SILASTIC TUBES (GASTRIC AND TRANSPYLORIC)

This Local Operating Procedure 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 Operating Procedure.

INTRODUCTION

Placement of a polyurethane silastic tube may be indicated in infants who require longer term management of enteral feeding as these tubes can be left in place for up to 4 weeks, meaning less frequent changes. Silastic tubes may also be indicated for infants who are either being discharged home with ongoing enteral feeding needs or are part of the Home in Partnership Initiative (HiPi) program. Silastic tubes can be inserted nasogastric or orogastric and can also be passed deeper as a transpyloric tube (TPT), which may be indicated in infants with poor stomach emptying or severe gastro-oesphageal reflux.

1. AIM

- To ensure safe insertion, placement, ongoing access of gastric and transpyloric silastic tubes.
- To ensure safe feeding and administration of medications through silastic tubes.

NOTE:
Parents must be trained in the management of silastic tubes prior to discharge home or prior to starting on HiPi program.
Tube positioning via x-ray must be confirmed for transpyloric placement before commencing feeds. If there is any concern about the placement of the silastic tube, DO NOT ACCESS. X-ray should be taken to confirm position of tube and reviewed by medical officer or nurse practitioner.

2. PATIENT

- Newborns

3. STAFF

- Medical and nursing staff.

4. EQUIPMENT

- Enteral polyurethane feeding tube with stylet – 6Fr 91cm.
- Sterile water for injection ampoule
- 10ml syringe
- Comfeel and tape
- Clean gloves
- Water soluble lubricant
- Sucrose
- Enteral feeding adapter

5. CLINICAL PRACTICE

Insertion

Gastric Silastic Tube

1. Confirm the request for silastic tube placement.
2. Perform hand hygiene and collect equipment.
3. Prepare the silastic tube by flushing tube with 2 mL sterile water. This helps to lubricate the inside of the tube, making it easier to remove the guide wire after insertion.

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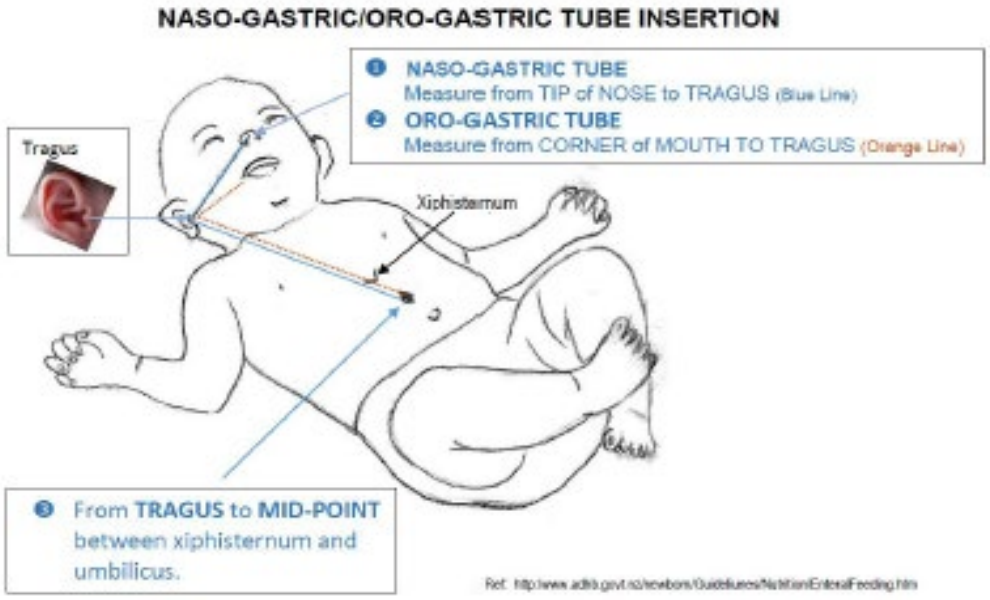
4. Perform hand hygiene.

5. Determine if the gastric tube is to be inserted via nasal (recommended and preferred) or oral (e.g. choanal atresia, nasal CPAP) route.
   a. Nasogastric: Measure the depth of insertion of tube by measuring the distance from the nare to tragus to the midpoint between xiphisternum and umbilicus (Picture 1).
   b. Orogastric: Measure the distance from the lower lip to the point half way between the xiphoid process and umbilicus (Picture 1).



