Nutrition support in ITU and HDU

1. Adult Critical Care Nutrition Pathway
2. Dietitian referrals *** new for March 2020 ***
3. Refeeding syndrome
4. Starting enteral feeds: checking the pH of gastric aspirates
5. Nutrition Protocols *** new for March 2020 ***
6. Types of enteral feeds
7. Post-oesophagectomy patients
8. Useful nutrition policies on the Intranet

For further advice/ information please contact the Dietitians:

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Brighton and Sussex University Hospitals NHS Trust – Adult Critical Care Nutrition Pathway

Aim to start feeding within 48 hours of ICU admission

Consider if your patient is at risk of refeeding syndrome: follow Trust Protocol

Please weigh patient if possible

Is patient suitable for enteral feed?

YES

Can the patient maintain their own oral intake?

YES

- Encourage oral diet and offer snacks between meals
- Prescribe 2 x Fortisip Compact Protein (FCP) daily, even if patient is eating well
- Commence food chart
- **Consider NG feeding if oral intake is inadequate**

NO

- Place nasogastric tube (NGT) if appropriate to do so
- Check NGT is correctly positioned before use. Re-check at least every 24 hours. (Complete NG care bundle)
- Start Nutrison Protein Plus feed using the **weight-based PROTOCOL 1 in the red Nutrition Folder**
- Aspirate NGT after 4 hours

Is gastric residual volume >350mls?

YES

- Replace 200 ml of aspirate and maintain rate
- Check aspirate after 4 hours

Is aspirate >350 ml?

Yes?

- Replace 200ml of aspirate
- Reduce rate by 25 ml/hr, to a minimum of 10 ml/hr
- Recheck aspirates in 4 hours

Is aspirate >350 ml?

YES?

- Replace 200 ml of aspirate. **Initiate prokinetics** after three high (>350ml) aspirates
- 1st line: metoclopramide 10mgs IV TDS [Unlicensed Indication] . After 4 doses metochlopramide consider adding:
- 2nd line: Erythromycin 250mgs IV for maximum 4 doses [Unlicensed Indication]
- Consider: NJ tube and small bowel feeding or TPN

NO

- Replace aspirate and increase rate by 25 ml/hr every 4 hours until goal rate is achieved. At target this provides 25 kcal/kg/day
- Maximum feeding rate for all patients = 105 ml/hr
- **Rate is based on patient's admission weight to ITU (for BMI ≤ 25) or on ideal bodyweight (for BMI > 25)**

YES

Aspirate 6 hourly for 48 hours

Is aspirate >350mls

NO

- NG feeding is now continuous
- Stop feed for 4 hours before procedures
- Stop feed for 2 hours pre & post NG phenytoin

NO

Is enteral feeding contraindicated?

Are you unable to establish enteral feeding?

YES

- Start 11 g Kabiven TPN using the **weight-based TPN PROTOCOL in the red Nutrition Folder**.
- Use a dedicated, labelled central line or PICC port

- Unless contraindicated, maintain trophic NG feed at 10 ml/hour

- When suitable for enteral nutrition, reduce the TPN rate by 25 ml/h as the EN rate increases by 25 ml/hr
- Stop TPN when maximal EN rate achieved
- See Parenteral Nutrition Policy on Intranet

Remember to ask your patient/their family:

- What were you/they eating and drinking for the 5-10 days prior to admission?
- Any unplanned weight loss?
- Any nausea and/or vomiting?
- Any diarrhoea?
- Any food allergies and/or intolerances?
- Any favourite foods/drinks/snacks?

These important questions will help you assess refeeding risk, as well as getting to know your patient's likes/dislikes.

