

Adult Enteral Nutrition Guidelines

Key Points

- Tube feeding; NG/NJ care plan, PEG/RIG, balloon gastrostomy
- Tube feeds
- Trouble shooting for tube feeds
- Out of hours enteral feeding guidelines
- Misplaced/dislodged gastrostomy tube
- Stoma stoppers

These guidelines are intended for use cross-site at Frimley Park and Wexham Park Hospitals. There are some differences with products used at each site, therefore please ensure that the section you refer to is appropriate for your hospital site.

Version: 1.0
Date Issued: 20/11/2025
Review Date: 01/09/2028
Key words: Nutrition, NG, NGT, NG feeding, NJ, PEG, RIG, refeeding syndrome, nasogastric, nasojejunal, enteral feeding, out of hours

This is a controlled document. If you are using a printed copy, check it against the guidelines site to ensure you are using the latest edition. Print copies must be destroyed after use.

Abbreviations

ANTT	Aseptic non touch technique
CANH	Clinically assisted nutrition and hydration
EN	Enteral nutrition
Fr/FG	French gauge/ size of tube lumen
JEJ	Jejunostomy
MDT	Multi-disciplinary team
NETRD	Naso-Enteral Tube Retaining Device
NG (T)	Nasogastric (tube)
NJ (T)	Nasojejunal (tube)
ONS	Oral nutrition supplement
PEG	Percutaneous endoscopic gastrostomy
RIG	Radiologically inserted gastrostomy

Table of Contents

Introduction	3
Objectives.....	3
1. Nutrition Support Team	3
2. Nasogastric (NG)Tube Insertion and Care	6
3. Nasojejunal/Jejunostomy Tube Insertion and Care	9
4. Gastrostomy Tube Insertion and Care	12
5. Enteral Feeding	17
5. Enteral Feeding Troubleshooting	18
6. Infection Control Guidelines for The Tube Fed Patient	24
6. Enteral Feeding and Medicines.....	27
7. Transition From Tube Feeding to Oral Intake.....	31
References.....	32
Appendix 1: Troubleshooting for Nasogastric and Nasojejunal feeding	35
Appendix 2: Out of Hours Feeding Regimen for NGTs and Gastrostomy Tubes (PEG/RIG) Pump Feeding – Cross site	37
Appendix 3: Emergency Nasojejunal Feeding and Refeeding Regimen:.....	40
Appendix 4: Post Jejunostomy Insertion Feeding Protocol	43
Appendix 5: Post Peg/Rig Insertion Protocol – Cross Site	44
Full version control record.....	45

Introduction

BAPEN 2016 have stated *at least 25-34% of patients admitted to hospital are at risk of malnutrition*. Stroud et. al. (2003) found that undernutrition may impair immunity, wound healing, muscle strength and psychological drive. Malnutrition can increase the risk of complications with medical and surgical interventions and may increase length of stay in hospital with increased costs.

Hospitals should aim to provide adequate nutrition to all patients, with some patients requiring enteral nutrition (EN) via a tube to help meet their nutritional requirements.

Aims

To provide clear guidelines, ensuring safe and effective management of enteral feeding, to help patients maintain or improve their nutritional status and help prevent weight loss throughout Frimley Health NHS Foundation Trust.

Objectives

- To enhance the knowledge and understanding of tube feeding
- To promote safe and effective enteral feeding practice
- To increase the effectiveness and efficiency in enteral feeding
- To improve continuity of care
- To encourage greater multidisciplinary liaison
- To improve quality of service to patients
- To encourage audit and provide up-to-date information and references
- To promote evidence-based practice

1. Nutrition Support Team

The Nutrition Support Team consists of a multi-disciplinary team usually comprising of a Nutrition Consultant, Dietitian, Nutrition Nurse and Pharmacist. The makeup of these teams will depend on each site.

The team review patients with complex nutritional problems and offer support and guidance around nutritional decisions to ensure patients receive optimal nutrition support. This may include decisions around starting clinically assisted nutrition and hydration (CANH) and long-term feeding plans.

A nutrition ward round happens occurs weekly/twice weekly.

If you require input from the nutrition support team please refer as below:

Referral to WPH Nutrition Support Team via Epic or in conversation with the dietitians involved in the patients care.

Referral to FPH Nutrition Support Team - please create an Epic order to the dietitians. All patients on PN will be seen on the nutrition ward round.

Dietitian and Enteral Nutrition Clinical Nurse Specialist (CNS) Contact details:

Dietitians Telephone numbers	
FPH	WPH
134053	153232
Enteral Nutrition CNS Telephone numbers	
FPH	WPH
139087	151394
07393240680	07775008920 / 07393265825
Enteral Nutrition CNS Names for Epic Message	
FPH	WPH
Alejandra Moledo	Krishna Patel
Wendy Bell	Maria Cristina Andrei
Lynette Chinyani	

CANH

Supporting and encouraging oral intake is the first line of advice for nutrition support. Clinically assisted nutrition and hydration (CANH) may be appropriate for those who are unable to swallow or have insufficient oral intake. For those with a functioning gastrointestinal tract, enteral nutrition should be considered before parenteral nutrition. Further information on parenteral nutrition can found within 'Adult parenteral nutrition guidelines' available on the intranet.

Decisions for CANH should be undertaken by the MDT and consider, as a minimum;

- diagnosis and anatomical factors,
- individual preference,
- aim of nutrition and anticipated timeframe,
- benefits and risks of treatment and should not negatively affect quality of life.

The goals of CANH may include:

- complete provision of nutrition
- supplement provision of nutrition along oral nutrition
- protection of airway due to partial or complete dysphagia
- decrease in discomfort/symptoms (partly because medication can be given)
- improvement in quality of life
- increase in weight (if the patient is underweight)
- improvement of wound healing
- reduced infections
- meeting hydration needs

- increasing energy levels to optimise nutritional status and possibly better the prospect for rehabilitation
- improvement of confusion which may occasionally result in the return of mental capacity

Nasogastric or Nasojejunal tubes can be used to support short term acute use of enteral based CANH. Enteral tubes required for longer term nutrition require invasive procedures and complex decision making and assessments. Advice should be sought from the Nutrition Support Team/ward-based MDT for specialist assessment and guidance on the appropriateness of long-term tube placements. The document, 'Guidelines for the Selection and referral of patients for consideration for long term feeding tube insertion' is available on the intranet and provides further information.

If, despite dietetic interventions and adjustments to the regimen, the agreed and documented aims of CANH are not being met for a sustained period of time, the burdens/risks of treatment may then start to outweigh the benefits of treatment. This will mean a referral back to the consultant, to discuss the tube being removed.

2. Nasogastric (NG)Tube Insertion and Care

Nasogastric Tube Placement and confirming placement	Nasogastric feeding is the most commonly used enteral route and is suitable for short-term use. 8-10 Fr fine bore tubes are recommended on all wards cross site. Any sizes above these can be used on ITU. Fine bore tubes can be used for feeding and to measure gastric residual volumes (GVS), however if continuous drainage is required, then a separate Ryles tube will be required for this drainage. See Trust Guideline 'Insertion and on-going care of nasogastric feeding tubes in adults', July 2025. Documentation of NG positions and feeding regimens on the ward should be documented within NG/NJ Feeding tube care sheet on Epic As per the NG/NJ feeding tube care sheet, the tube position must be checked in the following circumstances as: • At initial insertion • Before starting feed • Before giving medication or water if patient is on a break from feeding • If the patient complains of discomfort or feed reflux into the throat or mouth • At least once daily for continuous feeds (this is supported practice in critical care settings) • Following episodes of vomiting, retching or coughing (note that the absence of coughing does not rule out misplacement or migration) • After suctioning via an endotracheal or tracheotomy tube • If there are any new or unexplained respiratory symptoms or reduction in oxygen saturation • When there is evidence of tube displacement, e.g., length of tube at nostril is less than previously documented or securement device has loosened	Rollins H (1997). A Nose for Trouble. Nursing Times 93(49) 66-67. NICE Guidelines CG32 (2006) M. Patient Safety Alert (2005). National Patient Safety Agency – Reducing the Harm Caused by Misplaced Nasogastric Feeding Tubes. Tait J (2001). Going Nasogastric: Current Thinking in Nasogastric Tube Techniques. Complete Nutrition 1(2) 27-29. Patient Safety Alert (2011). National Patient Safety Agency – reducing form etc. Patient Safety Alert (2005). Reducing the Harm Caused by Misplaced Nasogastric Feeding Tubes. NHS National Patient Safety Agency. Metheny N, Meert K (2004). Monitoring Feeding Tube Placement. Nutrition in Clinical Practice (19) 487-495.
--	---	---

PH testing of the tube aspirate is the first line method for confirming nasogastric tube position. All pH checks must be independent 2 person checks by staff who have attended the NG study day and achieved the competencies, or have been educated on tube management. Refer to the NG/NJ feeding tube care sheet on Epic for further advice on troubleshooting and pH testing (Appendix 1). If a patient is taking a proton pump inhibitor (PPI) and there is difficulty obtaining an aspirate below pH 5.0, try giving the PPI at the same time the feed starts and not in the rest period.

