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Enteral and Parenteral Nutrition Feeding Protocol on the Adult Critical Care Unit

A guide for Doctors and Nurses during the COVID-19 outbreak

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Introduction

Due to the large anticipated increase in the number of patients requiring artificial nutrition support it may not be possible for the dietitians to assess all patients in a timely manner. Please commence patients on the following red stream enteral feeding regimen and refer to the dietitian. Should you have any concerns regarding the regimens please contact the dietitian.

Department of Nutrition and Dietetics Contact Details

	Bronglais Hospital	Glangwili Hospital	Prince Philip Hospital	Withybush Hospital
Department Contact Number	**01970 635730**	**01267 227067**	**01554 783061**	**01437 773357**
Critical Care Dietitian Bleep	**3122**	**793**	**792**	**2362**
Acute Dietitian Bleep	**3123**	**212 / 267**	**791**	**2361**
Nutrition Clinical Nurse Specialist	**James Taylor 07971255809**	**Linda Broomfield 07974242735**		**Jenny Forrest 07584590479**

Enteral Nutrition

All ventilated patients should be commenced on Nasogastric (NG) feeding within 24-48 hours of admission to provide nutrition and partial/complete hydration. Please see the red stream enteral feeding regimen. The feeding regimen will be suitable for patients who are at high risk of refeeding syndrome, but if a patient at high risk is less that 40kg, seek telephone advice from the dietitian. For patients identified as high risk (see below table), the ICU team will need to consider prescribing Pabrinex (Pabrinex vials I&II once a day for 5-10 days).

Refeeding risk:

One or more of the following	2 or more of the following
• BMI <16kg/m²	• BMI <18kg/m²
• Unintentional weight loss >15% within the last 3-6 months	• Unintentional weight loss >10% within the last 3-6 months
• Very little to no nutrition for >10 days	• Very little or no nutrition for >5 days
• Low concentrations of potassium, magnesium or phosphate prior to feeding	• A history of alcohol abuse or drugs including insulin, chemotherapy, antacids or diuretics

Please use clinical judgement when assessing refeeding risk.

Strategies to improve enteral feeding tolerance:

- Consider use of prokinetics, e.g. metoclopramide and/or erythromycin, unless contraindicated. Efficacy declines after 2-3 days when prescribed alone, or after 6 days

when prescribed as a combination. Routine use of prokinetics is not recommended unless signs of feed intolerance are present (refer to red stream regimen). Significant side-effects can occur with use of either prokinetic (seek advice from pharmacy).

- Consider use of laxatives if no bowel motion, where there is no contraindication.
- Reduce use of opiates where possible.
- Consider patient positioning. Ensure head of patient is elevated to 30 to 45 degrees where possible.
- Consider post-pyloric access for feeding.
- Control hyperglycaemia if present - can delay gastric emptying.
- Correct abnormal electrolytes and avoid hypokalaemia, where possible.

Proning

If a patient need to be nursed in a proned position, NG feeding should be continued unless there are concerns regarding gastrointestinal intolerance, refer to the red stream regimen.

Other enteral feeding considerations

Blood glucose levels:

- If enteral feeding is stopped for any reason (e.g. proning, extubating etc), ensure insulin infusion is adjusted if this is being given, and monitor blood glucose levels closely.

Non Invasive Ventilation:

- Patients that have been extubated to NIV are likely to have poor oral intake and NG feeding should be continued until they have been assessed and are managing sufficient oral intake.

Feeding Pumps:

- Due to a limited amount of feeding pumps available across the health board please ensure only one pump is used for each patient.

Fluid Management:

- If additional enteral water is required consider increasing pre and post feed and medication water flushes or request the team to prescribe additional water flushes during the day.

<u>Parenteral nutrition</u>

Parenteral nutrition is only to be commenced if enteral nutrition is not tolerated. PN should be considered after 7-10 days if unable to meet >60% of nutritional requirements via EN. Initiating supplementary PN prior to this in critically ill patients does not improve outcomes and may be detrimental to the patient.