Dietetics referral criteria

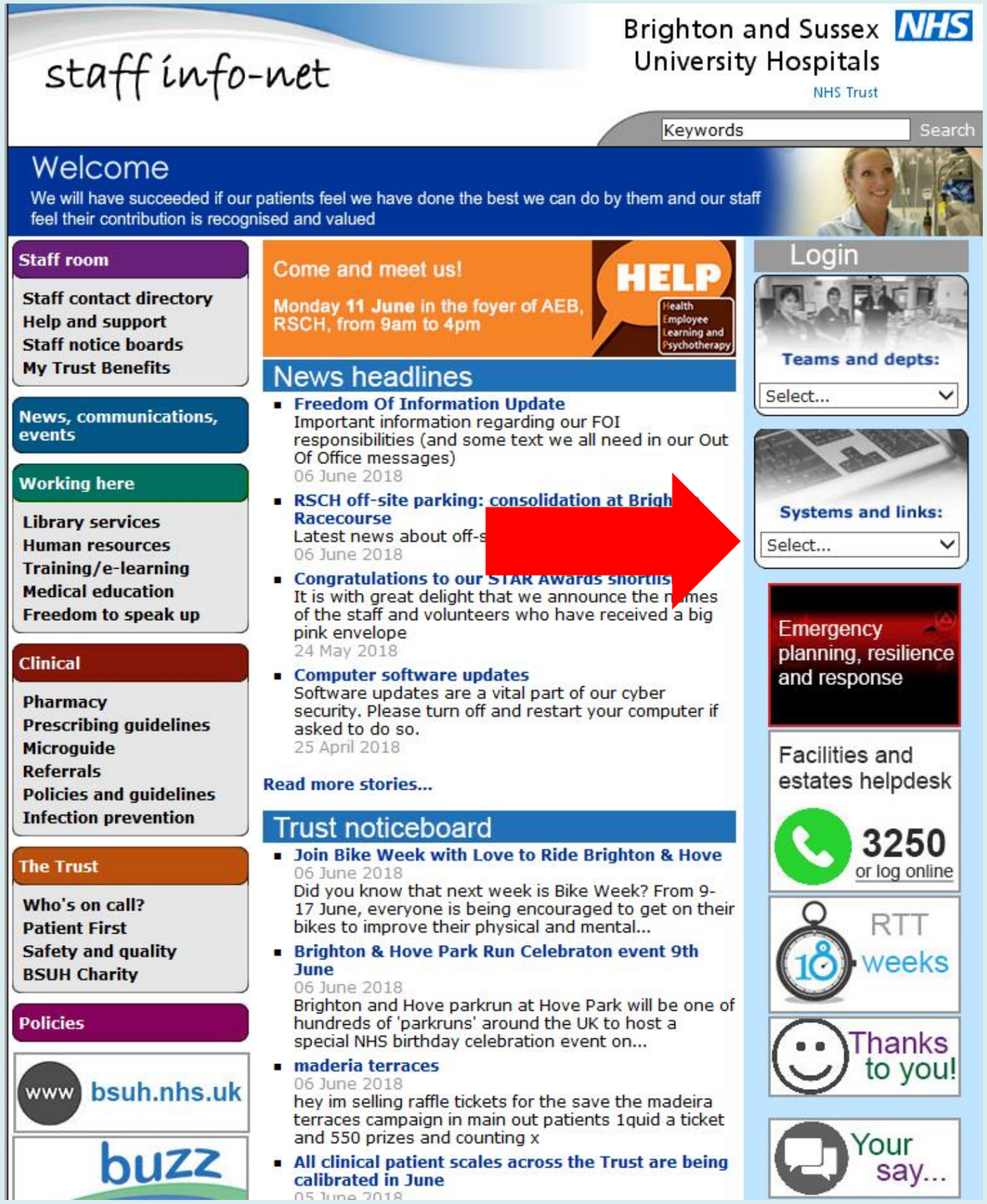
As standard, please start all NG/TPN patients on the appropriate feeding Protocol (see Nutrition Protocols, slide 8).