Chest x-rays (CXR) are second line method for confirming placement. The request must state the purpose of the image is to review NG tube position. The review of the CXR must be by 2 competent Drs, one of them being a senior doctor (SHO or above). The review must be documented in the medical notes using the Trust NG tube CXR proforma found on Epic by searching through smart text "FHFT Ward/ICU NG tube x-ray confirmation checklist" and adding this to Epic notes. Verbal confirmation is not to be accepted. CXR will not be performed overnight for NG tube position. CXR results should be reviewed within 2 hours of CXR being completed.

If repeated CXR's have been required to confirm position, please refer to Enteral Nutrition CNS for advice.

Critical Care

Please refer to National Patient Safety Agency Guideline 'Confirming the Correct Position of Nasogastric Feeding Tubes in Adults in the Critical Care Setting' as within Trust Guideline 'Insertion and on-going care of nasogastric feeding tubes in adults', July 2025.

It is acknowledged that within ICU a risk assessment may be required when NG position cannot be confirmed with a pH check, to support safe feeding practices. For further information please refer to 'Intensive Care Unit Nutrition Guidelines' on the intranet.

Tait J (2001). Going Nasogastric: Current Thinking in Nasogastric Tube Techniques. Complete Nutrition 1(2) 27-29.

Metheny N et al. (1994). pH Testing of Feeding-Tube Aspirates to Determine Placement. Nutrition in Clinical Practice (9) 185-190.

Stroud et al. BSG, Gut (2003). 52

Frequency of Changing NG Tube	Follow manufacturer's guidance according to tube product – usually 90 days. Nasogastric tubes should not be re-used as they are single use only items.
Feeding via a Nasogastric Tube	- Nasogastric feeding can start when tube placement is confirmed. Refer to the tube feeding order on Epic for the feeding regimen for Nasogastric and Nasojejunal tubes. This order would have been placed on Epic by the dietitian. The enteral feeding regimen can also be found within the dietitians note on Epic. - All enteral feeds should be documented on a input/output flowsheets on Epic. - Freshly drawn tap water can be used for all NG fed patients, unless immunocompromised where it would be recommended to use sterile water <u>Out of hours Regimens</u> If initiating NG feeding <u>out of hours</u> and the patient has not yet been assessed by a Dietitian please refer to out of hours regimens on the intranet. <u>'Out of hours Feeding Regimen for NGTs and Gastrostomy tubes (PEG/RIG) for Adults'</u> – cross site (Appendix 2) If the patient is on the Intensive Care Unit please refer to the separate 'Intensive Care Unit Nutrition Guidelines' on the intranet, where out of hours feeding regimen for ICU can also be found.

3. Nasojejunal/Jejunostomy Tube Insertion and Care

Insertion of Nasojejunal Tube	Nasojejunal feeding is a method of post pyloric feeding. NJ feeding could be considered for - patients at high risk of aspiration due to positioning, e.g., spinal injury, or patients in traction - if NG feeding is unsuccessful/problems with delayed gastric emptying There are 3 methods for Nasojejunal placement used within the Trust; 1. Bedside placement – Cortrak (please refer via Epic to Enteral nutrition Clinical Nurse Specialist. Suitable for most patients, but not suitable for patients with certain conditions including Upper GI cancer or obstruction, abnormal stomach anatomy i.e. gastric bypass or partial/total gastrectomy etc, who will require radiology/endoscopy placement. 2. Endoscopy - position to be confirmed at placement. Alternative double or triple lumen tubes are available for endoscopic placement which allow gastric aspiration alongside jejunal feeding. Inform Enteral Nutrition Clinical Nurse Specialists and ward dietitian. 3. Radiology can be used and position confirmed at placement. Inform Enteral Nutrition Clinical Nurse Specialists and ward dietitian. All referrals for Nasojejunal tube placement must be made on Epic and discussions made with the appropriate team	
Frequency of Checking Nasojejunal Tube Placement	The NJ tube should be securely taped to the face at the nose and the cheek Measurement to nostril should be measured daily and checked prior to each use and documented on Epic on the Avatar/flowsheet. If a longer length of tube is visible than previously documented, this may indicate that the tube is not correctly positioned. Contact Enteral Nutrition CNS within working hours (working hours – Monday-Friday 8.00-16.00) or medical team out of working hours for further advice. Do not feed until correct tube placement is confirmed by x-ray, stating for purpose of NJ post pyloric position confirmation. Do not check position via aspiration and pH checking as there is no acid pool in the jejunum.	Cottee S (2002). Jejunal Feeding. Complete Nutrition pg. 32-34
Insertion of Jejunostomy Tubes	Placed surgically and held in situ with sutures. Skin integrity needs to be monitored and the site kept clean and dry. If sutures become displaced, they must be reapplied. Any concerns, please contact the Enteral Nutrition CNS	

Flushing a Nasojejunal / Jejunostomy Tube	Due to the length and size of a nasojejunal tube they are at high risk of blocking. Flush every 4-6 hours with 30-50ml sterile water, whether tube is used for feeding or not. Flush with sterile water before and after every feed. Flush with sterile water before and after medication. Use 10ml sterile water between each individual medication.	
Feeding via Nasojejunal / Jejunostomy Tube	• Refer to the tube feeding order on Epic or dietitian's note on Epic to initiate the enteral feeding regimen as per Dietitian recommendations. • All enteral feeds given should be documented on the input output flowsheet on Epic <u>Out of hours Regimens</u> If initiating NJ feeding <u>out of hours</u> and the patient has not yet been assessed by a Dietitian please refer to separate out of hours NG and NJ regimens <u>'Emergency NJ Feeding and Refeeding Regimen for Adults'</u> – cross site (Appendix 3) <u>OR</u> For Surgical JEJ follow 'Post jejunostomy insertion feeding protocol' FPH (Appendix 4)	
Frequency of Changing a Nasojejunal Tube	All NJ tubes used within the Trust may remain in place for 3 months. Surgical jejunostomy tube usually last approximately 12 months and this is reviewed regularly on an individual patient basis.	

4. Gastrostomy Tube Insertion and Care

Indications for Gastrostomy	Used for long-term enteral feeding. Please refer to the guidelines for selection and referral of patients for consideration for gastrostomy insertion (March 2025).
Referral Process cross site	Referral should be made to Enteral Nutrition CNS or Nutrition Team for assessment for suitability of gastrostomy. This will take into consideration a range of factors including current and past medical conditions, surgery and quality of life. Placement of gastrostomy is a decision which requires open discussion about the risks and benefits and should involve the patient, the MDT and family or carers where appropriate. Please ensure referrals are timely to ensure best outcomes. This assessment process may take some time and will require discussion with the family as well as the MDT and gastroenterology team. The patient will then be started on the Gastrostomy Care Pathway if appropriate.
Gastrostomy Insertion	Either in Endoscopy (PEG) or Radiology (RIG) or a surgically placed gastrostomy.
Post Gastrostomy Placement Feeding Regimen	Refer to Appendix 19 as below: 'Post PEG/RIG Insertion Protocol – cross site' (Appendix 5)

Care Following Initial Stoma Formation	The following applies to PEG and RIG. The site should be cleaned daily and treated as a surgical site for the first 14 days. Surgical dressing applied after the procedure to be removed after 24 hours, use a sterile foam dressing underneath the external fixation device only if clinically indicated. Review of the dressing and site inspected daily. Bathing is not advised for the first 14 days. Patients can have shower after 48 hours, as long as the site looks clean and dry. It is important that the tube position remains static, but not tight, for the first 14 days to allow the tract to form. Gastropexy sutures used for RIG placement dissolve in 2-3 weeks. Site must be cleaned daily, paying attention to the area under the base plate. Balloon water volume should not be checked until gastropexy sutures are removed/dissolved. If the sutures have not dissolved within 2-3 weeks, arrangements should be made for their removal. After day 14, tubes should be advanced and rotated daily to avoid buried bumper (see manufacturer's guidelines and refer to Enteral Nutrition CNS).	Fresenius Kabi Guide for Patients and Carers Freka PEG. FHFT NHS Foundation Trust – Care of Freka PEG Tube Leaflet (updated September 2018). Vygon (UK) Ltd 2010. NNNG Good Practice consensus Guidelines Sept 2013
Stoma Problems - Infection	Infection can be minimised by daily cleaning and drying of stoma and retention plate. If infection is suspected, send a swab of the site. Avoid commencing antibiotics until infection confirmed or patient is clinically unwell. Refer to Enteral Nutrition CNS if concerns.	Pendlebury J (1997). Feeding by PEG. Community Nurse, May p11-12. NNNG Good Practice Consensus Guidelines, Sept 2013

Stoma Problems - Over granulation	Refer to Enteral Nutrition CNS for management	Pendlebury J (1997). Feeding by PEG Community Nurse, May p11-12.
Frequency of Checking the Balloon Water in Balloon Retained Tubes	Follow manufacturer's guidelines. This should be checked weekly. If unsure how to do this, please refer to the Enteral Nutrition CNS. Volume of water removed and replaced should be documented in the medical notes. This requires the healthcare professional to advance the tube approximately 5-7cm. Remove the water using a 10ml syringe on the balloon port (if no water is withdrawn this may indicate that there is a leak and that the device needs changing. Refer to Enteral Nutrition CNS for advice. Replace the water with manufacturer's recommended volume of sterile water if in hospital. In the community cooled, boiled water. Check manufacturer's instructions for individual devices.	
Frequency of Changing Tubes	PEG tubes can last approximately 3 years. Balloon gastrostomy tubes can last approximately 4 months. Tube replacement and patency will be reviewed on an individual basis. The agreed consensus within the trust is to replace the PEG tube only in cases of recurrent site issues that are no longer manageable, or when the tube's structure or function is compromised to the point of being unusable.	
What to do when a Gastrostomy falls out	The action taken will depend on the length of time a stoma has been formed: If during working hours contact the Enteral Nutrition CNS urgently. <u>Less than 3 months</u> - refer patient back to the Enteral Nutrition CNS. <u>More than 3 months</u> – try to put tube or a stomastopper back in and refer to the nutrition support nurse. If a gastrostomy tube falls out then it should be replaced as soon as possible, preferably within 2-4 hours, as the stoma will start to close.	NPSA Rapid Response Early Detection of Complications After Gastrostomy (2010) Frimley Park Hospital Post Procedural Care and Management of Complications Post Gastrostomy Insertion. Version 3 (2016)

