ENTERAL TUBES

NASOGASTRIC TUBE- INSERTION

Keywords: NGT, nasogastric, enteral, insertion, pH, aspirate, confirm tube placement

**INSERTION OF A NASOGASTRIC TUBE (NGT) QRG**

**Pre-procedure:**
1. **Prepare** the equipment, explain the procedure, reassure & assess the woman, & provide privacy. Confirm the woman’s identity. Position the woman sitting & ask her to blow her nose if needed.
2. **Perform hand hygiene** & put on gloves / PPE.
3. **Select a patent nostril.** If ordered, apply intranasal anaesthetic & wait for 5 minutes.
4. Uncoil the NGT & measure from the nose tip to the ear lobe to the xiphoid process.
5. **Lubricate** the first 10cm of the NGT.

**Insertion:**
6. **Tilt** the woman’s head back and **pass** the tube slowly along floor of cavity. At the nasopharynx tilt head forward and ask the woman to swallow / drink as NGT advances down oesophagus to the pre-measured mark.
   - Mild resistance may occur; do **not** advance against significant resistance.
7. **Aspirate** 0.5-1mL & test on pH strip. If correct placement pH is <5.5.
   - If unable to aspirate: Turn the woman onto her side; inject 10-20ml air; wait 15-30mins & try again; advance the NGT by 10-20cm (adults); consider x-ray (contraindicated if pregnant).
   - If aspirate pH >5.5 or any doubt about placement: **Do not feed.** Seek medical advice.
8. If aspirate pH <5.5 wipe nose with tissue, and **secure** NGT with tape. May use safety pin to attach to woman’s clothing.
9. Spigot NGT or attach to a drainage system.

**Post-procedure:**
10. Reposition the woman, **discard the equipment** appropriately and **perform hand hygiene.**
11. **Document** in the medical records (date, time, reason of insertion; type, size, length of NGT; nostril used, number of attempts; any complications; method of placement confirmation)
12. Regularly check & provide nostril **pressure care.**
13. Provide advice & assistance with mouth care while the NGT is insitu.
14. **Confirm tube placement** regularly before feeds / meds & at least every 24 hours and after any events (e.g. coughing fit, suction, vomiting) where movement may occur.

**AIMS**
- To aspirate and drain gastric contents for diagnostic / therapeutic reasons.
- To administer fluid / medication.
- To maintain adequate nutrition.

**BACKGROUND**
A reliably obtained and interpreted radiograph that visualises the entire course of the tube provides the best evidence of correct tube placement. If results from pH testing do not support correct positioning, the tube can be removed, reinserted and retested – thus keeping the number of x-rays to a minimum. While the risk of respiratory placement is low, the potential consequences of incorrect tube placement can be catastrophic.
KEY POINTS

1. The insertion of a nasogastric tube must be ordered by a medical officer.¹
2. All enteral tubes must be checked before each use to ensure placement in the woman’s stomach.²
3. Only tubes that are radio-opaque shall be inserted.³
4. Current evidence suggests that neither litmus paper tests nor insufflations of air into the stomach are accurate indicators of tube position.²,³
5. X-ray is the gold standard method of checking tube placement but it is not realistic for all tube placements. A stomach aspirate with pH is considered the most reliable after x-ray.²
6. Antacid medication or continuous feeds may raise the gastric pH.
7. Ryle’s tube, nelaton and other clear tubes are changed weekly. These tubes are not suitable for nasogastric feeding; they are used to drain gastric contents for diagnostic / therapeutic purposes. Silastic and other opaque feeding tubes are normally changed every three months. Should one of these tubes be removed / dislodged before this time, it may be rinsed and reinserted.
8. Insertion requires training as misplacement can lead to complications.⁴ No more than 3 attempts at nasogastric tube insertion shall be made by one nurse / midwife.¹,²
9. For some women, the Medical Officer is required to insert / replace the NGT (under fluoroscopic guidance or laryngoscopic visualisation).² Women with the following health conditions may require referral to a specialist team i.e. ENT or radiology for consideration of their suitability of a nasogastric tube insertion⁵:
   - Maxillo – facial disorders, surgery or trauma
   - Oesophageal tumours, fistula or surgery
   - Laryngectomy
   - Skull / facial fractures
   - Head, neck or gastric surgery / trauma
   - Tracheostomy
   - Women who are known to have coagulopathy and receiving anticoagulant medication or known to have oesophageal varices without first taking advice from senior medical staff.²
10. A fluid balance chart will indicate all intake and output over a 24 hour period and will be maintained for women who are receiving enteral feeds.¹