A supply of Kabiven 5 bags will be available on the critical care units. **Do not issue any PN bags to the general wards.** Kabiven 5 can be given via a peripheral or a central line. For patients who may need to progress onto Kabiven 11, this can only be given via a central line. **Ensure the Red Stream Parenteral Nutrition Regimen is completed prior to commencing PN.**

All patients on day 4 of the regimens (Enteral and Parenteral) need to be referred to the Dietitian, verbal referrals will be accepted and advice will be provided by telephone. If nutritional plans need to be amended this will be given verbally to the nurse and a copy of the plan will be provided as agreed locally (e.g email, fax, deliver to agreed pick up point).

The Dietitian should be contacted sooner if a patient:

1. Has a diagnosis of Pancreatitis
2. Has been diagnosed with an acute Kidney Injury requiring filtration, particularly if hyperkalaemia or fluid restriction if filtration is unavailable.
3. Has sodium levels of >160mmol/l or require a lower volume feed
4. Is requiring large volumes of Propofol >20ml/hour

Adult Critical Care Unit Red Stream Enteral Nutrition Regimen

Commence Enteral Nutrition at 20mls/hour of NUTRISON PROTEIN PLUS

Monitor GRVs (NG aspirates) every 4 hours
Is enteral nutrition tolerated?

Yes

Increase the rate of feed by 10mls every 24 hours until a target rate of 50mls/hour is achieved

Day 1 will provide 460mls, 575kcal, 29g protein

Day 2 will provide 690mls, 863kcal, 44g protein

Day 3 will provide 920mls, 1150kcal, 58g protein

Day 4 will provide 1150mls, 1438kcal, 72g protein

Ensure feed is stopped for 1 hour daily to check NG tube position and pH of aspirate is documented

No

Gastrointestinal Intolerance: 3 consecutive NG aspirates of >200mls

- Consider prokinetics
- Continue feed at current rate

A further 3 aspirates >200mls

- Reduce rate of feed to 10mls/hour
- Consider changing feed to Nutrison Peptisorb and increase feed as per regimen
- If continued intolerance (>48-72 hours) to consider Nasojejunal Feeding / Parenteral Nutrition

Adult Critical Care Unit Red Stream Parenteral Nutrition Regimen

PN is only to be commenced if advised by a consultant and below form has been signed. Please ensure TPN has been prescribed on the IV fluid prescription chart by team.

Patient Details (Addressograph)	**Ward**
Name: Address: Post Code: DOB: NHS No/Hospital Number:	**Consultant**

Indication for Parenteral Nutrition			
	Intestinal Obstruction		Inflammatory Bowel Disease
	Intestinal Failure		Severe Pancreatitis
	Short Bowel		Inadequate Enteral Nutrition
	Radiation enteritis		Oral Mucositis
	Surgical Complications e.g. anastomotic leak, adhesions, fistula		

Likely duration of PN	5-14 days	14-28 days	>28 days
Route of Administration	Central Line	Peripheral Line	

PN Regimen

Regimen					**Composition**			
Day/Stage	**PN Bag**	**Volume**	**Rate**	**Duration**	**Energy**	**Protein**	**Sodium**	**Potassium**
1	**Kabiven 5**	**360ml**	**15 ml/hour**	**24 hours**	250kcal	8.4g	8mmol	6mmol
2	**Kabiven 5**	**720ml**	**30 ml/hour**	**24 hours**	500kcal	16.9g	16mmol	12mmol
3	**Kabiven 5**	**1080ml**	**45 ml/hour**	**24 hours**	750kcal	25.3g	24mmol	18mmol
4	**Kabiven 5**	**1440ml**	**60 ml/hour**	**24 hours**	1000kcal	33.8g	32mmol	24mmol

Doctor Name:	Signature:	Date: