild rice Oats Whole wheat bread
Legumes	Beans Soybeans	Lentils Peas Soybeans
Fruit	Figs (dried) Oranges	
Other	RUTF	Processed foods

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