EQUIPMENT ⁵

- Drainage bag or enteral administration set, if needed
- Oral / enteral syringe 20ml or 50ml x 2
- Lubricant (water soluble)
- Vomit bowl
- Adhesive tape (Fixomul or similar)
- NGT (Consider duration of use & why tube needed e.g. gastric drainage, feeding or medication)
- Glass of water (only if the patient is not Nil by mouth / fasting) & straw.⁵
- Non sterile disposable gloves / PPE
- pH indicator strips - non bleeding
- Safety pin (to attach tube to clothing)
- Tissue & towel / absorbent sheet
- Penlight / torch

Additional equipment which may be required:
- Local anaesthetic if prescribed on MR810
- Spigot, specimen container and Laboratory request form.
### PROCEDURE

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Explain the procedure, reassure the woman, assess her ability to co-operate, provide privacy &amp; prepare equipment.</td>
<td>Provides reassurance and enhances compliance. Discuss medical history for conditions that may affect insertion. Clear nostrils improve visualisation.</td>
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<tr>
<td>2</td>
<td>Encourage the woman to blow her nose.</td>
<td>Assists choice of which nostril for NGT insertion, and size of tube.</td>
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<td></td>
<td>Check the nostrils are clear and clean if necessary.</td>
<td>Nasal polyps, a deviated septum or narrow passage are contraindications for tube placement by nursing / midwifery staff.</td>
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<td>Check the patency of the nasal passages with a torch / penlight.</td>
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<td>3</td>
<td>Choose a nostril for intubation.</td>
<td>Choose the more patent nostril for comfort.</td>
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<td>4</td>
<td>If ordered by the RMO, instil intranasal local anaesthetic spray/drops into the selected nostril.</td>
<td>Local anaesthetic decreases discomfort &amp; encourages patient cooperation.</td>
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<td>5</td>
<td>Allow 5 minutes for the drops to take effect.</td>
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<td>6</td>
<td>Position the woman sitting upright* with neck &amp; head well supported if not contraindicated.</td>
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<td>7</td>
<td>Uncoil the tube.</td>
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<td>8</td>
<td>Using the tube, measure from the nose tip to the ear lobe, ear lobe to the xiphoid process of the sternum.</td>
<td>The distance between these anatomical landmarks is approximately equal the length of tube needed to attain correct position. Add another 5cm to the length, if needed.</td>
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<td>9</td>
<td>Lubricate the first 10cm of tube with water based lubricant.</td>
<td>Ice may be used to ‘firm up’ the end of tube to aid insertion.</td>
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<td>10</td>
<td>Tilt the woman’s head back &amp; pass the tube slowly along the floor of the nasal cavity.*</td>
<td>Mild resistance may occur, do not advance the tube against significant resistance. Excessive gagging, choking, coughing or respiratory distress may indicate tracheal placement, withdraw the tube and allow the woman to rest before attempting again.</td>
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<td>11</td>
<td>Cease passage at pre-determined mark.*</td>
<td>At this distance the tube reaches the stomach. Measuring the pH of withdrawn fluid is helpful in differentiating between respiratory and gastric placement when gastric pH is low.</td>
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<td>12</td>
<td>Following insertion, aspirate 0.5 to 1mL of fluid and apply aspirate to pH indicator strip, if correctly placed the pH should be 5.5 or below.</td>
<td>Location of the tube against the gastric mucosa will make aspiration difficult. Insufflating air through the tube before attempting to withdraw fluid may cause the tube to relocate within the stomach and increase the probability of success.</td>
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<td>13</td>
<td>If unable to aspirate gastric contents.*</td>
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<td><strong>Turn patient onto side</strong></td>
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<td><strong>Inject 10 to 20mL of air using a 20ml or 50mL syringe</strong></td>
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<td><strong>Wait 15 - 30 minutes &amp; try again. Check medications (some increase pH levels of gastric contents e.g. H2 antagonists, proton pump inhibitors &amp; antacids)</strong></td>
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</tbody>
</table>
**PROCEDURE**