	If out of hours; **Frimley Park Hospital** ED and F9 both have emergency kit boxes with spare tubes and advice. **Wexham Park Hospital** The GI (within working hours), ED PEG trolley and W3 unit stocks spare gastrostomy tubes. Need to refer to medical team out of hours and make appropriate referrals as required. (cross site) Stoma stoppers and spare gastrostomy tubes are available from the emergency gastrostomy trolley located in A&E treatment room and the Gastroenterology ward (out of hours) as well as GI unit (during working hours).	
Discharge Planning at Frimley Park Hospital	Dietitians require a minimum of 2 working days' notice, prior to discharging a patient on enteral feeding. More notice of discharge is appreciated especially if a patient is returning to their own home to enable the patient to feel confident on the use of equipment or if the patient is out of area. If the patient is 'out of area' 5–7 days' notice is required to ensure training and liaison with other dietitians and feed companies. The dietitian will: • Arrange training for the patient/carer on the use of equipment, setting up feed, flushing the enteral tube and infection control with the Enteral Nutrition CNSs and/or specialist nurses from feed companies • Liaise/contact relevant community personnel, e.g., community nurses, carers • Give patient written instructions and contact telephone numbers • Liaise with community dietitians if the patient is discharged 'out of area' • Advise Nutrition Support Nurses of discharge to ensure appropriate follow up is arranged. • Support the patient/carer and re-iterate advice provided by the Nutrition Specialist Nurse/ specialist nurses from feed companies on how to flush the enteral feeding tube, how to care for the enteral feeding tube and stoma site Frimley Park Hospital	

	- Dietitians will provide a pump, stand for home a supply of giving-sets, syringes, feed and other ancillaries and arrange future deliveries Wexham Park Hospital - Nursing staff will provide giving-sets, feed and syringes. The amount of these that need to be provided will be advised by the dietitians. Dietitians will provide a pump and stand for home.
Emergency gastrostomy/jejunostomy regimens	If patients are admitted from the community with gastrostomy feeding tubes, ideally the patients regimen will be handed over when the patient is admitted. If this is the case and the feed on the regimen is available in the trust or feed is sent with the patient, this regimen should be followed, providing the tube is safe to use. If the regimen is not available. Please refer to <u>Out of hours Regimens</u> If initiating NJ feeding <u>out of hours</u> and the patient has not yet been assessed by a Dietitian please refer to separate out of hours NG and NJ regimens <u>'Out of hours Feeding Regimen for NGTs and Gastrostomy tubes (PEG/RIG) for Adults'</u> – (Appendix 2) <u>OR</u> 'Post jejunostomy insertion feeding protocol' cross site (Appendix 4)

5. Enteral Feeding

Allergen and cultural diet information can be found on the manufacturer's website.

For support with allergies and cultural information in dietetic working hours please contact the dietitians.

There are feed options suitable for both vegetarian and vegan patients. Please follow the out of hours guidance on this in dietitians' absence.

Patients with Diabetes

Patients requiring enteral feeding with pre-existing diabetes should be referred to the diabetes specialist nurses at the earliest opportunity. Most patients with diabetes will experience a rise in their blood glucose levels when they commence enteral feeding. Diabetes medications and insulin regimens will need to be reviewed and frequent monitoring of blood glucose levels undertaken. For further detailed guidance on this please refer to Frimley Health's 'Guidelines for enteral feeding of patients with diabetes in hospital'.

5. Enteral Feeding Troubleshooting

Securing of Nasogastric and Nasojejunal Tubes	
Tape	Tubes shouldn't cause the patient any discomfort or irritation. This can be ensured by appropriate securing of the tube: • Check for any skin allergies to plaster etc. Secure tube to cheek • Run the tube along the line of the patient's cheek and secure at nose and cheek using appropriate tape, such as 3M, hypafix, Grip Lok etc. • Tuck the tube behind the patient's ear • Secure the tube to the same side of the face as the nostril from which it is placed • Place pump on same side of bed as tube is inserted to avoid accidental removal • Monitor skin for signs of pressure damage from the tube. These techniques should prevent the tube irritating the patient and keep it out of their eye range.
Mittens	Some patients may continue to find the tube irritating and continue to pull at it. Try to establish the reason why the patient is finding the tube problematic. It could be because the tube has become dislodged internally and therefore irritating the throat, in which case it will need re-siting. It may also be that the patient may no longer wish to be fed this way. If this is the case it should be discussed with the patient, family and medical team and possible issues around capacity discussed. The use of Mittens may prevent removal of the nasogastric/nasojejunal tube. Please refer to the Mental Capacity Act and Deprivation of Liberty Standards Policy (MCA/DOLS) on the intranet for the assessment and use of mittens.
Nasal-Enteral Tube Retention Device (NETRD)	The nasal retention device allows the nasogastric/nasojejunal tube to be secured more definitively than with other measures but does not reduce the risk of internal migration caused by coughing, retching or suctioning etc. You do not need to apply for DOLS to use these devices. For patients that lack capacity, DOLS and mittens should be in place prior to consideration of NETRD. If it is felt that a NETRD may be required, this should be discussed with the patient, family and medical team. It should not be used as a method of enforcing feeding where the patient has capacity to make such a decision as to refuse treatment. During working hours, patients must be referred to the Enteral Nutrition CNS for assessment and placement of NETRD. For further information on placement or care of retention device, please refer to the Enteral Nutrition CNS.

Use of Water in Enteral Feeding Tubes	Hospital Freshly drawn tap water should be used to flush enteral feeding tubes, except; - Immunocompromised patients - Jejunally fed patients Community Cooled boiled water should be used. Cooled, boiled water should be kept in clean containers and discarded after 24 hours. Reconstituting Feeds Sterile water should be used to reconstitute hospital feeds. Naso-jejunal/Jejunostomy Sterile water should always be used in the hospital. Cooled, boiled water should be used in the community unless patient is immuno-compromised patients. Immuno-compromised patients Require sterile water in hospital/community.	Anderton, A (2000) Microbial Contamination of Enteral Tube Feeds – How Can We Reduce the Risk? Nutricia Clinical Care ICNA (2003). Enteral Feeding – Infection Control Guidelines. Nutricia Clinical Care. High impact intervention enteral feeding care bundle, July 2011 NICE CG 139 (March 2012) Community and primary care Enteral feeding for adults and children in a non-acute setting, Berkshire Healthcare, Jan 2020
Flushing Enteral Feeding Tubes	Regular flushing of enteral feeding tubes will help to reduce the risk of blockage. Flush the tube with water: • Before commencing feed (refer to Dietitian's feeding regimen) • When feeding has finished (refer to Dietitian's feeding regimen) • Before administering medicines (30-50mls) • Between each medicine (5-10mls) • After medicines have been given (30-50mls) • NJ and jejunostomy tubes should be flushed 4-6 hourly with 30ml sterile water during continuous feeds and during rest period or flush as stated in Dietitian feed regimen.	Kohn-Keeth, C (2000). How to Keep Feeding Tubes Flowing Freely. Nursing 30 (3) 58-59. ICNA (2003). Enteral Feeding – Infection Control Guidelines. Nutricia Clinical Care.

	Flush volumes may vary depending on the patient's individual fluid needs. This will be indicated by the Dietitian on the feeding regimen Size of Syringe for Flushing 50ml single-use syringe. No adaptations should be made to enteral feeding tubes i.e. 3-way taps, to accommodate non-enteral attachments and syringes.	White and Bradnam (2011) Handbook of drug administration via enteral feeding tube 2nd Ed. Pharmaceutical press: London NPSA alert 19 March 2007.
Managing blocked NGTs	If an NGT is blocked then this should be removed and the tube replaced.	Kohn-Keeth, C (2000). How to Keep Feeding Tubes Flowing Freely. Nursing 30(3) 58-59.
Managing blocked NJTs and Gastrostomies	If the tube is newly placed and there is an issue with blockage, follow the steps below: - Endoscopy/IR should flush the tube after the procedure to confirm it is not kinked. - Request an AXR to check for kinking if the patient is in a clinical area and the NJ tube is not functioning after insertion. - If a kink is detected, retract the tube by 5-10 cm or more depending on the kink's location, ensuring the tube remains post-pyloric. - Liaise with the Enteral Nutrition CNS during working hours or the on-call gastro team outside of hours. Blockages should not happen if the tube is always flushed as instructed, however to clear a blocked tube: • Try to aspirate any contents first Gently squeeze/roll (or 'milk') blocked section of tube between finger and thumb to try and disperse any blockage • Try to flush with warm water (not hot). • Use a push-pull action with the syringe to try and help move the blockage If no success: • Try carbonated soda water in 50ml syringe, this can be obtained from the kitchen. If still no success try: If blockage persists keep trying to unblock the tube every 20-30mins	BAPEN Guidelines on drug administration via enteral feeding tubes (www.bapen.org.uk) Frankel E, Enow N, Jackson K & Kloiber L (1998). Methods of Restoring Patency to Occluded Feeding Tubes. Nutrition in Clinical Practice 13 129-131. Colagiovanni L, (2000). Preventing and Clearing Blocked Feeding Tubes. Ntplus (96) 17. 3-4.

