

ENTERAL (NASOGASTRIC TUBE) FEEDING

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

- Feeding is commenced in a timely manner and for the appropriate duration. The multidisciplinary team should assess the patient's status in order to minimize nutrition, infectious, mechanical and metabolic risks.

2. PATIENT

- Woman receiving enteral feeding

3. STAFF

- Medical, midwifery and nursing staff
- Dietitian

4. EQUIPMENT

- Kangaroo pump
- Nasogastric tube
- Giving set
- Enteral feed

5. CLINICAL PRACTICE

Commencing of enteral feeding.

- Weigh patient prior to commencement of feeding, and then weekly for the duration of the feed
- Prescribe tube feeding by the medical officer or dietitian
- Check blood levels of potassium, phosphate and magnesium are within normal range and supplement if required. Feeding can be commenced in conjunction with supplementation to avoid delay in feeding.
- Perform appropriate investigations to confirm correct placement of the enteral tube. A chest x-ray must be performed on all patients following insertion of a nasogastric tube to confirm placement.
- Refer to the RHW dietitian via Powerchart, paging 47302 or phoning 26544.
- Adjust rate, volume and type of intravenous fluids if necessary.
- Ensure patient's upper body is elevated by at least 45° during feeding
- Use a new spike set for every new bottle of ready to hang formula
- Deliver feeds by Kangaroo Pump and not by gravity
- Hang feed for a maximum of 24 hours. Discard leftover feed, bottle and used spike set.
- Chart bowels and maintain fluid balance chart
- Prescribe a feeding regimen to suit the individual patient's nutritional requirements in liaison with the medical, dietitian and nursing staff.
- Never dilute feed
- Shake feed well and make sure it is at room temperature before administration.
- Do not administer anything other than specialised feed due to the high risk of bacterial contamination, poor nutritional content, high osmolarity and increased risk of tube blockage.
- Administer medications via the feeding tube in liquid form (or appropriately crushed, if safe to do so) and tube should be flushed either side with 40 mL of water. Care should be taken to prevent bacterial contamination.
- Refer to **Appendix 1** for patients at risk of refeeding syndrome.
- Refer to **Appendix 2** if the ward dietitian is not available and treat the patient as being at high risk of refeeding syndrome.

ENTERAL (NASOGASTRIC TUBE) FEEDING cont'd

- Trouble shoot as per table below

Troubleshooting Complications with Enteral feeding

Category	Feeding Complication	Suggested Interventions
Gastrointestinal side effects	Nausea & Vomiting	<ul style="list-style-type: none"> • Check feed administration rate • Check when bowels were last open and treat appropriately • Elevate head of bed 45 degrees if possible • Ensure the feed is being administered at room temperature
	Diarrhoea	<ul style="list-style-type: none"> • Check feed administration rate • Ensure the feed is being administered at room temperature • Ensure good infection control practices i.e. Refrigerate and label open cans, discard administration sets daily, wash hands before and after patients contact and feed preparation • Discontinue broad-spectrum antibiotics if possible • Re-examine enteral intake regimen in consultation with Dietitian and MO • Stool specimen and stool chart • Ensure the patient does not become dehydrated • Anti-diarrhoeal agents should only be considered if the above measures are unsuccessful & stool culture is clear
	Constipation	<ul style="list-style-type: none"> • Administer appropriate medication ie. Enema, laxative, bulking agent • To ensure adequate hydration, check that enteral formula and water flushes are being administered as per dietitian's recommendations. Consult dietitian and MO • Keep patient mobile if possible • Chart bowels daily
Pulmonary	Aspiration pneumonia	<ul style="list-style-type: none"> • Elevate head of bed 45 degrees if possible • Q4h aspiration for tube gastric residual • Pump controlled feed administration • Review when bowels were last opened • Administer regular prokinetic medications that assist with increasing the rate of gastric emptying eg. Metoclopramide
Tube related	Tube Blockage	<ul style="list-style-type: none"> • Prevention- flush regularly with water for irrigation • Avoid administering drugs via the feeding tube • In the event of tube obstruction the following interventions are suggested (in order of execution) : <ol style="list-style-type: none"> 1.Flush and aspirate with warm sterile water 2. Flush and lock with alkalisng agent i.e. Sodium citrotartrate (Ural)/ Sodium Bicarbonate. 3. Pancreatic enzyme solution has been shown to digest clots of feed. Administer these in consultation with patient's healthcare team and as prescribed by the MO
Psychosensory	Thirst, dry mouth/lips	<ul style="list-style-type: none"> • Routine and prn mouth care • Lubricate lips and give ice to suck
	Food deprivation	<ul style="list-style-type: none"> • Reassure and support patient • To ensure adequate hydration, check that enteral formula and water flushes are being administered as per Dietitians recommendations and consult Dietitian and MO.

