

INTRAGASTRIC TUBE INSERTION AND MAINTENANCE

This LOP is developed to guide safe clinical practice in Newborn Care Centre (NCC) at The Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this Local Operations Procedure (LOP).

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INTRODUCTION

Intragastric tubes are used for administering feeds, medications and venting the stomach.

1. AIM

- To correctly insert an indwelling gastric tube in neonates.

2. PATIENT

- Newborns

3. STAFF

- Medical and nursing staff

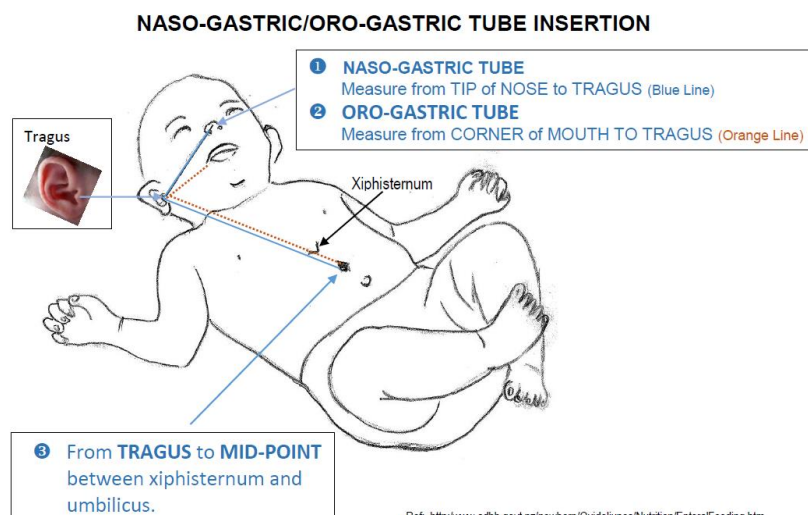
4. EQUIPMENT

- Size 5 Fr feeding tube (L – 125cm) for feeding <3000g infant
- Size 6 Fr feeding tube (L – 125cm) for feeding >3000g infant
- Size 6-8 Fr (L – 125cm) for venting
- 25% Oral Sucrose
- Clinical Procedure Safety Checklist
- Comfeel
- 1 sachet Skin barrier film
- 1 cm wide Leukoplast
- Clean pair of scissors
- Precision pH Test strip
- 5 mL syringe

5. CLINICAL PRACTICE

Procedure:

1. Explain the procedure to parents (if present).
2. Check and confirm the infant's identity using 2 patient identifiers.
3. Complete the Clinical Procedure Safety Checklist Level 1 (R1).
4. Collect equipment.
5. Wash hands.
6. Measure distance of IGT for insertion (R 2) – refer to Picture.



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7. Wrap infant in a sheet to provide comfort.
8. Administer oral sucrose.
9. Cut Comfeel and leukoplast to desired length to secure IGT.
10. Remove IGT that is in situ and Comfeel on the skin if changing an IGT.
11. Clean skin and apply skin barrier film prior to Comfeel application. Allow to dry (R3).
12. Apply Comfeel to skin.
13. Gently insert IGT down the nasal/oral passage to the measured length.
14. Aspirate 0.1 -0.2 mL of gastric fluid using 5 mL syringe (R4).
15. Apply gastric fluid to Precision pH test strip – Check colour change on strip with the colour chart on the bottle for pH to be at ≤ 5.5 .
16. Secure IGT to the side of the face (for the nasal route) *or* on cheek (for the oral route).
17. Place IGT on top of the Comfeel and apply the leukoplast to secure. Ensure the leukoplast does not attach on the infant's skin or hair.
18. Clean and discard equipment appropriately.
19. Sign addressograph label by 2 nurses and attach to IGT.
20. Document procedure in the Nursing Care Plan and Progress notes.
21. Wash hands.

When an aspirate CANNOT be obtained from an IGT

- Use a size 10mL syringe to obtain gastric residual.
- Reposition the infant to left side to re-aspirate (R5).¹⁶
- Wait 1-5 minutes before trying again to obtain aspirate.
- Replace IGT if all of above did not allow aspirate to be obtained.

Standard of Practice for Verification

An Abdominal x-ray to check IGT position is not a routine practice to avoid exposure to radiation. However, if an abdominal x-ray has been prescribed for any medically indicated reasons, check the IG tube position at the same time.