	If after 4 hours the tube is still blocked, contact the Enteral Nutrition CNS or the Dietitians. If unavailable, contact the patient's doctor. Please ensure IV fluids are requested if the patient is reliant on tube feeding for hydration. Do not reinsert guide wire due to risk of perforation. Do not use cranberry juice, cola or pineapple juice as they are acidic and may contribute to tube degradation or further blockage. Do not use a syringe size smaller than 10ml, this will cause an increased pressure within the tube and may cause it to burst, potentially inside the patient.	
Patient Positioning During Feeding	The patient must be at a minimum of 30-45 degree angle during feeding and for at least an hour after feed has stopped. If patients are unable to be positioned in this way, i.e., due to spinal injury, it may be necessary to consider post-pyloric feeding in order to reduce the risk of reflux and aspiration.	American Gastroenterological Association (1995). Medical Position Statement: Guidelines for Use of Enteral Nutrition. 1280-81.
Feeds and Pumps	<u>Frimley Park Hospital</u> Feeding pumps are kept in Rowan House with some emergency feed stock. Contact Site Manager if no feed is available in Rowan House. Contact your Dietitian on the next working day to review feed regimen. <u>Wexham Park Hospital</u> Feeding pumps are available from the medical devices department. Each ward should have their own stock of enteral feeds. If no stock is available, please order required feed through planet FM and collect from main kitchen by 3pm if required that day. Contact your Dietitian on the next working day to review feed regimen. For enteral feed pump trouble shooting see information on the side of each pump, contact medical devices during the working day or contact pump company helpline number on the side of the pump.	

Delivery of Bolus Feeds	Bolus feeding refers to a volume of feed given over a short space of time, i.e., 15-20 mins for about 200mls of feed, usually administered via a syringe. Follow the feed regimen written by your Dietitian. Please refer to bolus feeding tutorial video found on the intranet for further guidance	
Delivery of Continuous Pump Feed	Flow rate is continuous using an enteral feeding pump, following the feeding regimen written by your Dietitian. A 'rest period' will usually be included, refer to enteral feed pump manufacturers guidelines for information on setting up pumps.	
Mouth Care	Continue to brush teeth a minimum of twice a day. Good mouth care is essential for the prevention of HAP (Hospital Acquired Pneumonia).	Health Education England (2016) Mouth Care Matters: A guide for hospital healthcare professionals. Version 12.

Causes and Management of Gastrointestinal Disturbances During Feeding

Nausea and Vomiting during feeding	• Stop the feed immediately if vomiting occurs • Check that the feed rate is not being given more quickly than is recommended by your Dietitian • Check that the feeding position is correct (i.e., not lying too flat, ensure at least a 30 degree angle for feeding) • If NG fed – ensure the tube is not displaced by checking for coiling in the mouth and measurement to nostril • Optimise anti-emetics and address constipation if this is an issue. • Give a rest period of 1 hour post vomit • Prior to recommencing feed, inform clinical team and dietitian if in hours to further advice on feeding rate • If the Dietitian is not available and the doctors are happy to recommence feed, halve the feed rate until dietetic review • If feed is being administered via an NGT, DO NOT recommence feed until position has been confirmed • If a patient is vomiting, these losses should be documented on the Fluid Balance Chart • Ensure adequate IV fluids to prevent dehydration if vomiting is persistent
Bloating, Fullness or Discomfort during feeding	• Check that the feed is not being given more quickly than is recommended by the Dietitian • Check feed is not too cold, feed should be given at room temperature • Contact the Dietitian for advice if problem persists • If the Dietitian is not available halve the feed rate until dietetic review • Ensure adequate fluids to prevent dehydration Zimmaro Bliss D & Lehmann S (1999). Tube Feeding: Administration Tips. Registered Nurse 62(8) 29-31.
Diarrhoea	• Diarrhoea frequently occurs as a result of taking antibiotics. This may continue after the antibiotic course has been completed. Do not stop the antibiotics or feed. Discuss with your Dietitian. • Check feed is being given at correct feed rate • If persistent diarrhoea, a stool sample should be taken and sent for analysis. Please contact a member of the Infection Control Team • Check feed is being given at room temperature • Ensure these losses are documented on the fluid balance chart and record stool type and frequency on a stool chart • Ensure adequate fluids to prevent dehydration
Constipation	• Check that sufficient fluid is being given (refer to your feed regimen) • Discuss with the Dietitian, it may be possible to change to a fibre feed • Contact nursing staff or doctors if the problems do not resolve within a few days

6. Infection Control Guidelines for The Tube Fed Patient

Infection Prevention & Control (including Hand Hygiene, Gloves and Aprons)	Standard Infection Prevention & Control precautions must be adhered to at all times. Hand hygiene must be performed in line with the WHO '5 Moments for Hand Hygiene', and prior to handling feed or enteral feeding systems. If hand washing has been required, due to visible soiling, this should be followed by use of hand sanitiser (either alcohol- or hypochlorous acid-based hand sanitiser). Staff use of personal protective equipment should be in line with an assessment of the risk of exposure to blood, body fluids, non-intact skin, or mucous membranes. If a patient is managing their own enteral feeding tube then it is not necessary for them to wear gloves, but the principals of good hand hygiene should always be adhered to.	National Infection Prevention & Control Manual (England): Chapter 1: Standard IPC Precautions Frimley Health policy IPC05: Hand Hygiene policy
Set up of Enteral Feed System	Enteral feeds and equipment must not be stored within two metres of hand wash basins or other water sources (to avoid contamination from water/ wastewater systems). ANTT (Aseptic Non-touch Technique) is used when connecting and flushing enteral feeding tubes. Items marked 'Single use' should not be reused. Giving sets are single-use only and should be discarded after 24 hours.	National Infection Prevention & Control Manual (England): Chapter 1: Standard IPC Precautions NICE (updated 2017) Clinical guideline 139: Healthcare-associated infections: prevention and control in primary and community care: Enteral feeding Hubbard GP et al (2024) Appropriate handling and storage reduce the risk of bacterial growth in enteral feeding systems reused within 24hrs Nutrition in Clinical Practice

Feed Storage	Sterile feeds and dry powdered constituents should be stored in a clean, cool, dry area and in accordance with manufacturer instructions. All feeds should be checked for expiry date prior to being opened and administered to a patient When decanting feed, a clean working area should be prepared and only equipment dedicated for enteral feed are used when decanting or reconstituting feeds. Opened sterile feed should be labelled with date, time and patient details and kept refrigerated at a temperature of 4°C or below until required for use, and then brought to room temperature prior to administration.	Anderton, A (2000). Microbial Contamination of Enteral Tube Feeds – How Can We Reduce the Risk? Nutricia Clinical Care. Healthcare-associated infections: prevention and control in primary and community care (2012). Infection Control Nurses Association (2003). Enteral Feeding: Infection Control Guidelines.
Hanging Times for Feeds	Sterile feeds should hang for a maximum of 24 hours once opened All decanted and non-sterile feeds should be changed every 4 hours, this includes giving-sets and containers. Hanging time should be taken into account. This includes the following:- • Time that opened feed is stored at ward/room temperature prior to decanting (if not refrigerated) • Time that the feed is hanging at the patient's bedside even if not running	Infection Control Nurses Association (2003). Enteral Feeding: Infection Control Guidelines. Patchell CJ et. al. (1998). Reducing Bacterial Contamination of Enteral Feeds. Arch. Dis. Child (78) 166-8.

Decanting Feeds	Where possible, avoid decanting feed by using ready-to-hang feeds. If a feed has to be decanted:- • Crown or screw capped bottles should be used in preference to cans and tetrapaks to reduce the risk of contamination • Visible dirty bottles or cans should be washed under clean running water and dried with a disposable paper towel • Before opening the container any parts of the outside surface which are likely to come into contact with the feed while it is being decanted should be thoroughly disinfected using either alcohol spray or a separate large alcohol wipe for each container • All scissors, bottle openers etc. which are used to open containers should be cleaned with hot soapy water and disinfected (use an alcohol wipe and allow to dry) before use. Any items used to open containers should be identified as solely for this purpose Do not 'top up' containers with sterile feeds – it is preferable to decant each feed into a new container as it is required.	Anderton A (2000). Microbial Contamination of Enteral Tube Feeds – How Can we Reduce the Risk? Nutricia Clinical Care. Infection Control Nurses Association (2003). Enteral Feeding: Infection Control Guidelines.
Pump Cleaning	Wards are responsible for the cleaning of feeding pumps. They should be cleaned daily using a Sani-Cloth. They should also be cleaned immediately should spillage occur, again using a Sani-Cloth. Pumps should be cleaned before returning to medical devices or Rowan House	Frimley Health - Infection control Manual. Journal of Hospital Infection (2001). Supplement (47) pg 21.