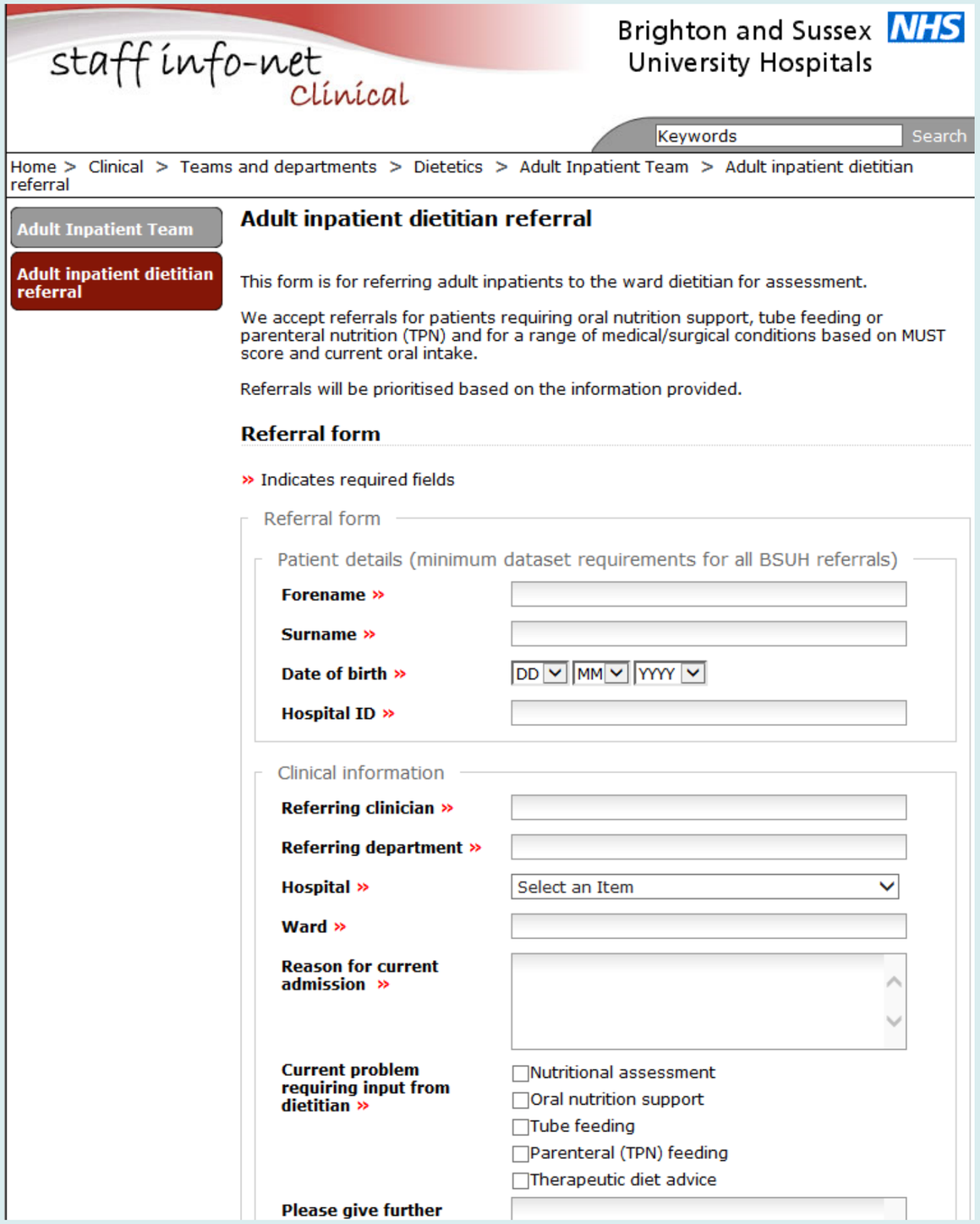
Only refer a patient to the Dietitians if you feel the Protocols are not appropriate for their needs.

For any patient requiring an individualised nutrition plan, please refer as usual on the Intranet (see next slide). Examples of patients who may need an individualised plan:

- Those with oral/enteral feed problems e.g. consistently high gastric residual volumes (GRVs) despite prokinetics, malabsorption, dysphagia (+/- NG feeding).
- On feeding, serum phosphate drops significantly. Refeeding hypophosphatemia is defined as PO4 < 0.65 mmol/L or a drop of > 0.16 mmol/L (ensure Pabrinex is prescribed).
- Those with short bowel syndrome /high output stoma (>1500ml/24 hours)
- Patients receiving continuous renal replacement therapy
- Patients with burns / polytrauma / decompensated liver disease/ high grade pressure ulcers

Dietitian referral





Risk of Refeeding Syndrome

Patients are at risk of refeeding syndrome if they have had little or no nutrition for more than 5 days

In addition, other factors, may put your patient at high risk of refeeding syndrome

Other factors to consider that may put your patient at high risk of refeeding syndrome:

1) Has your patient experienced unplanned weight loss?
2) Does your patient have a low BMI?
3) Does your patient have low potassium / phosphate / magnesium
4) Does your patient have a history of alcohol abuse or drugs including insulin, chemotherapy, antacids or diuretics?

Patients who should be considered at high risk of refeeding

One or more of the following:

- Little or no nutritional intake for more than 10 days
- BMI < 16
- Unintentional weight loss of more than 15% within the previous 3-6 months.
- Low K, Mg, PO4 prior to feeding

Two or more of the following:

- Little or no nutritional intake for more than 5 days
- BMI < 18.5
- Unintentional weight loss of more than 10% within the previous 3-6 months.
- History of alcohol abuse or drugs including insulin, chemotherapy, antacids or diuretics

Patients who should be considered at severe risk of refeeding

- BMI <14
- Little or no intake for more than 15 days

References: NICE: CG32 Nutrition support in adults (2006), BSUH Refeeding Protocol

BSUH Flowchart for confirmation of nasogastric tube position in critically ill adults

Aspirate NG tube, check pH:

1. On insertion of a new NGT/reinsertion of NGT
2. At least once per shift and if you suspect tube displacement. **Stop feed, wait 30 mins, aspirate**
3. Before re-starting feed and/or giving water flushes/medications if feed is off

pH 5.0 or below → **Proceed to NG feed**

Unable to aspirate NGT →

1. Roll patient onto their left side and give mouthcare. Wait 30 minutes and re-aspirate. *If still unable to aspirate:*
2. Inject 10-20 ml of air into the tube and re-aspirate. *If still unable to aspirate:*
3. Advance tube by 5-10 cm and re-aspirate.

If no aspirate obtained: → **X-Ray NGT**

pH 5.1 or above → **STOP FEED, wait 30 mins and re-aspirate**

pH 5.0 or below → **Proceed to NG feed**

pH 5.1 or above

New NGT? → **X-Ray NGT**

Existing NGT? →

- Has NGT length at nose changed?
- Any reason to suspect tube displacement?
- Any signs of clinical deterioration?
- Previous pH (in last 24 hrs) 5.1 or above

If no, discuss with Medical Team or Critical Care ACCP. They must DOCUMENT if NG feed can re-start, or what alternative action is required.

IF SIGNS OF DETERIORATION or change in tube length/placement/previous pH in last 24 hrs was 5.1 or above INFORM MEDICAL TEAM

NGT checks to be documented at least once each shift

- **pH**
- **NGT length at nose**

Nutrition Protocols

Oral nutrition support

As standard, for all patients able to eat and drink (with no texture restrictions), give : 2 x Fortisip Compact Protein (600 kcal, 36g protein) each day. Please prescribe on Metavision/on paper chart.

Enteral nutrition support

A pH check of the gastric aspirate must be done for all NG-fed patients at least once every 24 hours. If pH > 5.0 or no aspirate obtained, use the flowchart on the previous page to seek advice/take action.

Gastric residual volume (GRV) cut off is 350ml (return 200ml) – further details on **Adult Critical Care Nutrition Pathway** flowchart.

There are 4 enteral feeding protocols, with printed feeding regimens for Protocols 1,2 and 3 (see next page). Specific instructions for each protocol, including allergen advice, are on the reverse of the printed regimens.

Parenteral nutrition support

The single TPN protocol uses 11g Kabiven bags. Infusion rates are the same for TPN bags +/- micronutrients (there is only a 20ml difference between bags).

Nutrition Protocols

Enteral nutrition support

There are 4 enteral feeding protocols, with printed feeding regimens for Protocols 1,2 and 3 in the Critical Care Nutrition Folder. Specific instructions for each protocol, including allergen advice, are on the reverse of the printed regimens. Printed regimens are provided in the Critical Care Nutrition folder for weights 30-100kg (at 5 kg intervals).

Protocol 1: PROTEIN PLUS feed

A standard high protein regimen. All NG fed patients should be started on Protocol 1 unless directed by the ITU/HDU team or by the Dietitians.

Protocol 2: NUTRISON CONCENTRATED feed (+/- PROSOURCE TF)

Only to be used for patients requiring a reduced volume/reduced potassium feed. **Do not start this protocol without first speaking to the ITU/HDU team and/or the Dietitians.**

Protocol 3: LOW SODIUM feed (+/- PROSOURCE TF)

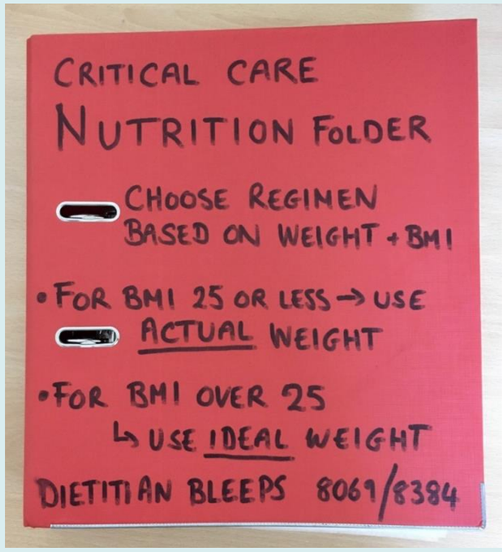
Only to be used for patients with hypernatraemia that cannot be treated with additional NG water. **Do not start this protocol without first speaking to the ITU/HDU team and/or the Dietitians.**

Protocol 4

Individualised regimen, Dietitians to assess, advise and provide a hand-written regimen (i.e. no pre-printed regimens).

