

Feeding formulas: What are F-75 and F-100?

F-75 is the "starter" formula to use during initial management, beginning as soon as possible and continuing for 2-7 days until the child is stabilized. Severely malnourished children cannot tolerate usual amounts of protein and sodium at this stage, or high amounts of fat. They may die if given too much protein or sodium. They also need glucose, so they must be given a diet that is low in protein and sodium and high in carbohydrate. F-75 is specially made to meet the child's needs without overwhelming the body's systems in the initial stage of treatment. Use of F-75 prevents deaths. F-75 contains 75 kcal and 0.9 g protein per 100 ml

As soon as the child is stabilized on F-75, F-100 is used as a "catch-up" formula to rebuild wasted tissues. F-100 contains more calories and protein: 100 kcal and 2.9g protein per 100 ml.

The choice of recipe may depend on the availability of ingredients, particularly the type of milk, and the availability of cooking facilities

The principle behind the recipes is to provide the energy and protein needed for stabilization and catch-up. For stabilization (F-75), it is important to provide a formula with the energy and protein as shown (no less and no more). For catch-up (F-100), the recipes show the minimum energy and protein contents needed.

The first three recipes given for F-75 include cereal flour and require cooking. The second part of the table shows recipes for F-75 that can be used if there is no cereal flour or no cooking facilities. However, the recipes with no cereal flour have a high osmolarity (415 mOsmol/l) and may not be tolerated well by some children with diarrhoea.

The F-100 recipes do not require cooking as they do not contain cereal flour

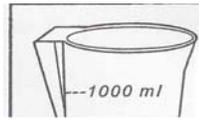
It is hoped that one or more of the recipes can be made in your hospital. If your hospital cannot use any of the recipes due to lack of ingredients, seek expert help to modify a recipe using available ingredients.

Recipes for F-75 and F-100

If you have cereal flour and cooking facilities, use one of the top three recipes for F-75:			
Alternatives	Ingredient	Amount for F-75	
If you have dried skimmed Milk	Dried skimmed milk	25 g	
	Sugar	70 g	
	Cereal flour	35 g	
	Vegetable oil	30 g	
	Mineral mix*	20ml	
	<i>Water to make 1000 ml</i>	<i>1000 ml**</i>	
If you have dried whole milk	Dried whole milk	35 g	
	Sugar	70 g	
	Cereal flour	35 g	
	Vegetable oil	20 g	
	Mineral mix*	20 ml	
	<i>Water to make 1000 ml</i>	<i>1000 ml**</i>	
If you have fresh cow's milk, or full-cream (whole) long life milk	Fresh cow's milk, or full-cream (whole) long life milk	300ml	
	Sugar	70 g	
	Cereal flour	35 g	
	Vegetable oil	20 g	
	Mineral mix*	20 ml	
	<i>Water to make 1000 ml</i>	<i>1000 ml**</i>	
If you do not have cereal flour, or there are no cooking facilities, use one of the following recipes for F-75:			No cooking is required for F-100:
Alternatives	Ingredient	Amount for F-75	Amount for F-100
If you have dried skimmed milk	Dried skimmed milk	25 g	80 g
	Sugar	100 g	50 g
	Vegetable oil	30 g	60 g
	Mineral mix*	20 ml	20 ml
		<i>Water to make 1000 ml</i>	<i>1000 ml**</i>
If you have dried whole milk	Dried whole milk	35 g	110 g
	Sugar	100 g	50 g
	Vegetable oil	20 g	30 g
	Mineral mix*	20 ml	20 ml
		<i>Water to make 1000 ml</i>	<i>1000 ml**</i>
If you have fresh cow's milk, or full-cream (whole) long life milk	Fresh cow's milk, or full-cream (whole) long life milk	300 ml	880 ml
	Sugar	100 g	75 g
	Vegetable oil	20 g	20 g
	Mineral mix*	20ml	20ml
		<i>Water to make 1000 ml</i>	<i>1000 ml**</i>

*Check contents of [mineral mix](#) or alternatively use ready-made *Combined Mineral Vitamin Mix (CMV)*

** *Important note about adding water: Add just the amount of water needed to make 1000 ml of formula. (This amount will vary from recipe to recipe, depending on the other ingredients.) Do not simply add 1000 ml of water, as this will make the formula too dilute. A mark for 1000 ml should be made on the mixing container for the formula, so that water can be added to the other ingredients up to this mark.*



Add water just up to
1000 ml mark.

Mineral mix:

The mix contains potassium, magnesium, and other essential minerals. It **must** be included in F-75 and F-100 to correct electrolyte imbalance. The mineral mix may be made in the pharmacy of the hospital, or a commercial product called *Combined Mineral Vitamin Mix (CMV)* may be used to provide the necessary minerals.

Vitamins:

Vitamins are also needed in or with the feed. Children are usually given multivitamin drops as well. The multivitamin preparation should **not** include iron.

If available, *CMV* may be used to provide the necessary vitamins. If *CMV* is used, separate multivitamin drops are not needed.

Tips for correct preparation of F75 and F100 using other ingredients

- Apply hygiene at all levels
- Mix oil well so that it does not separate. If oil floats to the top of the mixture, there is a risk that some children will get too much and others too little. Use a long hand whisk to thoroughly mix the oil.
- Be careful to add the correct amount of water to **make up 1000 ml of formula**. If 1000 ml of water is mistakenly added, the resulting formula will be about 15% too dilute.
- Needed equipments include: hand whisk (rotary whisk or balloon whisk), a 1-litre measuring jug, a cooking pot, and a stove or hot plate.
- Amounts of ingredients are listed in the table. Cereal flour may be maize meal, rice flour or millet.
- It is important to use cooled, boiled water even for recipes that involve cooking. The water should be cooled because adding boiling water to the powdered ingredients may create lumps.
- The cooking time will depend upon the type of cereal flour to be used and the nature of the heat source. **For cooking:**
 - Mix the flour, milk or milk powder, sugar, oil, and mineral mix in a 1-litre measuring jug (If using milk powder, this will be a paste).
 - Slowly add cooled, boiled water up to 1000 ml.
 - Transfer to cooking pot and whisk the mixture vigorously.
 - Boil gently for 4 minutes, stirring continuously. Maize-flour based recipe should be boiled for longer periods.
 - Some water will evaporate while cooking, so transfer the mixture back to the measuring jug after cooking and add enough boiled water to make 1000 ml. Whisk again.

Pre-packed F75 and F100

They are commercially available and include already all required nutrients

Preparation:

Add one large packet of F75 or F100 to 2 liters of water.

Where very few children are being treated, smaller volumes can be mixed using the red scoop (20 ml water per red scoop or F75/F100 powder)

Close the F75 / F100 sachet appropriately by rolling down the top.