

Severe Malnutrition - Nutritional Treatment.



KEMRI | Wellcome Trust

saving children's lives
ETAT+
Emergency Triage Assessment and
Treatment **plus admission**



University of Nairobi



**KENYA
PAEDIATRIC
ASSOCIATION**

Objectives

- Understand the link between observed pathophysiological abnormalities and treatment.
- Consider the priorities and aims of immediate nutritional management.
- Non-nutritional management is considered elsewhere.

Gentle nutritional rescue – the process of feeding



- Immediate feeding
- Small volume / frequent feeding because of small stomach capacity and precarious physiology
- Vomiting is NOT a contraindication to feeding
- Routine insertion of a naso-gastric tube should be considered
- Feeds are the ‘drug’ to cure malnutrition, they are a priority (after correction of dehydration if required).

First feeding – Prescribing F75

- What is the weight?
- Marasmus
 - 130 ml/kg/day start-up feed
- Kwashiorkor / marasmic kwashiorkor:
 - 100 mls/kg/day start-up feed
- 8 three hourly feeds
- ***.....this means at night too!***

F75 can be made from water, skimmed milk, oil and sugar – it is cheap, recipes are in the book!

Why don't we feed aggressively?

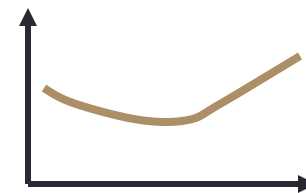
- The body really cannot tolerate more
- Too vigorous re-feeding has been associated with increased mortality.
- Too much sugar can cause an osmotic diarrhoea
- Higher protein contents cannot be handled by the liver
- Salt can make oedema worse and precipitate heart failure.

When to change from F75 ?

- Appetite test
 - If the child is clearly very hungry then use RUTF immediately – ***does this child need to be in hospital?***
- Return of appetite after starting on F75:
 - Usually between 2 – 7 days
 - Transition to F100 or RUTF if available
- Oedema:
 - You do not have to wait for resolution of oedema before changing if the child has a good appetite.
- Feed with cup / cup and spoon



Weight gain in the first week



- F75 feeding is usually NOT associated with weight gain
- Weight loss may even occur in children whose oedema is improving
- Do not panic!
 - Ensure at least 100 mls/kg/day of F75 has been given.
 - Early recovery involves loss of body water (reducing weight) and increases in cellular mass (increasing weight)
- Appetite and activity level denote recovery in the first week, not weight change.

Contents of 100mls of F75 & F100

	F75	F 100
Energy (kcal)	75	100
Protein (g)	1.1	2.9
Lactose (g)	1.3	4.2
Potassium	4.2	6.3
Sodium	0.6	1.9