TPN Protocol

The single TPN protocol uses 11g Kabiven bags. Infusion rates are the same for TPN bags +/- micronutrients (there is only a 20ml difference between bags). **Do not start this protocol without first speaking to the ITU/HDU team and/or the Dietitians.**



Nutrition Protocol: how to choose a regimen

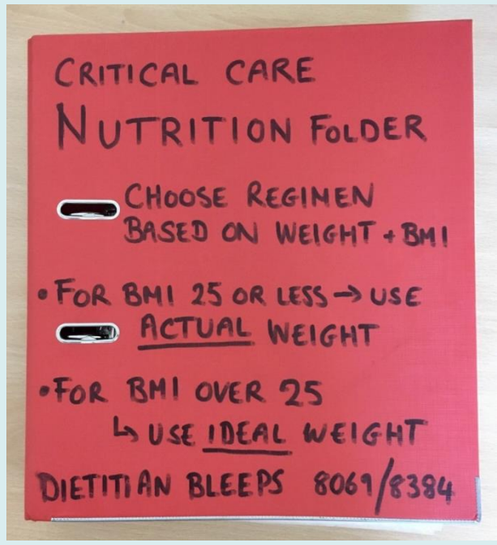
How to select the correct regimen

The choice of feeding regimen is based on weight and BMI:

- **If BMI is 25 or less, select the weight-based feeding regimen based on your patient's ACTUAL weight.**
- **If BMI is over 25, select the select the weight-based feeding regimen based on your patient's IDEAL weight.**

Changing between different feeding Protocols

- **The kcal provision for each day of feeding is the same across each NG Protocol and TPN Protocol (e.g. Day 3 kcal on Protocol 1 = Day 3 kcal on Protocol 2)**
- **So if feeding has reached Day 3 on Protocol 1, you can switch to the same day of another Protocol and carry on kcal progression from there.**



Why do these regimens increase nutrition provision gradually?

Regimens increase to a target of 25 kcal/kg over a week. This is in line with the ESPEN guidelines (2019) and **aim to avoid over-feeding in the first week of critical care**.

This also makes the regimens appropriate for use in patients with high refeeding risk (there is now no separate regimen for patients at high risk of refeeding syndrome).

Assessment for risk of refeeding syndrome should still be carried out before feeding, and treatment given as per the Trust's Refeeding Protocol.

Types of enteral feeds 1

Feed	Characteristic	Energy (kcal/ml)	Protein (g/100ml)	Na (mmol/L)	K (mmol/L)
Nutrison Standard		1.0	4.0	43.5	38.5
Protein Plus	Starter feed	1.25	6.3	48.3	43.1
Nutrison Energy	High energy feed	1.5	6.0	58.3	51.5
Nutrison Concentrated	Low volume feed	2.0	7.5	43.4	46.2
Nutrison Soya	Dairy free	1.0	4.0	43.5	38.5
Peptamen	MCT*-rich peptide feed	1.0	4.0	32.2	21.1
Peptamen HN	MCT*-rich peptide feed, high protein	1.33	6.6	39.1	42.2
Peptamen AF	MCT*-rich peptide feed, high protein	1.5	9.4	43.5	22.5
Nutrison Low Sodium	Low in sodium	1.0	4.0	10.9	38.5
Nutrison MCT*	MCT* feed	1.0	5.0	43.5	38.5

Notes

- All feeds except Nutrison Soya (and Nutrison Soya Multifibre) contain milk proteins. If your patient has a milk protein allergy, use Nutrison Soya. Nutrison Soya provides fewer kcal and less protein than Protein Plus. Refer the patient to the Dietitian as the nutrition care protocol feed rates will not be applicable.

- All Nutrison feeds are gluten and lactose free (but contain milk protein). Nutrison feeds are also Halal certified.

- Peptamen HN, Peptamen AF and Peptamen: Gluten free. Made using an enzyme that is non-Halal/Kosher. Clinically nil lactose.

- ProSource TF is gluten, milk, and lactose free and is Halal certified. This product may not be suitable for vegetarians and other groups due to processing of some of the ingredients - contains beef derivatives.

- All feeds except Nutrison Low Sodium, Nutrison Soya (and Nutrison Soya Multifibre) contain fish oils. If your patient is vegetarian, check in their notes/with relatives whether they would find fish oils acceptable in a feed.

- If your patient is vegan, no feeds perfectly fit this dietary choice. Nutrison soya does not contain milk proteins or fish oils, but the vitamin D in this product is prepared from the wool of healthy living sheep.

