A gastric tube may be inserted via the nose or mouth into the stomach to facilitate feeding when inadequate amounts of nutrition and/or medication are taken orally. There is always a risk of tube displacement. If tube displacement is suspected, remove the tube immediately and assess the patient’s clinical condition. Inform medical staff and document the event in the patient’s care record.

Misplacement of naso/orogastric tubes must be reported as a clinical incident.

**Contents**

- Indications For Use
- Type Of Tube Available
- Insertion Procedure
- Type of Tubes available
- Documentation
- Ongoing Confirmation Of Tube Placement
- Administering Feeds And Flushes
- Administering Medications
- Oral Hygiene
- Reducing The Risk Of Aspiration And Strangulation
- Discharging A Patient Home With An Nasogastric Tube
- Accountability
- Troubleshooting
- Appendix 1: Flow Chart For The Positioning Of Nasogastric And Orogastric Tubes
- References

**INDICATIONS FOR USE**

- Enteral feeding (short term < 2 – 3 months) and/or medication administration
- Gastric drainage / deflation
- Short term rehydration during and post gastroenteritis (Emergency Department)

**TYPE OF TUBE AVAILABLE**

- Refer to Enteral Feeding Equipment Management SOP
INSERTION PROCEDURE

- Adhere to Policy For Insertion Confirmation Of Position And Removal Of Naso Gastric And Oro Gastric Feeding Tubes

- Staff must be assessed as competent prior to inserting, confirming position and removing an NGT or OGT using the Competency for Administration of Bolus Nasogastric/Orogastric (NGT/OGT) Tube Feeds in Neonates, Paediatrics and Adults

- Consider age-appropriate play and distraction therapy for the insertion procedure

- Gain verbal consent and explain the rationale and procedure to parents and carers and/or patient, including discussions around clinical holding and restraint (risk assess if necessary). In NICU process is routine, while discussion is advised consent is not usually necessary.

- Ensure bedside oxygen and suction are in working order

- To obtain the correct length of NGT, measure from the nose tip, to the ear lobe, and then continue to the xiphisternum (called the NEX measurement)

- To obtain the correct length of OGT, measure from the lips to the xiphisternum

- Collect the appropriate type and width of tube according to age and size of the child

- Collect all other equipment:
  - Adhesive tape, skin protection, scissors, apron
  - pH indicator paper
  - ENfit syringe (use the largest syringe size possible 60ml, or 20ml for neonates)
  - Lubricant (sterile water only, other lubricants may affect pH)

- Wash hands before and after handling an NGT or OGT. Adhere to Enteral Feeding Infection Control Guideline

- Confirm patient’s identity and place patient in a position appropriate to age / clinical condition:
  - Supine (infant/child)
  - Lateral (unconscious patient)
  - Semi-recumbent with head tilted slightly forward (child/adolescent)

Procedure for insertion of an NGT:

- Examine the nostril for evidence of deformity or obstruction and remove any obstruction first i.e. secretions
- Lubricate the tube tip with a little water
- Insert the tube and slide it along the floor of the nasopharynx to the oropharynx, tilting the child’s head forward slightly if able to, and advance to the correct measured length
- Encourage the patient to swallow or babies to suck on a dummy (to help the tube pass)
- Never advance the tube against resistance. Check the tube is not coiled in the mouth
- It may be necessary to try the alternate nostril
- If patient develops signs of respiratory distress or difficulties with speech, remove the tube
- Secure the tube well to the cheek with adhesive tape and skin protection
- Post-insertion, reassess the patient’s respiratory status

Extended until September 2020
• If using a long term tube, flush with sterile water to remove the guide wire only once tube position is confirmed by pH < 5.5 (never reinsert the guide wire)
• Replace the tube cap and dispose of equipment safely