A feeding plan if seriously ill

Admission

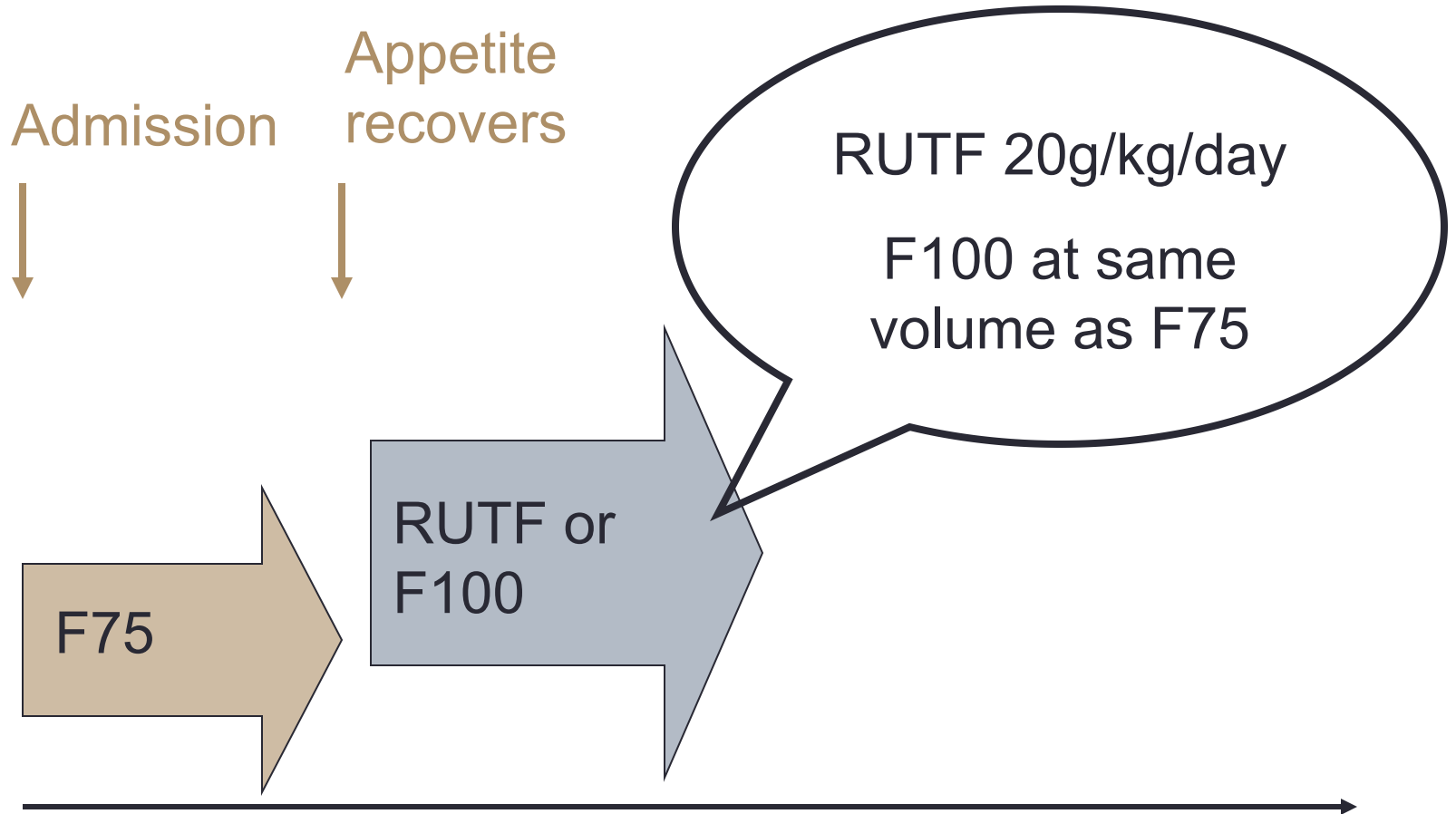


130 or 100
mls/kg/day as 3
hourly feeds, for 2 -
7 days

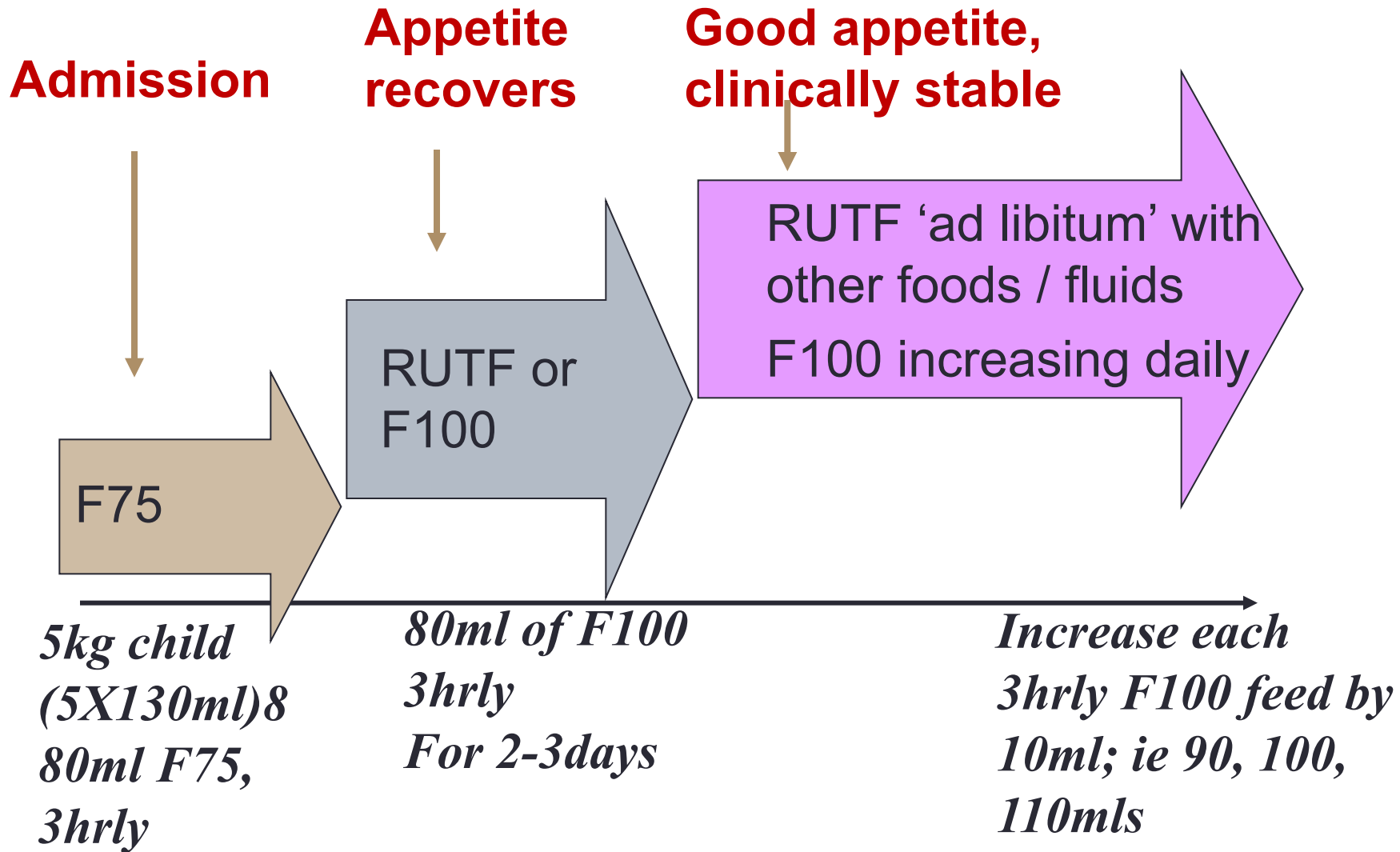
F75



A feeding plan



A feeding plan



Then what?



Rehabilitation

- Introduce solid foods and increase to 5 appropriate meals a day.
- Continue RUTF / snacks in between
- Continue breast feeding
- Start oral iron and mebendazole therapy **after 1 week**
- Monitor progress
- Provide stimulation / play
- Educate the family and prepare for discharge