7. Enteral Feeding and Medicines

Drug therapy review

Drugs need to be reviewed in order to determine the therapeutic rationale for each prescription and to discontinue any therapy for which this cannot be identified, or where there is inappropriate therapeutic duplication. This is particularly important in patients with enteral feeding tubes as their medication would need to be reviewed to determine:

- What medication can and cannot be administered enterally
- If an alternative route of administration is necessary. Alternative routes such as injections and suppositories are useful for short-term management but are rarely practical in chronic disease management.
- If drug therapy needs to be switched to another. Pharmacist and/or specialist advice will need to be sought.

Key Points

- Reduce drug therapy to the minimum necessary.
- Transfer the patient to once-daily formulations with a long half-life where possible (not modified- slow-release formulations).
- Determine alternative formulations and routes available where possible.
- Any changes to therapy should be made in an environment where the patient can be effectively monitored

Choice of medication formulation

Many factors are to be considered when deciding which medication formulation is appropriate for administration via an enteral feeding tube. It should be addressed whether the situation is short-term or long-term, the likelihood and potential seriousness of causing a feeding tube blockage, the ability to monitor the effect of medication and the potential seriousness of missing medication doses.

Key Points

- Solutions or soluble tablets are the formulations of choice.
- Do not assume that liquid formulation will be suitable.
- Do not crush tablets or open capsules unless an alternative formulation or drug is unavailable.
- Seek advice from your pharmacist if your patient needs liquid medicine or if you have to crush tablets or open capsules
- The trust formulary also needs to be considered so advice from a pharmacist should be sought.

Drug interactions

Interactions between enteral feeds and drugs can be clinically significant. Drugs can interact with nutritional therapy and nutrients in many ways. For example: only intermediate-release formulations can be given via the enteral feeding tube, resulting in higher peak plasma concentrations than with modified-release formulations.

Steps should be taken to avoid or minimise the effects of significant interactions. In the absence of any data, monitor closely for loss of drug effect or increased side-effects. The resulting drug and nutrition regimen should be practical and acceptable to the patient/carer.

Some clinically significant interactions can be found in the table below (this list is not exhaustive). Please liaise with ward pharmacist to determine appropriate feed breaks.

Phenytoin	It is recommended that phenytoin should NEVER be administered via enteral feeding tubes as enteral absorption is extremely unpredictable. Alternative routes or therapy should be considered. Liaise with the pharmacist.
Tetracycline e.g. Doxycycline	Absorption and serum levels of doxycycline may decrease if it is taken with milk. Withhold enteral feeds for two hours before and one hour after each dose.
Ciprofloxacin	Ciprofloxacin interacts with enteral feeds to produce insoluble chelates, and the absorption of the drug is significantly reduced. This may be particularly significant when it is administered directly into the jejunum. Withhold enteral feeds for two hours before and two hours after each dose.
Digoxin	Digoxin elixir has been reported to physically interact with enteral feeds. Ensure the feeding tube is well flushed before and after each dose to prevent this. Absorption is reduced by the presence of high amounts of fibre in some feeds. Withhold enteral feeds for two hours before and one hour after each dose.
Rifampicin	Absorption of enteral rifampicin can be decreased by concomitant food or milk. It should therefore be given on an empty stomach. Withhold enteral feeds for two hours before and one hour after each dose.
Theophylline	The pharmacokinetics of theophylline can be altered by the nutritional formula of enteral feeds (the half-life is decreased by high protein, low carbohydrate diets, and increased by low protein, high carbohydrate diets) Some sources recommend that theophylline is administered on an empty stomach due to a potential interaction with enteral feeds, whereas other sources report that patient can be successfully managed without withholding the feed. In either case, the patient should be monitored for loss of efficacy.

	Liaise with the pharmacist or doctor. If feed is to be withheld, it should be stopped for one hour before and one hour after each dose.
Voriconazole	Withhold enteral feeds for two hours before and one hour after each dose.
Tacrolimus	Enteral tacrolimus should be given on an empty stomach. Withhold enteral feeds for two hours before and one hour after each dose.
Antiretrovirals medications	Liaise with Pharmacist

Table 1: Interactions between enteral feeds and drugs.

Adapted from sources:

- Handbook of Drug Administration via Enteral Feeding Tubes
- The Newt Guidelines for administration of medication to patients with enteral feeding tubes or swallowing difficulties.
- British Pharmaceutical Nutrition Group

Administration of Liquid Medicines via Enteral Feeding Tubes

An appropriately sized oral/enteral syringe should be used to measure and administer oral liquid medicines via enteral feeding tubes. Intravenous syringes should not be used due to risk of accidental parenteral administration. The same oral/enteral syringe should be used to draw up and administer a flush afterwards to ensure full dose is given.

Patient's medication should be reviewed regularly and any unnecessary medicines stopped. Using the feeding tube to administer drugs should be considered as a last resort, and wherever possible an alternative route should be used. There should be close liaison with the pharmacist and the doctor regarding appropriate route for medication.

Administration of Liquid Medicines via Enteral Feeding Tubes

Seek advice from your pharmacist if your patient needs liquid medicines or if you are having to crush tablets

DO NOT crush enteric coated tablets or SR (sustained release), MR (modified release), LA (long acting), XL (extended release) tablets unless advised by the pharmacist, they may cause toxic side effects if administered via this route.

Inadequate tube flushing is the most common cause of tube blockage

Enteral syringes MUST be used for the administration of all liquid medications/flushes

If the feed is running - **STOP THE FEED**

If the patient is in a rest period
CHECK pH BEFORE ADMINISTRATION OF MEDICINES

Flush the tube with a minimum of 30mls water

PREPARE EACH DRUG SEPERATELY
Never mix drugs

Rarely a drug should not be mixed with water – a pharmacist will advise if this is the case

Soluble Tablets	Liquids	Tablets	Capsules
Remove plunger from the syringe and place tablets to be dissolved inside, reinsert plunger and draw up 10-15ml of sterile water and gently shake to disperse/dissolve tablet and administer via tube Use the same syringe to draw up water and flush the tube.	SHAKE WELL If viscous (thick) dilute with an equal amount of sterile water and administer via tube. Sorbitol-containing liquids should be diluted before administration. Use the same syringe to draw up water and flush the tube.	UNCOATED & SUGAR COATED ONLY Crush and transfer to cup. Rinse the tablet crusher using sterile water into the cup using to ensure whole dose is given. Add 15-20ml of water, mix well, draw up the solution in an enteral syringe and administer via tube. Use the same syringe to draw up water and flush the tube	Seek advice from pharmacy as to whether capsule can be opened. <u>Hard gelatine capsules:</u> Open capsule and mix contents with 15-30ml of water, draw up the solution in an enteral syringe and administer via tube Use the same syringe to draw up water and flush the tube <u>Soft gelatine capsules:</u> Seek advice from the pharmacist.

If more than one medicine is to be administered – flush between drugs with 10-15ml water

Flush tube, using a pulsing technique with at least 30ml sterile water following the administration of the last drug

(Note: If feeding via NJ tubes this will need to be flushed with 50ml sterile water to avoid blockage)

Do you need to allow a break before restarting the feed?

Re-start feed if indicated.

Remember: Seek advice when using Cytotoxic and hormone based drugs – they are a risk to YOU.

Remember to document the volume of fluid given with medications on the Fluid Chart.

8 . Transition From Tube Feeding to Oral Intake

Procedure for initiating oral intake

If any concerns about the safety of the patient's swallow, refer to Speech and Language Therapy for swallow assessment prior to commencing oral diet and fluids. Further dietetic assessments may be needed to identify appropriate IDDSI level nutrition supplements as per speech and language recommendations.

If able to swallow safely, document any oral intake on Food Record Charts (Appendix 7).

To encourage oral intake, an overnight tube feeding regimen may be recommended. Do not discontinue tube feed or remove the tube until the patient is consuming adequate oral intake – discuss with your dietitian.

References

- American Gastroenterological Association (1995) American Gastroenterological Association Medical Position Statement: guidelines for the use of enteral nutrition. Available at: [https://doi.org/10.1016/0016-5085\(95\)90230-9](https://doi.org/10.1016/0016-5085(95)90230-9) (Accessed; 28 November 2024).
- Anderton, A. (2000) Microbial Contamination of Enteral Tube Feeds: How can we reduce the risks? Trowbridge, UK: Nutricia.
- BAPEN (2016) Enteral Nutrition. Available at: <https://www.bapen.org.uk/education/nutrition-support/enteral-nutrition/> (Accessed: 28 November 2024).
- Colagiovanni, L. (2000) 'Preventing and clearing blocked feeding tubes', Nursing Times, 96(supplement 17), pp. 3-4.
- Cottee, S. (2002) 'Jejunal feeding', Complete Nutrition, 2(2), pp. 32-34.
- Frankel, E. H. et al. (1998) 'Methods of Restoring Patency to Occluded Feeding Tubes', Nutrition in Clinical Practice, 13(3), pp. 129-131. Available at: <https://doi.org/10.1002/j.1941-2452.1998.tb03060.x> (Accessed: 28 November 2024).
- Frimley Health NHS Foundation Trust Guideline, Insertion and ongoing care of nasogastric feeding tubes in adults, May 2020
- Frimley Health Foundation Trust Guideline, Guidelines for the insertion of Nasal Enteral Tube Retaining Devices (NERTD) in Adults, May 2020.
- Frimley Health NHS Foundation Trust (2023) Enteral feeding of diabetes patients in hospital. Available at: https://guidelines.fhft.nhs.uk/Diabetes_and_Endocrinology-Enteral_Feeding_of_Patients_with_Diabetes_in_Hospital (Accessed: 28 November 2024).
- Green, C. J. (1999) 'Existence, causes and consequences of disease-related malnutrition in the hospital and the community and clinical and financial benefits of nutritional intervention', Clinical Nutrition, 18(supplement 2), pp. 3-28.
- White, R. and Bradnam, V. (2007) *Handbook of Drug Administration via Enteral Feeding Tubes*. Available at: https://www.rlandrews.org/pdf_files/handbk_of_enteralfeeding.pdf (Accessed: 28 November 2024).
- The Mouth Care Matters programme has closed. HEE (2019) Mouth Care Matters: A guide for hospital healthcare professionals. Available at: <https://mouthcarematters.hee.nhs.uk/wp-content/uploads/sites/6/2020/01/MCM-GUIDE-2019-Final.pdf> (Accessed: 28 November 2024).
- Community Infection Prevention and Control Policy for Care Home settings (2020) Enteral tube feeding. Available at: <https://www.infectionpreventioncontrol.co.uk/wp-content/uploads/2020/10/CH-07-Enteral-tube-feeding-October-2020-Version-3.00.pdf> (Accessed: 28 November 2024).
- Jensen, G. L. et al. (2010) Adult starvation and disease-related malnutrition: a proposal for etiology-based diagnosis in the clinical practice setting from the International Consensus