Procedure for insertion of an OGT:
• The technique and precautions to be taken are the same, except that the tube is passed directly through the mouth, and over the top or to the side of the tongue
• Encourage the patient to swallow or babies to suck on a dummy (to help the tube pass)
• Secure to the patient’s chin well (not too tight) with adhesive tape and skin protection

TYPES OF TUBES AVAILABLE
• The 2 main categories of tube in BRHC are:
  ➢ Polyvinylchloride (PVC) tubes: short term tubes that usually stay in situ for 7-10 days
  ➢ Polyurethane (PU) tubes: long term tubes that stay in situ for 8 weeks (to 3 months)

• Each ward / Emergency Department must stock a range of different tubes appropriate for their patient needs. Variable length and width of tubes are available to order:
  ➢ 50cm - 85cm tubes - 5, 6 and 8 french gauge (fr)
  ➢ 85cm - 125cm tubes – 8fr, 10fr, 12fr

• Smaller bore 6fr tubes are usually advised on NICU unless the feed is thickened

• Check manufacturer’s guidelines to determine how long a tube may remain in situ
  Generally, the following applies:
  1. Enteral (GB UK) – single use
     • Short term tubes can remain in situ for 7-10 days.
     • Long term tubes can remain in situ for up to 90 days
  2. ENTRAL (Corpak) – single use
     • Short term tubes can remain in situ for up to 28 days.
     • Long term tubes can remain in situ for up to 60 days.
  3. Corflo (Corpak)
     • These are single patient use.
     • Long term tubes only stocked. These can remain in situ for 4-6 weeks.

• Single Use tubes – these should only be passed once and if displaced/removed, should not be reinserted. If when first inserting the tube it is unsuccessfully placed, the same tube can be used again but only if the guidewire has not been removed or aspirate attempted.

• Single Patient use tubes – these are licenced for repeat use and can therefore be repassed if displaced. However, if a tube is to be repassed, staff must ensure the tube is properly cleaned/flushed before being re-sited which will eliminate the risk of pH results being gained that could suggest the tube is in the correct position when it was not. Refer to manufacturers guidelines.

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DOCUMENTATION

- The Medical Team must document the rationale for an NGT or OGT in the medical notes, including discussions held with parents or carers and the multi-disciplinary team.

- Document date and time of tube insertion and the date the tube must be replaced.

- Document make, size (fr), length (cm) of NGT, NEX / lips to xiphisternum measurement, and insertion length (read length at the nostril) in the Core Care Plan or Nutrition Care Plan (NICU).

- Document each pH value obtained on the patient's daily fluid chart.

ONGOING CONFIRMATION OF TUBE PLACEMENT

- Adhere to Policy for insertion, confirmation of position and removal of naso-gastric and oro-gastric fine feeding tubes.

- Confirm correct placement before each use of the tube to give feed, fluids or medications, or if there is concern i.e. vomiting, coughing, retching or suspicion the tube has moved.

- Continuous feeds, aspirate and check pH four hourly or at feed changes (whichever occurs first).

- pH testing must be used as first line. A pH < 5.5 confirms correct placement. If unable to obtain gastric aspirate, refer to flow chart for the positioning of nasogastric and orogastric tubes.

- Choose the largest purple enteral syringe possible to aspirate and flush a tube (this will reduce the risk of tube rupture and vacuum trauma):
  - 10 - 20ml for neonates (28 days and under)
  - 20 - 60ml all other children

- Medications (e.g. Ranitidine, Omeprazole) can reduce the acidity of gastric aspirates. Discuss with the Medical Team if there is doubt over a pH reading and ensure they document acceptable pH ranges in the notes. Refer to the flowchart above if recordings are outside these limits.

- Check adhesive tape is secure. If there is concern the tube has dislodged, compare the tube position to the initial insertion length and re-check pH to confirm correct placement.