Alternatively, verify IGT placement with 3 of the following:

- Confirm the marking on the tube at nares/mouth.
- Aspirate small amounts of gastric contents (R 6).
- Test pH of aspirate. Reading should be 5.5 or below, generally 1-4. (R 7).

When to check IGT position:

The IGT position should be checked and documented:

- Following initial insertion
- Before administering each feed
- Before giving medication
- Following vomiting, retching or coughing (*absence of coughing does not rule out misplacement or migration*)
- If tapes are loose or the visible tube appears longer or kinked indicating possible tube displacement.

Removal of IGT

- Verify medical order.
- Inform parents.
- Follow hand hygiene precautions.
- Gently withdraw the tube.
- STOP withdrawing if any resistance and inform the medical staff for further advice. Resistance indicates kinking, obstruction or knot formation of the IGT and forceful withdrawal may damage and tear the gastric or oesophageal mucosa.

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- Integrated Clinical Notes
- Daily Care Plan
- Observation Chart

7. EDUCATIONAL NOTES

- All neonates can maintain a gastric pH of below 4 from the first day of life.⁷
- As the infants became more mature, both in terms of gestation and postnatal age, there was a decrease in intragastric pH from median (range) 3.7, 2.5 (0.6–3.9) and 1.8 (1.3–2.6) for infants of 24–25, 26–27 and 28–29 weeks' gestation, respectively on the first day of life to 1.8 (1.7–1.9), 2.0 (1.8–2.3) and 1.7 (1.5–2.0) on day 16.⁷
- Gastric acid secretion in the newborn preterm infant should allow normal proteolytic activity and the well-recognised clinical problems of intragastric bleeding, gastritis or oesophagitis may be attributable to intragastric acid.⁷
- Nasogastric tube position: Common measurement techniques used to place a nasogastric tube include measuring from the tip of the nose to the earlobe and then to the xiphoid process (NEX-method); from the tip of the nose to the earlobe to midway the xiphoid process and umbilicus (NEM-method); and from the tip of the nose to the earlobe to the umbilicus method (NEU-method).^{8,9,10}
- Proper position is defined as tube tip 17 mm or more below the gastroesophageal junction (i.e. both orifices of the feeding tube in the stomach) and not bending or curling in the stomach.¹¹
- Placement within the stomach using the auscultatory method (insufflation of air while auscultating for a gurgling sound over the epigastrium) is unreliable.¹³ Confirm the tube position by pH testing of the gastric residuals. Normal pH is 1-4 (<5.5). However, median pH of gastric content can be higher (2.77-9.58) immediately after birth due to amniotic fluid in the stomach.¹⁷
- pH testing can be unreliable in neonates on anti-reflux medications such as Proton Pump Inhibitors (e.g. omeprazole, pantaprazole) or H2-Blockers (e.g. ranitidine).¹⁴ However, the pH method is less effective in distinguishing between intestinal and respiratory fluids because both have higher pH values.¹⁵
- Soft, small-bore NG tubes are less likely to cause complications and also reduce the risk of aspiration because the lower esophageal sphincter is less compromised, decreasing the risk of reflux, but they may migrate out of position, knot, occlude, or rupture.¹⁵ Negative pressure generated when attempting to aspirate fluid from these soft tubes can cause these flexible NG tubes to collapse.
- A prospective randomized controlled trial demonstrated right lateral decubitus position leads to less gastric residuals and better gastric emptying compared to supine or left lateral position.¹⁶

8. RELATED POLICIES/PROCEDURES/CLINICAL PRACTICE LOP**9. RISK RATING**

- Low

10. NATIONAL STANDARD

- Standard 11 Provision of care

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11. ABBREVIATIONS AND DEFINITIONS OF TERMS

NCC	Newborn Care Centre	IGT	Intragastric Tube
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12. RATIONALES

R 1	Documentation allows for referencing of procedure and record-keeping.
R 2	Correct measurement minimises risk of accidental infusion of milk into trachea.
R 3	To provide adherence of the duoderm/comfeel to the skin and to maintain skin integrity.
R 4	To obtain a small specimen for testing.
R 5	To allow the stomach content to pool.
R 6	To check that there are aspirates from the stomach.
R 7	Infants on H ₂ receptor antagonist, antacids or a proton pump inhibitor will increase the pH value and therefore make the reading unreliable. Tube feeding will also falsely increase the pH reading

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**14. AUTHOR
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Primary		04/11/2005	K. B. Lindrea (CNC)
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