Guideline Committee. Available at: <https://doi.org/10.1177/0148607110361910> (Accessed: 28 November 2024).

Kohn-Keeth, C. (2000) 'How to keep feeding tubes flowing freely', *Nursing*, 30(3), pp. 58-59. Available at: <https://doi.org/10.1097/00152193-200030030-00026> (Accessed: 28 November 2024).

MHRA (2021) Single-use Medical Devices: Implication and Consequences of Reuse. Available at: https://assets.publishing.service.gov.uk/media/60117a378fa8f565559191cd/Single_use_medical_devices.pdf (Accessed: 28 November 2024).

Metheny, N. A. et al. (1994) 'pH testing of feeding-tube aspirates to determine placement', *Nutrition in clinical practice*, 9(5), pp. 185-190. Available at: <https://doi.org/10.1177/0115426594009005185> (Accessed: 28 November 2024).

Metheny, N. A. and Meert, K. L. (2004) 'Monitoring feeding tube placement', *Nutrition in clinical practice*, 19(5), pp. 487-495. Available at: <https://doi.org/10.1177/0115426504019005487> (Accessed: 28 November 2024).

National Patient Safety Agency (2008) Patient safety alert: Clean hands help save lives. Available at: <https://data.parliament.uk/DepositedPapers/Files/DEP2009-0728/DEP2009-0728.pdf> (Accessed: 28 November 2024).

National Patient Safety Agency (2011) Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants. Available at: https://www.cas.mhra.gov.uk/ViewandAcknowledgment/ViewAttachment.aspx?Attachment_id=101341 (Accessed: 28 November 2024).

Smyth, J. et al. (2015). The NEWT guidelines for administration of medication to patients with enteral feeding tubes or swallowing difficulties.

National Institute for Health Care and Excellence [NICE] (2017) Nutrition support for adults: oral nutrition support, enteral tube feeding and parenteral nutrition. CG32. Available at: <https://www.nice.org.uk/guidance/cg32> (Accessed: 28 November 2024).

National Collaborating Centre for Acute Care (UK) (2006) Nutrition Support for Adults: Oral Nutrition Support, Enteral Tube Feeding and Parenteral Nutrition. Available at: <https://pubmed.ncbi.nlm.nih.gov/21309138/> (Accessed: 28 November 2024)

NPSA (2007) Promoting Safer Measurement and Administration of Liquid Medicines via Oral and Other Enteral Routes. Available at: https://www.newtguidelines.com/safety_warnings.html#:~:text=NPSA%20Patient%20Safety%20Alert%2019,other%20enteral%20routes%2C%20March%202007&text=Only%20use%20labelled%20oral%20%2F%20enteral,and%20administer%20oral%20liquid%20medicines. (Accessed: 28 November 2024).

Patchell, C. J. et al. (1998) 'Reducing bacterial contamination of enteral feeds', *Archives of Disease in Childhood*, 78(2), pp. 166-168. Available at: <https://doi.org/10.1136/adc.78.2.166> (Accessed: 28 November 2024).

PEN Group (2018) A Pocket Guide To Clinical Nutrition. Available at: <https://www.peng.org.uk/publications-resources/pocket-guide.php> (Accessed: 28 November 2024).

Pendlebury, J. (1997) 'Feeding by PEG', Community nurse, 3(4), pp. 11–12.

Policy for the insertion and ongoing care of nasogastric feeding tubes in adults (July 2025), Frimley Health NHS Foundation Trust

Pratt, R. J. et al. (2007) 'epic2: National evidence-based guidelines for preventing healthcare-associated infections in NHS hospitals in England', Journal of Hospital Infection, 65(supplement 1), pp. S1-S64. Available at: [https://doi.org/10.1016/s0195-6701\(07\)60002-4](https://doi.org/10.1016/s0195-6701(07)60002-4) (Accessed: 28 November 2024).

Rollins, H. (1997) 'A nose for trouble', Nursing Times, 93(49), pp. 66-67.

Royal College of Physicians (2021) Supporting people who have eating and drinking difficulties: A guide to practical care and clinical assistance, particularly towards the end of life. Available at: <https://www.rcplondon.ac.uk/file/28796/download> (Accessed: 28 November 2024)

Stroud, M. et al. (2003) Guidelines for enteral feeding in adult hospital patients. Available at: https://doi.org/10.1136/gut.52.suppl_7.vii1 (Accessed: 28 November 2024).

Tait, J. (2001) 'Going Nasogastric: Current Thinking in Nasogastric Tube Techniques', Complete Nutrition, 1(2), pp. 27-29.

Smyth, J. and Betsi Cadwaladr University Local Health Board (2023) *The NEWT Guidelines for administration of medication to patients with enteral feeding tubes or swallowing difficulties*. Available at: <https://www.newtguidelines.com/index.html> (Accessed: 28 November 2024).

Bliss, D. Z. and Lehmann, S. (1999) 'Tube feeding: administration tips' Registered Nurse, 62(8), pp. 29-31.

Appendix 1: Troubleshooting for Nasogastric and Nasojejunal feeding

Nasogastric/Nasal Jejunal Feeding Tube Care Sheet	
Nasogastric Feeding Tubes	
First line method for confirming position is pH testing :Double Nurse Check	
pH 5.0 or below	Proceed with feed. Monitor for signs of intolerance of feed/respiratory deterioration.
pH 5.5	Do NOT Feed. Request second checker to confirm pH, wait an hour & recheck. If remains elevated request CXR
pH 6.0 or above	Do NOT Feed. Wait an hour & recheck. If remains elevated request CXR or consider replacing the tube
Second line method for confirming NG tube position is CXR Must be Reviewed by 2 Doctors and documented on Epic using *FHFT WARD NGT Tube X-ray confirmation checklist* Verbal Confirmation is not to be accepted Check Xray should not be taken and reviewed overnight Consider if patient will need IV hydration until tube position can be confirmed	
pH Testing for NG tube position must take place - Following initial insertion - Before every use of the tube (Flush, bolus and medication, if feed not in progress) - Following episodes of vomiting, retching or coughing - When there is evidence of displacement e.g. length of tube at nostril is less than previously documented or if securement has loosened - If there are any new or unexplained respiratory symptoms or reduction in oxygen saturation	
Do not commence feed until tube placement has been confirmed by pH or CXR	
Please ensure that the patient is nursed at a 35°degree angle during feeding and for at least 1 hour after to minimise aspiration risk	
If patient has inadvertently removed the NG/NJ Tube, consider using mitts – (refer to dol's policy) or Consider suitability for Nasal Bridle if continued removal of tube.	
Check Nasal Bridle or tape securement to avoid pressure sores	
Check aspirate pH, measurement at the nose and check for coiling in the mouth.	
Check Nasal Bridle or tape securement to avoid pressure sores	
Document NG Assessment on Epic Avatar	
All Feeding sets should be changed every 24 hours	
Complete fluid Chart on Epic	
Nasal Jejunal Feeding Tubes	
Do not require a pH check.	
Document measurement of tube at nostril prior to each use and check for coiling in the mouth.	
NJ tube should be flushed every 4 hours with 30-50 ml sterile water to avoid blockage.	
If patients experience vomiting or coughing episodes, or are becoming chesty, the feed should be stopped as the tube may have become dislodged.	
AXR will be required to confirm the tube position. Please ensure the request includes confirmation of nasal Jejunal tube position.	

Trouble Shooting Gastric Aspirate Guide
Unable to get an Aspirate/ High pH 1. Check NG tube position at nostril 2. Lie Patient flat and turn on left side 3. Wait an hour and retry

	• Not enough aspirate- check tube length • Lie patient on their left side and retry
	• Air but no aspirate- check tube length & consider advancing the tube 5 cm and retry
	• No air or aspirate- Check tube length. Inject 10 ml air to free tube tip from the gastric mucosa and retry aspirating This is not the same as the whoosh test, which must not be used to confirm ng tube position
	• No air/aspirate – Check tube length • Consider withdrawing tube 5 cm and retry
If your patient is on a proton pump inhibitor medication e.g. Omeprazole Please give this at the start of the feeding regimen after checking the tube position	
If all above measures are unsuccessful Consider CXR to confirm NG tube position	

Appendix 2: Out of Hours Feeding Regimen for NGTs and Gastrostomy Tubes (PEG/RIG) Pump Feeding – Cross site

Emergency Nasogastric and Gastrostomy Feeding Regimen - PUMP FEEDING – Cross site

To only be used when a dietitian is unavailable, including over weekends and bank holidays (working hours are 08:30 – 16:30 Monday to Friday)

Important: Please follow the flow chart to determine if the patient is at risk of refeeding syndrome, to establish the most appropriate regimen.

Please ensure that the patient has been **referred to a dietitian via Epic**. This document does not replace the need for a dietetic assessment.



Tick all relevant boxes to determine patient's risk of refeeding syndrome:

Patient has <u>one or more</u> of the following:		Or patient has <u>two or more</u> of the following:	
☐	BMI less than 16 kg/m ²	☐	BMI less than 18.5 kg/m ²
☐	Recent unintentional weight loss within the last 3–6 months	☐	Little or no nutritional intake for more than 5 days
☐	Little or no nutritional intake for more than 10 days	☐	A history of alcohol abuse or drugs including insulin, chemotherapy, antacids or diuretics
☐	Low levels of potassium, phosphate or magnesium prior to feeding	☐	



(NICE CG32, 2017)

☐

AT RISK OF REFEEDING SYNDROME: Commence regimen A

☐

NOT AT RISK OF REFEEDING SYNDROME: Commence regimen B

If you are not sure whether your patient is at risk of refeeding syndrome, then please choose Regimen A

REGIMEN A

Emergency Nasogastric and Gastrostomy Feeding Regimen for Patients at Risk of Refeeding Syndrome - PUMP FEEDING – Cross site

Actions required prior to commencing feed in an at risk patient

- Check urea and electrolytes, phosphate, magnesium, potassium and calcium daily. Correct as appropriate and commence with feed unless:
 - potassium <2.5mmol/l, phosphate <0.5mmol/l, magnesium <0.5mmol/l, then correct levels prior to commencing feed
- Administer Pabrinex IV pairs I + II in 100ml sodium chloride 0.9% or glucose 5% infused over 15-30 minutes / IV Thiamine 250mg/5ml injection ampoule (due to Pabrinex shortage). Administer 30 minutes prior to commencing feed. Continue daily until advised to stop.
- Confirm position of NGT as per NG care pathway
- Ensure that the patient does not have any allergies or intolerances to any ingredients in the feed. Note that it contains: **MILK, SOYA & FISH**. (Please avoid starting the feed if the patient reports reactions to either and maintain hydration via IV)

Day	Feed Presentation	Pump rate (ml/hr)	Duration (hours)	Total volume (ml)	Notes
1	500ml Nutrison* or Fresubin Original*	25	20	500	50ml water flush (sterile if applicable) pre and post feed and with medication
	Rest	-	4	-	
- Please give IV Pabrinex / IV Thiamine at least 30 minutes before starting feed - Ensure that bloods have been checked and replacements prescribed appropriately before proceeding to day 2. - If BMI <14kg/m² or no intake for 15 days continue day 1 until Dietetic assessment					
2 until dietetic review	1000ml Nutrison* or Fresubin Original*	50	20	1000	50ml water flush (sterile if applicable) pre and post feed and with medication
	Rest	-	4	-	

***For patients who are Vegetarian please use "Nutrison Soya"**

Please note:

- Do not increase feed above 50ml/hr until the patient has been assessed by a Dietitian
- Additional hydration may need to be arranged in the form of IV fluids by a Doctor
- Giving sets must be changed every 24 hours
- Nutrison, Fresubin Original and Nutrison Soya can be sourced from Rowan House at FPH and Main Kitchen Store at WPH

IF IN DOUBT DO NOT FEED, MAINTAIN HYDRATION VIA IV AND AWAIT DIETETIC ASSESSMENT

REGIMEN B
Emergency Nasogastric and Gastrostomy Feeding Regimen -
PUMP FEEDING – Cross site

Actions required prior to commencing feed

- Ensure patient is **not** at risk of refeeding syndrome. If patient is at risk of refeeding syndrome do not continue. Refer to regimen A on page 2
- Confirm position of NG as per NG care pathway.
- Ensure patient does not have allergies or intolerances to any ingredients in the feed . Note that it contains: **MILK, SOYA & FISH**. (Please avoid starting the feed if the patient reports reactions to either and maintain hydration via IV)

Day	Feed Presentation	Pump rate (ml/hr)	Duration (hours)	Total volume (ml)	Notes
1	1000ml Nutrison* or Fresubin Original*	50	20	1000ml	50ml water flush (or sterile water if applicable) pre + post feed + with medication
	REST	-	4	-	
If a patient's weight is <50kg and/or there are concerns around fluid overload eg: heart failure, end stage renal disease please continue day 1 until Dietetic assessment					
2	1500ml Nutrison*	75	20	1500ml	50ml water flush (or sterile water if applicable) pre + post feed + with medication
	REST	-	4	-	
3 + onwards	Continue as per day 2 until advised otherwise by a dietitian				

***For patients who are Vegetarian please use "Nutrison Soya"**

Please note

- If the feed is not tolerated at 50ml/hr, reduce the pump rate to 30ml/hr for the duration of the day and retry at 50ml/hr the following day
- If the feed is not tolerated at 75ml/hr, reduce pump rate to 50ml/hr for the duration of the day and retry at 75ml/hr for the following day
- Do not increase feed rate above 75ml/hr until full assessment has been undertaken by a dietitian
- Additional hydration may need to be arranged in the form of IV fluids by a doctor
- Giving sets must be changed every 24 hours
- Nutrison, Fresubin Original and Nutrison Soya can be sourced from Rowan House at FPH and Main Kitchen Store at WPH

IF IN DOUBT DO NOT FEED, MAINTAIN HYDRATION VIA IV AND AWAIT DIETETIC ASSESSMENT

Appendix 3: Emergency Nasojejunal Feeding and Refeeding Regimen:

Emergency Naso-Jejunal Feeding Regimen - PUMP FEEDING

To only be used when a dietitian is unavailable, including over weekends and bank holidays (working hours are 08:30 – 16:30 Monday to Friday)

Important: **The NJ tube must be flushed with at least 30ml sterile water every 6 hours**
(With and/or without feeding)

Please follow the flow chart to determine if the patient is at **risk of refeeding syndrome**, to establish the most appropriate regimen.

Please ensure that the patient has been **referred to a dietitian via Epic**. This document does not replace the need for a dietetic assessment.



Tick all relevant boxes to determine patient's risk of refeeding syndrome:

Patient has <u>one or more</u> of the following:		Or patient has <u>two or more</u> of the following:	
☐	BMI less than 16 kg/m ²	☐	BMI less than 18.5 kg/m ²
☐	Recent unintentional weight loss within the last 3–6 months	☐	Little or no nutritional intake for more than 5 days
☐	Little or no nutritional intake for more than 10 days	☐	A history of alcohol abuse or drugs including insulin, chemotherapy, antacids or diuretics
☐	Low levels of potassium, phosphate or magnesium prior to feeding	☐	



(NICE CG32, 2017)

☐

AT RISK OF REFEEDING SYNDROME: Commence regimen A

☐

NOT AT RISK OF REFEEDING SYNDROME: Commence regimen B

If you are not sure whether your patient is at risk of refeeding syndrome then please choose Regimen A

REGIMEN A**Emergency Naso-Jejunal Feeding Regimen for Patients at Risk of Refeeding Syndrome - PUMP FEEDING**Actions required prior to commencing feed in an at risk patient:

- Check urea and electrolytes, phosphate, magnesium, potassium and calcium daily. Correct as appropriate and commence with feed unless:
 - potassium <2.5mmol/l, phosphate <0.5mmol/l, magnesium <0.5mmol/l, then correct levels prior to commencing feed
- Administer Pabrinex IV pairs I + II in 100ml sodium chloride 0.9% or glucose 5% infused over 15-30 minutes / IV Thiamine 250mg/5ml injection ampoule (due to Pabrinex shortage). Administer 30 minutes prior to commencing feed. Continue daily until advised to stop.
- Confirm position of NJ tube before commencing feed - ensure that the tube length corresponds to the length recorded at the time of placement (NJ tubes do not require pH checks as they bypass the stomach)
- Ensure that the patient does not have any allergies or intolerances to any ingredients in the feed. Note that it contains: **MILK, SOYA & FISH**. (Please avoid starting the feed if the patient reports reactions to either and maintain hydration via IV)

Day	Feed Presentation	Pump rate (ml/hr)	Duration (hours)	Total volume (ml)	Notes
1	500ml Nutrison* or Fresubin Original*	21	24	500	Do not proceed to day 2 until bloods are checked and abnormalities have been corrected
2	1000ml Nutrison * or Fresubin Original*	30	24	720ml	Discard remaining feed at the end of the 24 hour period
Continue as per day 2 until advised otherwise by a dietitian Flush NJ tube with 30ml sterile water every 6 hours whether used for feeding or not					

***For patients who are Vegetarian please use "**Nutrison Soya**"**

Notes:

- Do not increase feed above 30ml/hr until the patient has been assessed by a Dietitian
- Additional hydration may need to be arranged in the form of IV fluids by a Doctor
- Giving sets must be changed every 24 hours
- Nutrison, Fresubin Original and Nutrison Soya can be sourced from Rowan House at FPH and Main kitchen store at WPH.

IF IN DOUBT, DO NOT FEED, MAINTAIN HYDRATION BY IV FLUIDS AND AWAIT DIETETIC ASSESSMENT

REGIMEN B

Emergency Naso-Jejunal Feeding Regimen - PUMP FEEDING

Actions required prior to commencing feed

- Ensure patient is **not** at risk of refeeding syndrome. If patient is at risk of refeeding syndrome do not continue. Refer to regimen A on page 2
- Confirm position of the NJ tube before commencing feed - ensure that the tube length corresponds to the length recorded at the time of placement (NJ tubes do not require pH checks as they bypass the stomach)
- Ensure that the patient does not have any allergies or intolerances to any ingredients in the feed. Note that it contains: **MILK, SOYA & FISH**. (Please avoid starting the feed if the patient reports reactions to either and maintain hydration via IV)

Day	Feed Presentation	Pump rate (ml/hr)	Duration (hours)	Total volume (ml)	Notes
1	1000ml Nutrison* or Fresubin Original*	30	24	720	Discard remaining feed at end of 24 hour period

If a patient's weight is <50kg and/or there are concerns around fluid overload eg: heart failure, end stage renal disease please continue day 1 until Dietetic assessment

2 until dietetic review	1500ml Nutrison*	50	24	1200	Discard remaining feed at end of 24 hour period
-------------------------	---------------------	----	----	------	---

Continue as per day 2 until advised otherwise by a dietitian

Flush NJ tube with 30ml sterile water every 6 hours whether used for feeding or not

***For patients who are Vegetarian please use "Nutrison Soya"**

Please note

- If the feed is not tolerated at 50ml/hr, reduce the pump rate to 30ml/hr for the duration of the day and retry at 50ml/hr the following day
- If the feed is not tolerated at 75ml/hr, reduce pump rate to 50ml/hr for the duration of the day and retry at 75ml/hr for the following day
- Do not increase feed rate above 75ml/hr until full assessment has been undertaken by a dietitian
- Additional hydration may need to be arranged in the form of IV fluids by a doctor
- Giving sets must be changed every 24 hours
- Nutrison, Fresubin Original and Nutrison Soya can be sourced from Rowan House at FPH and Main kitchen store at WPH.

IF IN DOUBT DO NOT FEED, MAINTAIN HYDRATION VIA IV AND AWAIT DIETETIC ASSESSMENT

Appendix 4: Post Jejunostomy Insertion Feeding Protocol

POST JEJUNOSTOMY INSERTION PROTOCOL

DEPARTMENT OF NUTRITION AND DIETETICS

A jejunostomy is a long-term feeding tube that is surgically placed directly into the jejunum.

If not already under a Dietitian, please refer at the earliest opportunity

Post-op Care:

- Observations should include blood pressure, pulse, temperature, respiration rate, oxygen saturations and checking the stoma site for bleeding, leaking of gastric contents, swelling, pain and tube displacement.
- Frequency of observations – every 15 minutes for the first 2 hours after insertion, then every 30 minutes for 2 hours and then hourly for 4 hours.
- Post Procedure: if there is pain on feeding, prolonged or severe pain, fresh bleeding or external leakage of gastric contents, **stop feed immediately** and obtain senior advice from the Surgical or Gastroenterology team on-call or Nutrition Support Nurse.

The jejunostomy tube must be flushed daily with 30-50ml sterile water every 6 hours, whether used for feeding or not

Day	Feed Type	Pump Rate (ml/hr)	Duration
	• Unless otherwise indicated in the surgical notes, commence sterile water when patient returns to the ward • Confirm jejunostomy position by noting position of external markers		
Day 1 (day of procedure)	Sterile water	30	Every 4 hrs for a total of 12 hours
Day 2 post op	Nutrison	30	12 hours

For review by the dietitian and further plans for feeding regimen and pump training to be arranged. Until feeding regime has been established, IV hydration may be required.

CARE OF JEJUNOSTOMY SITE UNTIL STOMA WELL ESTABLISHED (Days 1-10)

1.	Clean skin underneath the fixation plate daily with sterile saline. Ensure that the sutures are not pulled.
2.	DO NOT loosen fixation plate. DO NOT advance or rotate.
3.	DO NOT REMOVE SUTURES as these hold the external fixator plate in place.
4.	Ensure the tube does not become kinked or pulled.
5.	Patients may have a shower, but not a bath.

JEJ TUBE AND SITE CARE

Skin	The use of dressings, creams and powders is not recommended as this can lead to stoma site infection and granulation. These should only be used under direct guidance of the Nutrition Specialist Nurse or the Surgical or Gastroenterology team. See the oral and enteral guidelines, which can be located on the intranet, for further information.
Displaced tube	If you think the tube has dislodged, DO NOT FEED and contact a member of the Surgical or medical team or Nutrition Specialist Nurse.
Tube blockage	Attach a 20ml enteral syringe to the end of the tube with warm (not hot) water and gently push and pull on the tube with the enteral syringe. Never try to force water into the jejunostomy as this may split the tube. Refer to the oral and enteral guidelines for further information.

Appendix 5: Post Peg/Rig Insertion Protocol – Cross Site**POST PEG/RIG INSERTION**

	Duration	Feed Type	Pump Rate (ml/hr)
Post gastrostomy insertion	6 hours	Nil by mouth	Nil by gastrostomy Consider IV fluids
Start water	4 hours	200ml tap water in container	50mls/hr
If water tolerated, restart oral food and fluids (if applicable)			
If water tolerated, can start feed	See Dietitian regimen	As per Dietitian Or see out of hours gastrostomy feeding protocol on 'Adult Oral and Enteral Nutrition Policy' on intranet if required.	As per Dietitian or Emergency Regimen on Intranet

DEPARTMENT OF NUTRITION AND DIETETICS

Type of tube:**Size of tube:****Time and date of insertion of Gastrostomy:****Type of placement: Endoscopic/Radiological**

The Dietitian will review nutritional requirements; this is calculated for each individual patient and detailed on a separate feeding regimen

If patient has a previous nasogastric feed, please follow regimen.

General Aftercare of the Gastrostomy Tube

The tube must be flushed with 20-50ml tap water (at room temperature) using a 50ml syringe (see separate Enteral Feeding Regimen for details): -

1. BEFORE AND AFTER feed.
2. Before & after administration of medication.
3. If the tube is not in use it must be flushed at least once a day.

**IF THERE ARE LEAKS OF FLUID AROUND THE TUBE,
OR PAIN ON FEEDING, OR NEW BLEEDING
STOP FEED IMMEDIATELY AND CONTACT GI UNIT OR ENTERAL NUTRITION
CNS FOR URGENT ADVICE**

Queries or problems?

Please contact Nutrition & Dietetic Department or Enteral Nutrition CNS

Full version control record

Version:	1
Guidelines Leads:	Revised by Hannah Garguilo, Francesca Kiting, Claudia Heinemann, Chloe Baldwin
Contributors:	Krishna Patel, Alejandra Moledo and Wendy Bell (Enteral Nutrition CNS), Victoria Gentry (Infection control Nurse) and Norsyakira Mahfuzh (Pharmacist), FHFT Dietitians
Lead Director / Chief of Service:	Melanie van Limborth, Chief of Nursing and Midwifery
Library check completed:	28/11/2024
Ratified at:	Cross-site Gastro and Therapies CG meetings on 24/09/25
Date issued:	20/11/2025
Review date	01/09/2028
Pharmaceutical dosing advice and formulary compliance checked by:	Norsyakira Mahfuzh (Pharmacist)
Key words:	Nutrition, NG, NGT, NG feeding, NJ, PEG, RIG, nasogastric, nasojejunal, enteral feeding, out of hours

This guideline has been registered with the Trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt, contact a senior colleague or expert. Caution is advised when using guidelines after the review date.

This guideline is for use in Frimley Health NHS Foundation Trust hospitals only. Any use outside this location will not be supported by the Trust and will be at the risk of the individual using it.

Version Control Sheet

Version	Date	Guideline Lead(s)	Status	Comment
3	Jan 2014	Moira Edwards/Natasha Mir/Claire Campbell	Final	FPH site
4	Sept 2017	Helen Daly	Final	FPH version adapted for WPH site
1	Jan 2022	Natalie Callue/Anita McCallum	Final	Updated to cross-site document
1.1	Oct 2022		Interim	Updated to reflect changes post introduction of Epic EPR

1	July 2025	Hannah Garguilo, Francesca Kiting, Chloe Baldwin	Final	Guideline split into 3 documented (Oral and nutrition screening guideline, Refeeding guideline, and Enteral Feeding guideline)
---	-----------	--	-------	---

Related Documents

Document Type	Document Name
Regimen	Out of Hours Enteral Tube Feeding Regimens
Guideline	Adult Parenteral Nutrition Guideline
Guideline	Guidelines for selection and referral of patients for consideration for long-term feeding tube
Guideline	ITU Nutrition Guideline
Guideline	Insertion and on-going care of nasogastric feeding tubes in adults
Guideline	Guidelines for enteral feeding of patients with diabetes in hospital