- Assess skin integrity around the nostril or mouth four hourly for signs of pressure necrosis. If redness is seen, try securing the tube to a different area of skin or repositioning to other nostril.
ADMINISTERING FEEDS AND FLUSHES

- Follow instructions on the Dietitian’s yellow feed plan. If the Dietitian is not able to assess the patient, follow the Out of Hours Emergency Nasogastric Gastrostomy Feeding Regimen (this must be authorised by the Consultant).

- Use a new 60ml purple enteral syringe to administer each gravity bolus feed. Refer to Enteral Feeding Guidelines (Paediatric) ‘how to administer bolus feeds’

- Continuous feeding will take place over a number of hours in the day and/or night. Refer to Enteral Feeding Guidelines (Paediatric) ‘how to administer continuous feeds’

- Flush with 5 – 10ml sterile water (adjust to child’s age / size) or the amount advised by the Dietitian before and after each feed (exception NICU - flushing not advised)

- Use a new 60ml enteral syringe (10 – 20ml for neonates) for each episode of flushing (i.e. before and after a feed)

- Flush 4 - 6 hourly if the tube is not used routinely to reduce risk of blockages (exception NICU)

- Administer flushes with a ‘push pause’ technique to create turbulence and minimise blockage

- Never use vigorous pressure when administering a liquid through a feeding tube

- Assess continued need for a tube and if no longer necessary remove as per NGT policy

ADMINISTERING MEDICATIONS

- Refer to Enteral Feeding Guidelines (Paediatric) ‘how to administer medications’

- Flush with sterile water before and after each medication as advised above (exception NICU)

- Choosing the largest enteral syringe size possible (60ml or 10 – 20ml for neonates) and use a new syringe for each episode of flushing

- Medications may be administered in smaller size syringes if the dose is very small

ORAL HYGIENE

- If the patient is not able to take oral fluids, give mouth care every 2 – 4 hours to prevent their mouth getting very dry, and brush their teeth as usual

Extended until September 2020
REDUCING THE RISK OF ASPIRATION AND STRANGULATION

- Position the infant or child on their back or right side with feet on the foot of the cot or bed
- Elevate the head of the cot or bed by 30 – 45 degrees, or sit the patient upright during feeding and for 30 – 60 minutes after feeding has finished to minimise nausea and reflux
- Keep tubing away from the infant or child’s head by positioning an NGT over the ear and threading down the back of the baby-gro or pyjamas
- Place the enteral feeding pump at the head of the cot/bed and thread tubing through the bars
- Patients on continuous feeds must be nursed in an easily observable bed. Babies must be nursed on an apnoea monitor (monitor saturations if the apnoea monitor is unavailable)
- If there are signs of retching, vomiting, or coughing spasms, stop feeding immediately. The tube may need to be removed if this continues
- If the patient settles down fairly quickly, confirm correct tube position again before starting to feed, as the tube may have become displaced

DISCHARGING A PATIENT HOME WITH AN NGT

- Parents or carers must be educated in safe care of a child with an NGT using the Nasogastric Tube Teaching Pack, and signed off as competent prior to discharge by Nursing Staff
- The signed ‘competency summary sheet’ in the Nurse section is then filed in the medical notes
- Follow the flowchart ‘Discharging a patient home with a nasogastric tube’ (in the teaching pack)
- If the patient is on continuous overnight feeds, the Dietitian must liaise with the local home enteral feeding team to confirm whether this will be supported at home
- If overnight feeding can be supported, a Nurse must complete a ‘Risk Assessment for Overnight Feeding’ (copy in teaching pack) and return to the Dietitian prior to discharge. If this will not be possible, a suitable day feeding regimen must be agreed with the Consultant
- For patients living in the Bristol area (under Home Management Services)
  - The Nurse must complete a ‘Bristol NG referral form’ (in the teaching pack) and return to Dietitian together with a completed risk assessment for overnight feeding if required
  - Parents or carers must be taught to aspirate, flush and bolus feed with a 60ml enteral syringe prior to discharge (community policy)
  - Parents or carers must be informed that they will receive reusable enteral syringes at home (unless under 1 year of age or immune compromised)
  - Parents or carers must be informed to use freshly run tap water at home (unless under 1 year of age or immune compromised)