ENTERAL (NASOGASTRIC TUBE) FEEDING cont'd

6. DOCUMENTATION

- Medical record

7. EDUCATIONAL NOTES

- Enteral feeding refers to the introduction of a liquid formula directly into the stomach or small intestine via a narrow, specifically designed tube, in the presence of a functioning gut.
- Contraindications for enteral tube feeding. This list is not inclusive:
 - Bowel obstruction
 - Fistula
 - Perforation
 - Enteritis (radiation, drug induced, infective etc)
 - True paralytic ileus
- If an enteral tube is unable to be passed the patient's health care team must be informed and appropriate arrangements made in a timely manner.
- If enteral feed is not tolerated (ie the patient is vomiting), the patient's health care team must be notified and alternative arrangements made in a timely manner.
- If an enteral tube is displaced, feeding must be suspended immediately, the patient's condition assessed and the tube repositioned as soon as practical, or alternative arrangements made. Confirmation of correct tube placement by X-Ray must be undertaken prior to use.

RISK RATING

- Low

NATIONAL STANDARD

- Standard 5 - Comprehensive Care

REFERENCES

1. POWH Enteral feeding starting regimen for use after hours and weekends, Department of nutrition and dietetics, 2013
2. Enteral nutrition manual for adults in health care facilities, DAA, 2015

REVISION & APPROVAL HISTORY

Reviewed and endorsed Therapeutic & Drug Utilisation Committee 25/9/19
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Reviewed and endorsed Therapeutic & Drug Utilisation Committee 10/6/14
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APPENDIX 1

Refeeding Syndrome

What is Refeeding Syndrome?

Refeeding syndrome is the term used to describe the adverse metabolic effects and clinical complications that may arise when a starved or seriously malnourished individual commences refeeding by any route. When the malnourished patient is fed carbohydrate, anabolism leads to intracellular influx of anabolic ions in response to insulin. The resulting electrolyte shifts can lead to dangerously low plasma levels of these ions.

Signs of refeeding syndrome include:

- Severe hypophosphataemia, hypokalaemia or hypomagnesaemia;
- Vitamin deficiencies (most notably, thiamine depletion);
- Glucose intolerance;
- Fluid balance disturbances.

Who is at risk?

Some risk of refeeding syndrome	Any patient who has had very little nutrition intake for >5 days is at some risk of re-feeding problems.
High risk of refeeding syndrome	<p>Patient has one or more of the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> BMI <16kg/m² <input type="checkbox"/> Unintentional weight loss of >15% within the previous three to six months <input type="checkbox"/> Very little or no nutrient intake for >10 days <input type="checkbox"/> Low levels of potassium, phosphate or magnesium prior to any feeding <p>Or patient has two or more of the following lesser criteria:</p> <ul style="list-style-type: none"> <input type="checkbox"/> BMI <18.5kg/m² <input type="checkbox"/> Unintentional weight loss >10% within the previous three to six months <input type="checkbox"/> Very little or no nutrient intake for > five days <input type="checkbox"/> A history of alcohol abuse or some drugs including insulin, chemotherapy, antacids or diuretics.
Extreme risk of refeeding syndrome	<p>Use extra caution in patients with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> BMI <14kg/m² <p>Or</p> <ul style="list-style-type: none"> <input type="checkbox"/> Negligible intake for more than 15 days

Precautions to be taken

1. Identify at-risk patients.

All patients should be assessed for risk of refeeding syndrome by the medical team or dietitian prior to commencing feeding.

2. Treat electrolyte abnormalities.

Electrolyte levels (in particular phosphate, potassium and magnesium) must be assessed at baseline and any abnormalities corrected.

3. Provide vitamin supplementation.

Thiamine (300mg) must be given prior to the commencement of feeding and then daily thereafter. A multivitamin must be given daily.

4. Deliver energy and fluids slowly.

Feeds to start at 20mls/hr and increase at 10-20mls/hr/day until goal rate achieved.

5. Monitor the patient.

Fluid balance should be carefully documented so as to avoid fluid overload. Biochemistry should be monitored intensively during the first week of feeding and any abnormalities corrected (specifically phosphate, potassium and magnesium).

APPENDIX 2

Commencing Nasogastric Tube feeding regimens when the dietitian is *not* available.

- Treat these patients as having a high risk of refeeding syndrome (Appendix A for precautions).
- Obtain feed (Nutrison protein plus multifibre) from the nutrition room on Macquarie ward.

Feeding regimen

- After the feeding tube position has been confirmed, commence feed at 20ml/hr and hold until dietitian review; if the dietitian is away for an extended period of time please refer to the below table. Rate increase should be done at 10-20ml/hr per 24 hours depending on the patient.

This table provides an outline of goal rates based on body weight of patient, using 25kcal/kg/day. (using Nutrison protein plus multifiber):

Pt weight (kg)	Goal rate (ml/hr)	kCal/day	Protein g/day	Free fluid ml/day
50	40	1250	60	778
60	50	1500	76	972
70	60	1750	90	1166
80	65	2000	98	1264
90	75	2250	113	1460

- For obese patients (BMI >30kg/m², please use ideal body weight for working out requirements.

PLEASE NOTE:

- Flush the tube with 50 mls of water, before and after commencing each feeding period, 4 hourly during feeding and before and after administration of any medications given via the tube.
- Adjust rate, volume and type of intravenous fluids if necessary
- Use a new spike set for every new bottle of ready to hang formula
- Hang feed for a maximum of 24 hours. Discard leftover feed, bottle and used spike set.
- Chart bowels and maintain fluid balance chart
- Contact the dietitian and inform them of the commencement of nasogastric feeds and the relevant patient details. Page: 47302 Extension: 26544
- Once the dietitian is available to review the patient their individual regimen will be documented accordingly.