* MCT: medium chain triglyceride

Types of enteral feeds 2

Feed	Characteristic	Energy (kcal/ml)	Protein (g/100ml)	Na (mmol/L)	K (mmol/L)
Nutrison Standard		1.0	4.0	43.5	38.5
Protein Plus	Starter feed	1.25	6.3	48.3	43.1
Nutrison Energy	High energy feed	1.5	6.0	58.3	51.5
Nutrison Concentrated	Low volume feed	2.0	7.5	43.4	46.2
Nutrison Soya	Dairy free	1.0	4.0	43.5	38.5
Peptamen	MCT*-rich peptide feed	1.0	4.0	32.2	21.1
Peptamen HN	MCT*-rich peptide feed, high protein	1.33	6.6	39.1	42.2
Peptamen AF	MCT*-rich peptide feed, high protein	1.5	9.4	43.5	22.5
Nutrison Low Sodium	Low in sodium	1.0	4.0	10.9	38.5
Nutrison MCT*	MCT* feed	1.0	5.0	43.5	38.5

- **Avoid changing to Low Sodium feed unless absolutely necessary**
  - The saving is only 30-40 mmol/L Na for most feeds. If possible, consider additional NG water rather than changing to Low Sodium feed
  - 1500 kcal of Protein Plus = 58 mmol Na, 1500 kcal of Low Sodium = 16 mmol Na
  - Low Sodium feed is lower in protein: 1500 kcal of Protein Plus = 76g protein, 1500 kcal Low Sodium = 60g protein
- **Check other Na sources (IV fluids/medications)**
  - 0.9% NaCL = 154 mmol/L, Hartmans = 131 mmol/L, 0.18% NaCl 4% dextrose = 31 mmol/L

* MCT: medium chain triglyceride

Enteral feeds: allergen and cultural information

NUTRISON RANGE: ALLERGENS & CULTURAL DIET INFORMATION

Product Name	Contains								Suitable for			
	Gluten	Wheat	Egg	Fish Products	Milk	Nuts	Soya	Lactose	Vegetarians	Vegans	Kosher	Halal
Nutrison	×	×	×	✓	✓	×[1]	✓	×[2]	×[3]	×[3,4,7]	✓[5]	✓[6]
Nutrison Multi Fibre	×	×	×	✓	✓	×[1]	✓	×[2]	×[3]	×[3,4,7]	✓[5]	✓[6]
Nutrison Energy	×	×	×	✓	✓	×[1]	✓	×[2]	×[3]	×[3,4,7]	✓[5]	✓[6]
Nutrison Energy Multi Fibre	×	×	×	✓	✓	×[1]	✓	×[2]	×[3]	×[3,4,7]	✓[5]	✓[6]
Nutrison Energy Multi Fibre Vanilla	×	×	×	×	✓	×[1]	✓	×[2]	✓	×[4,7]	✓[5]	✓[6]
Nutrison 800 Complete Multi Fibre	×	×	×	✓	✓	×[1]	✓	×[2]	×[3]	×[3,4,7]	✓[5]	✓[6]
Nutrison 1000 Complete Multi Fibre	×	×	×	✓	✓	×[1]	✓	×[2]	×[3]	×[3,4,7]	✓[5]	✓[6]
Nutrison 1200 Complete Multi Fibre	×	×	×	✓	✓	×[1]	✓	×[2]	×[3]	×[3,4,7]	✓[5]	✓[6]
Nutrison Advanced Protison	×	×	×	✓	✓	×[1]	✓	×[2]	×[3]	×[3,4,7]	✓[5]	✓[6]
Nutrison Protein Plus	×	×	×	✓	✓	×[1]	✓	×[2]	×[3]	×[3,4,7]	✓[5]	✓[6]
Nutrison Protein Plus Multi Fibre	×	×	×	✓	✓	×[1]	✓	×[2]	×[3]	×[3,4,7]	✓[5]	✓[6]
Nutrison Concentrated	×	×	×	✓	✓	×[1]	✓	×[2]	×[3]	×[3,4,7]	✓[5]	✓[6]
Nutrison Low Sodium	×	×	×	×	✓	×[1]	✓	×[2]	✓	×[4,7]	✓[5]	✓[6]
Nutrison Peptisorb	×	×	×	×	✓	×[1]	✓	✓	✓	×[4,7]	✓[5]	✓[6]
Nutrison Soya	×	×	×	×	×	×[1]	✓	×[2]	✓	×[4]	✓[5]	✓[6]
Nutrison Soya Multi Fibre	×	×	×	×	×	×[1]	✓	×[2]	✓	×[4]	✓[5]	✓[6]
Nutrison MCT	×	×	×	×	✓	×[1]	✓	×[2]	✓	×[4,7]	✓[5]	✓[6]

[1] To the best of our knowledge following confirmation by our suppliers, our ingredients do not contain nuts or nut products. [2] Lactose level below 300mg/kg. [3] Product not suitable as it contains fish oils. [4] Product not suitable as vitamin D is prepared from the wool of healthy living sheep. [5] Nutricia has kosher approval for these products. [6] Certified by the Halal Food Council of Europe. [7] Product not suitable as it contains milk.