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ACCOUNTABILITY

• Unregistered practitioners, identified individually at the Ward Manager’s discretion, who have attended training and have been assessed as competent may undertake insertion of tubes, test for correct placement and administer feeds, but **not** medications

• Student nurses who have attended Trust training and have been assessed as competent, may under **DIRECT** supervision of a registered Nurse undertake insertion of tubes, test for correct placement, and administer feeds, but **not** medications

• Overall responsibility and accountability lies with the registered Nurse to confirm the placement of the gastric tube before use by observing aspirates, pH, and documentation
# TROUBLESHOOTING

<table>
<thead>
<tr>
<th>Complication</th>
<th>Potential causes</th>
<th>Possible actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tube blocks</strong></td>
<td>• Medications</td>
<td>▪ Squeeze visible blockages between fingers to break them up, then attempt to aspirate again with a 60ml syringe (20ml for neonates)</td>
</tr>
<tr>
<td></td>
<td>• Not enough water flushes</td>
<td>▪ Do not put anything down the tube unless able to aspirate and confirm position</td>
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<tr>
<td></td>
<td></td>
<td>▪ Apply gentle suction intermittently, whilst attempting to flush air down the tube</td>
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<td></td>
<td></td>
<td>▪ Review medications - what form they are in, how they are being diluted and administered</td>
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<tr>
<td></td>
<td></td>
<td>▪ If unable to test tube position an X-ray may be required or a new tube</td>
</tr>
<tr>
<td></td>
<td>• Medications</td>
<td>▪ Review medications e.g. antibiotics with the Pharmacist. Some may need to be diluted</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>• Infection</td>
<td>▪ May require stool samples and isolation (discuss with the Medical Team)</td>
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<tr>
<td></td>
<td>• Feed given too fast</td>
<td>▪ Slow feeding rate to half the prescribed rate, then increase as tolerated again</td>
</tr>
<tr>
<td></td>
<td>• Feed stored incorrectly</td>
<td>▪ Check expiry date (powdered feeds/feeds with additives can hang no longer than 4 hours)</td>
</tr>
<tr>
<td></td>
<td>• Type of feed</td>
<td>▪ Throw away any leftover feed after 24 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Contact the Dietitian to review the feeding plan if none of the above solutions help</td>
</tr>
<tr>
<td><strong>Vomiting and/or nausea</strong></td>
<td>• Feed given too fast</td>
<td>▪ Slow feeding / bolus rate to half the prescribed rate, then increase as tolerated again. Discuss continuous feeding with the Dietitian</td>
</tr>
<tr>
<td><strong>High gastric aspirate volume/pH</strong></td>
<td>• Child laid flat</td>
<td>▪ Prop the patient upright during feeding by 30 – 45 degrees and for 30 – 60 minutes afterwards</td>
</tr>
<tr>
<td></td>
<td>• Constipation</td>
<td>▪ Ensure fluid intake is adequate. Discuss feed choice with the Dietitian. Consider laxatives</td>
</tr>
<tr>
<td></td>
<td>• Cold feeds may cause nausea</td>
<td>▪ Remove feeds from the fridge 30 minutes before the feed is due. Do not warm tube feeds</td>
</tr>
<tr>
<td></td>
<td>• Medication timings</td>
<td>▪ Review timings/efficacy of anti-reflux drugs and allow time between giving medicines and feeds</td>
</tr>
<tr>
<td></td>
<td>▪ Slow gastric emptying</td>
<td>▪ Review with the Medical Team whether to start prokinetics or consider naso-jejunal feeding</td>
</tr>
<tr>
<td></td>
<td>• pH - medications</td>
<td>▪ Review with the Pharmacist and Medical Team</td>
</tr>
<tr>
<td><strong>Unable to obtain an aspirate</strong></td>
<td>• Blocked tube</td>
<td>▪ Refer to: <a href="#">Flow Chart For The Positioning Of Nasogastric And Orogastric Tubes</a></td>
</tr>
<tr>
<td></td>
<td>• Limited gastric contents</td>
<td>▪ Flush the tube with 5 - 10ml of air</td>
</tr>
<tr>
<td></td>
<td>• Position of tube in the stomach</td>
<td>▪ Ensure entry points are closed (long term tubes) and check the integrity of the tube end</td>
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<tr>
<td></td>
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<td>▪ If safe to do so, and not nil by mouth, ask the patient to drink some water and try again</td>
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<tr>
<td></td>
<td></td>
<td>▪ Change the patient’s position, turn them onto their side or sit upright if appropriate</td>
</tr>
<tr>
<td><strong>Tube displacement</strong></td>
<td>• Vomiting / coughing spasms / retching</td>
<td>▪ Stop feeding. Confirm tube position. Remove the tube if altered respiration/low sats/cyanosis</td>
</tr>
<tr>
<td><strong>Pump malfunction</strong></td>
<td>Several causes</td>
<td><a href="#">Nutricia Flocare Infinity Pump Main Manual</a></td>
</tr>
<tr>
<td><strong>Tube falls out</strong></td>
<td>Several causes</td>
<td>▪ A new tube will need to be passed to allow feeding to resume without much interruption</td>
</tr>
</tbody>
</table>
APPENDIX 1