Monitoring 1

Fever / Hypothermia
Glucose
Respiration
Heart Rate
Weight
Oedema

Fever / Hypothermia
Respiration
Heart Rate
Weight
Oedema

WHZ (<6mo)
MUAC (6-59mo)
Weight



Rescue



Transition



Rehabilitation

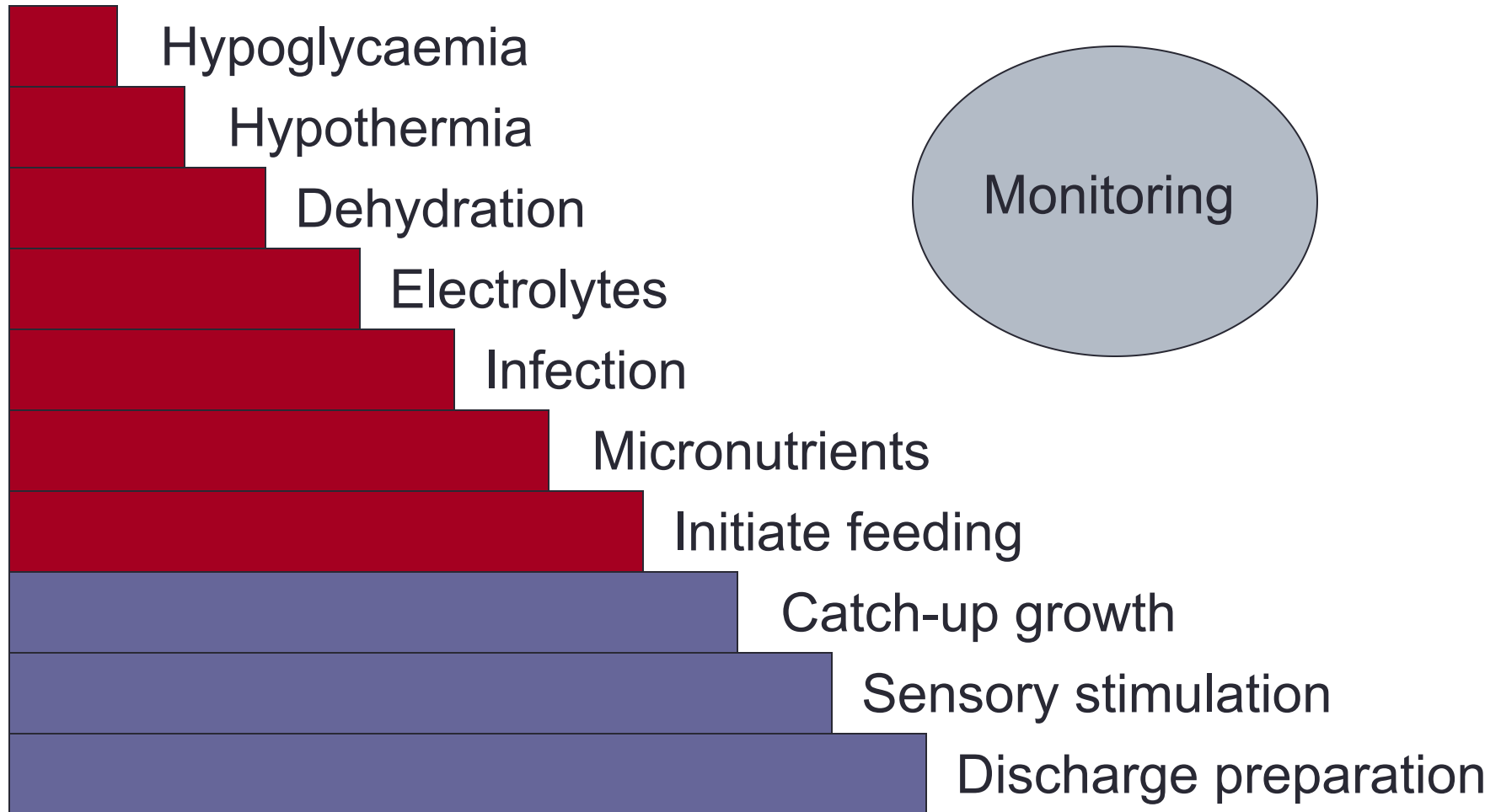
Monitoring 2

- **Feed intake must be monitored** throughout
- If there is concern for heart failure reduce feed amount / volumes for 24 hours.
- Weight gain in recovery / rehabilitation phases:
 - Poor, $<5\text{g/kg/day}$, full re-assessment
 - Moderate, $5 - 10\text{g/kg/day}$, check intake adequate, is there untreated infection
 - Good, $>10\text{g/kg/day}$

When to discharge?

- Completed antibiotics
- Medical complications have resolved
- Good appetite and gaining weight
- Lost any oedema
- Appropriate support in the community or home
 - Should discharge on RUTF
- Mother / carer:
 - Available
 - Understands child's needs
 - Able to supply needs

10 Step Approach



QUESTIONS?

Summary

- The rescue phase of nutritional support requires gentle introduction of calories and small amounts of protein.
- Pre-manufactured F75, F100 and RUTF are used because they contain adequate potassium, vitamins and ideally other minerals.
- Recovery feeding starts as the appetite returns and is gradually scaled up.