* MCT: medium chain triglyceride

Oral nutrition: allergen and cultural information

ORAL NUTRITIONAL SUPPLEMENT RANGE: ALLERGENS & CULTURAL DIET INFORMATION

Product Name	Contains								Suitable for			
	Gluten	Wheat	Egg	Fish Products	Milk	Nuts	Soya	Lactose	Vegetarians	Vegans	Kosher	Halal
Fortisip Compact	x	x	x	x	✓	x[1]	✓	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[7]
Fortisip Compact Fibre	x	x	x	x	✓	x[1]	✓	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[7]
Fortisip Compact Protein	x	x	x	x	✓	x[1]	✓	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[7]
Fortisip 2kcal	x	x	x	x	✓	x[1]	✓	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[7]
Fortisip Extra	x	x	x	x	✓	x[1]	✓	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[7]
Fortisip Bottle	x	x	x	x	✓	x[1]	✓	x[2]	✓[6]	x[4,6,9]	✓[5,8]	✓[7]
Fortijuce	x	x	x	x	✓	x[1]	x	x[2]	✓	x[4,9]	✓[5]	✓[7]
Fortisip Yogurt Style	x	x	x	x	✓	x[1]	trace	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[7]
Forticreme Complete	x	x	x	x	✓	x[1]	x	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[8]
Complan Shake	x	x	x	x	✓	x[1]	x	✓	✓	x[4,9]	✓[5,8]	✓[8]
Scandishake Mix	x	x	x	x	✓	x[1]	✓	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[8]
Calogen	x	x	x	x	x	x[1]	x	x[2]	✓[6]	✓[6]	✓[5,8]	✓[7]
Calogen Extra	x	x	x	x	✓	x[1]	x	x[2]	✓[6]	x[4,6,9]	✓[5,8]	✓[8]
Calogen Extra *Shots*	x	x	x	x	✓	x[1]	x	x[2]	✓[6]	x[4,6,9]	✓[5,8]	✓[8]
Renilon 7.5	x	x	x	x	✓	x[1]	trace	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[7]
Nutricia preOp	x	x	x	x	x	x[1]	x	x[2]	✓	✓	✓[5]	✓[7]
FortiCare	x	x	x	✓	✓	x[1]	trace	x[2]	x[3]	x[3,4,6,9]	✓[5,8]	✓[7]
Respifor	x	x	x	x	✓	x[1]	✓	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[7]
Nutilis Clear	x	x	x	x	x	x[1]	x	x	✓	✓	✓[5]	✓[8]
Nutilis Powder	x	x	x	x	x	x[1]	x	x	✓	✓	✓[5]	✓[8]
Nutilis Complete Drink Level 3	x	x	x	x	✓	x[1]	✓	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[8]
Nutilis Complete Creme Level 3	x	x	x	x	✓	x[1]	✓	✓	✓[6]	x[4,6,9]	✓[5,8]	✓[8]
Nutilis Fruit Level 4	x	x	x	x	✓	x[1]	✓	x[2]	✓[6]	x[4,6,9]	✓[5,8]	✓[8]
Protifar	x	x	x	x	✓	x[1]	✓	✓	✓	x[3]	✓[5]	✓[8]
Polycal Powder	x	x	x	x	x	x[1]	x	x[2]	✓	✓	✓[5]	✓[8]
Polycal Liquid	x	x	x	x	x	x[1]	x	x[2]	✓	✓	✓[5]	✓[7]
Super Soluble Maxijul	x	x	x	x	x	x[1]	x	x[2]	✓	✓	✓[5]	✓[8]

[1]To the best of our knowledge following confirmation by our suppliers, our ingredients do not contain nuts or nut products. [2]Lactose level below 300mg/kg. [3]Product not suitable as it contains fish oils. [4]Product not suitable as vitamin D is prepared from the wool of healthy living sheep. [5]Nutricia has kosher approval for these products. [6]Except for those flavours which contain carminic acid. [7]Certified by the Halal Food Council of Europe. [8]These products do not contain any ingredients that are forbidden in the Halal diet; however, the manufacturing process is not observed by the relevant religious body so they do not have official Halal certification. [9]Product not suitable as it contains milk.