- Advance the tube by 10 to 20 cm (adults)
- Consider x-ray.³

14. If aspirate pH > 5.5 or if in doubt about the position **do not feed**³
- Seek medical advice.

15. If confirmation of position of the feeding tube by x-ray is sought:
- Check whether the woman is pregnant.

16. Document the pH of the initial aspirate.
   **If the aspirate is pH 5.5 or below, use tissue to dry nose & secure the tube with tape.⁵**
- A pH of 5.5 or less indicates the tube tip is in a gastric location.
- Taping the tubes promotes patient comfort and minimises the risk of the tube becoming dislodged. The tape or safety pin can attach the NGT to the woman’s clothing or bedding.⁵

17. Spigot the tube or attach to drainage system.⁵

18. Reposition the woman, dispose of equipment as appropriate, perform hand hygiene & document⁷ the following in the woman’s notes:
   - Date, time and reason of insertion,
   - Type, size & length of tube,
   - Nostril tube inserted in,
   - No of attempts required,
   - Any complications &
   - Method of placement confirmation.

19. Check & provide regular nostril pressure area care.¹
- Prevents trauma to the nostril.¹

20. Tube placement must be checked:
   - Following insertion³
   - Prior to each bolus feed³
   - Following a break in continuous feeding
   - Prior to medication administration³
   - After oropharyngeal suction
   - After a coughing fit³

**ADDITIONAL INFORMATION**

- The tube may move into the stomach if originally in the oesophagus.³
- X-ray is contraindicated in pregnancy.
- When gastric pH is > 5.5, using pH to predict tube placement is of no benefit.
- Furthermore pH of a feeding tube cannot identify if it is in the oesophagus. The oesophageal pH may be as low as 1 because of refluxed gastric fluid, or as high as 7 probably due recently swallowed saliva.
- X-rays to confirm the position of a feeding tube are contraindicated in pregnant women.
- A pH of 5.5 or less indicates the tube tip is in a gastric location.
- Taping the tubes promotes patient comfort and minimises the risk of the tube becoming dislodged. The tape or safety pin can attach the NGT to the woman’s clothing or bedding.⁵
- Allows intermittent access or facilitates continuous drainage.
- Recheck the tube placement at least every 24 hours and before starting a feed or administering medication.³, ⁶
- It is important to check NGT length when visible tube displacement (e.g. loose tape or longer external tube).³
PROCEDURE

- After altering external length of tube
- Post vomiting
- If complaining of discomfort or food reflux in throat / mouth
- Sudden signs of respiratory distress
- After an interdepartmental transfer.

ADDITIONAL INFORMATION

REFERENCES (STANDARDS)


National Standards – 1 Clinical Practice
Legislation - Nil

Related Guidelines/Policies – KEMH Clinical Guidelines:
- O&G: Enteral Tubes
- Pharmacy: Medication Safety: Administration of Medications: Administration of oral, enteral, rectal or nebuliser liquids

Other related documents – Nil

RESPONSIBILITY

OGCCU / Dietetics

Policy Sponsor
Nursing & Midwifery Director OGCCU

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August 1993

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May 2014

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January 2015

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