FLOW CHART FOR THE POSITIONING OF NASO GASTRIC AND ORO GASTRIC TUBES

Auscultation should NOT be used to determine placement of gastric tubes. EVERY element of the flow chart MUST be followed.

In order to confirm position of gastric tube following insertion of tube, patient coughing or vomiting, re-positioning of tube and prior to administration of medication or fluids.

Aspirate – Neonates / Children: use a 10 or 20ml enteral syringe 
Adults: use a 50 ml enteral syringe

Aspirate obtained

Place sample on pH paper

pH 5.5 or below

Gastric tube placement confirmed

Document: Length of tube of initial insertion 
PpH of aspirate

Check tube length 
Check type of aspirate- Use 2nd competent check if pH difficult to differentiate between 5-6

Consider re-passing tube 
Check medication 
Consider X-ray (see policy section 4.4)

Proceed to use

Aspirate obtained

If possible, turn patient onto side 
Re-aspirate & check pH

No aspirate

Neonate: Inject 1 – 2ml air into tube 
Child: Inject 3 - 5ml air into tube 
Adult: Inject 10ml air into tube 
Re-aspirate & check pH

No aspirate

Advance/retract gastric tube 
Re-aspirate & check pH

Is re-passing the tube contraindicated?

Yes – discuss with medics/senior nurse 
Document rationale for decisions

No – re-pass tube 
Document rationale for decisions
REFERENCES


RELATED DOCUMENTS

- Policy insertion, confirmation of position and removal of naso-gastric and or o-gastric fine bore feeding tubes
- Flow Chart For The Positioning Of Nasogastric And Orogastric Tubes
- Competency for Administration of Bolus Nasogastric/Orogastric (NGT/OGT) Tube Feeds in Neonates, Paediatrics and Adults
- Competency For Insertion And Confirming Position Of Naso Gastric And Oro Gastric Tubes
- Enteral Feeding Infection Control Guideline
- Enteral Feeding Guidelines (Paediatric)
- Nasogastric Tube Teaching Pack
- Nutricia Flocare Infinity Pump Main Manual

SAFETY

- Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants (NPSA 2011)
- Harm from flushing of nasogastric tubes before confirmation of placement RRR (NPSA 2012)
- The risk of harm from children/neonates entangled in lines (NPSA 2012)

QUERIES

Paediatric Nutrition and Dietetic Services, extension 28802

Extended until September 2020