Oesophagectomy: Enhanced Recovery Protocol (ERP)

- Post-oesophagectomy patients on the ERP will have an ERP care booklet in their notes.
- They will be fed on day 2 post op (unless stated otherwise by the surgeons) via their jejunostomy (jej) feeding tube
- Note that the jej feed used is Nutrison (1 kcal/ml), not Protein Plus (1.25 kcal/ml)

Date/Day	Feed	Volume (ml)	Rate (ml/hr)	No. of Hours	Rest Period	Comments (additional fluid/flushes)
Day 2 post-op	NUTRISON (1.0 kcal/ml)	600	25	24	0	**Flush with _____mls of sterile water pre & post feed**
Day 3 post-op	NUTRISON (1.0 kcal/ml)	1200	50	24	0	**Flush with _____mls of sterile water pre & post feed**
						Flush with _____mls of sterile water pre & post feed **Feed from _____hours until _____ hours**

- See the ERP protocol for notes on feeding and jej tube care.
- **Refer all post-oesophagectomy patients to the Dietitian.**

Policy to Reduce Harm Caused by Misplaced Nasogastric Feeding Tubes for Adults (Policy number C035)

https://nww.bsuh.nhs.uk/clinical/clinical-policies-and-guidelines/clinical-and-medicines-management-policies

Brighton and Sussex University Hospitals NHS Trust

Appendix 4

Guideline notes for confirming the correct position of nasogastric feeding tubes in critically ill ADULTS on BSUH Intensive Care Units

Notes	Rationale
Types of nasogastric tube	**Corflo sizes** 8F – 12F Suitable for feeding and drug administration (NPSA compliant) **Ryles tube** sizes 8-14F Suitable for gastric drainage and short term feeding only.
NG Tube Fixation devices (Nasogastric bridles)	The NGT should be taped to the nose or fixation devices may have been used in patients from theatre. Nasal bridle – May be used where appropriate if a patient has removed more than 2 NGTs. This should be a consultant decision and must be documented clearly in the notes. The bridle must be inserted by someone trained in the procedure.
A) Check for signs of tube displacement	Documenting the external length of the tube initially and checking external markings prior to feeding will help to determine if the tube has moved. **Corflo tubes have cm markings**, and the distance at the nose should be documented daily. Check that mouth is free of coiled tube. **Ryles tubes should be observed very carefully as the length is difficult to document accurately and the tube may migrate. For this reason, the Corflo tube is preferred for feeding and drugs.**
B) Obtain radiographic confirmation of initial tube placement	Confirmation of the tube should be done by appropriately trained clinician and **documented in the notes prior to commencement of feed.** Document the tube length from the nose or mouth immediately after radiographic confirmation.
C) Aspirate	Injecting air down the tube prior to aspiration should clear the tube of debris and or feed. Aspirates from small bowel feeding tubes are usually less than 10ml, an increase up to 50 ml or higher suggest the tube is in the stomach. **CAUTION there have been reports of large volumes of aspirate from tubes that have been located in the lungs** (Kauffman et al 2001).
D) Record pH levels	Apply aspirate to an area on pH testing paper. Allow ten seconds for any colour change to occur. Ensure you use colour chart on the box supplied. Record pH level.
E) Aspirate is pH 5 or below	Commence feed according to BSUH Critical Care Nutrition pathway
F) Aspirate pH 5.1 or above	• Check the tube length is the same as documented when tube position initially confirmed by pH or x-ray. • Medication may increase the pH level of gastric contents e.g. antacids, H2 antagonists or PPIs e.g. pantoprazole/ lansoprazole. • Dilution of the gastric acid by the enteral feed may cause pH>5 **Stopping the feed for up to 1 hour** may allow time for the gastric pH to fall. **CAUTION: Ensure the insulin infusion is turned off while the feed is stopped.** If inconclusive consider the following options: • Consider replacement of tube or x-ray confirmation of placement. • Do not feed before thorough risk assessment and team discussion, document decision and rationale.
G) Problems obtaining aspirate?	Use the larger size tubes (e.g. size 10 or 12)
H) Turn adult onto their side	This will allow the tip of the nasogastric tube to enter the gastric fluid pool.
I) Inject 10-20ml of air using a syringe.	Injecting air through the tube may dislodge the exit-port of the nasogastric feeding tube from the gastric mucosa. **This is NOT a testing procedure: Auscultation of air ('whoosh' test) does NOT confirm tube position**
J) Advancing the tube	If the tube length is <60 cm it may not be in the stomach. Try advancing the tube by 5-10cm to allow it to pass into the stomach and re-aspirating. **Document the length of tube if moved.**

Useful Trust Policies and Guidelines available on the Intranet

- Management of diabetes during enteral feeding - guidelines
- Blood glucose monitoring guidelines
- BMI chart for 100kg - 170kg
- C082 Enteral feeding tube policy
- Enteral feeding tube aftercare forms
- High output stoma protocol
- MUST tool
- Oncology dietitian referral form
- Out of hours gastrostomy regimen
- Out of hours nasogastric regimen
- Paediatric policies and protocols
- Parenteral Nutrition policy
- Nutrition and Hydration Policy
- Refeeding protocol
- Administering drugs via enteral feeding tubes - guidelines
- Insertion and management of enteral tubes - guidelines
- Management of enteral feeding complications - guidelines