Picture 1

6. Wrap infant and provide comfort measures including sucrose administration.
7. Ensure all taping for securing tube is cut.
8. Perform hand hygiene and don gloves.
9. Clean skin and apply barrier wipe to cheek.
10. Lubricate tip of silastic tube.
11. Insert silastic tube to previously determined depth of insertion.
12. Remove guidewire gently ensuring to not dislodge tube placement as wire is retracted.
13. Attach 10 mL or 20 mL oral syringe and gently aspirate 0.5 mL of gastric content. Test gastric content to ensure pH <5.
14. Secure silastic tube with pre-cut taping. A marking can be made on the tube at the nare to allow easy visual inspection of tube positioning in the nare.
15. Discard equipment, remove gloves and perform hand hygiene.
16. Affix patient identification label to silastic tube. Confirm patient label with two staff members or parents.
17. Document final depth of insertion in infants care plan and progress notes.
18. Gastric silastic tubes should be replaced every 4 weeks.

<u>Transpyloric Tube</u>

1. Confirm request for transpyloric tube placement.
2. Feeds should be stopped at least 2 hours prior to insertion to aid stomach motility and prevent vomiting.

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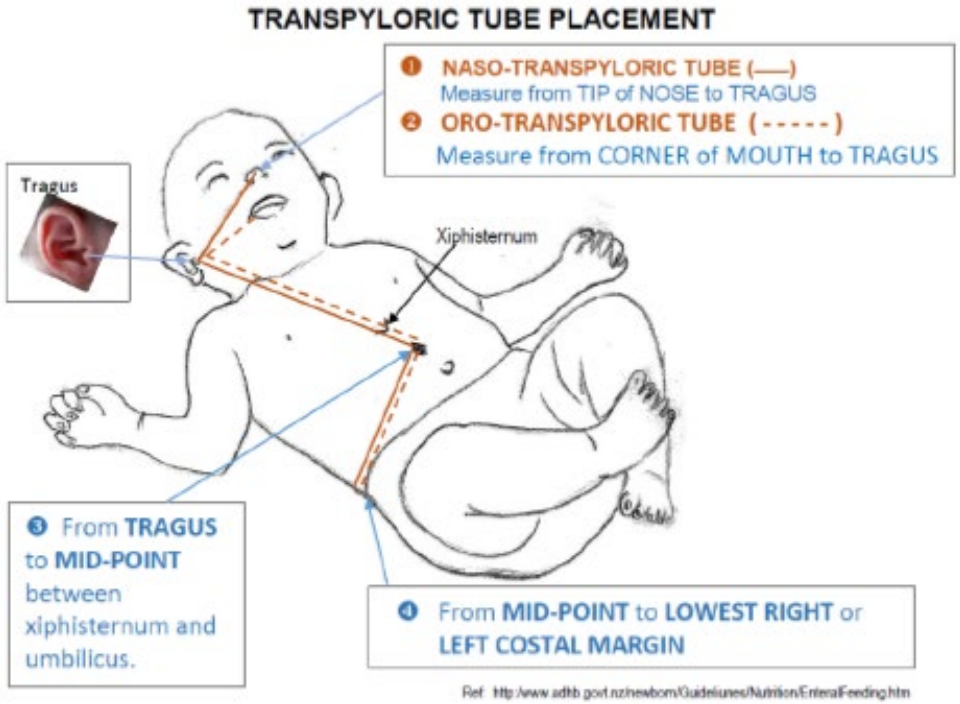
3. Elevate the head of bed to a 30-45 degree angle.
4. Perform hand hygiene and collect equipment.
5. Determine if the TPT is to be inserted via nasal (recommended and preferred) or oral (e.g. choanal atresia, nasal CPAP) route.
   a. Nasogastric TPT: Measure the depth of insertion of tube by measuring the distance from the nare to tragus to the midpoint between xiphisternum and umbilicus. This is the gastric mark (for naso-gastric tube). From the gastric mark, measure the distance from gastric mark to the lowest left or right costal margin. This is the length of tube needed for TP feedings (Picture 2).
   b. Orogastric TPT: Measure the distance from the lower lip to the point half way between the xiphoid process and umbilicus. This is the gastric mark (for naso-gastric tube). From the gastric mark, measure the distance from gastric mark to the lowest left or right costal margin. This is the length of tube needed for TP feedings (Picture 2).
6. Perform hand hygiene.
7. Wrap infant and provide comfort measures including sucrose administration.
8. Ensure all taping for securing tube is cut.
9. Perform hand hygiene and don gloves.
10. Clean skin and apply barrier wipe to cheek.



Picture 2

11. Place comfeel on cheek to protect infant skin.
12. Lubricate the end of the silastic tube.
13. Prepare the silastic tube by flushing with 2 mL sterile water for injection. This helps to lubricate the inside of the tube, making it easier to remove the guidewire after insertion.

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14. Mark the silastic tube final insertion length (pyloric mark) with a small strip of leucoplast to provide landmark for insertion.
15. Identify standard gastric mark (gastric depth of insertion) as above for landmark reference. With the infant lying supine, gently place the silastic tube through the nares/mouth and insert the tube to the gastric mark.
16. Remove the guidewire gently, ensuring not to dislodge tube placement.
17. Slowly continue to advance the tube 1-2 cm every 2 minutes until you have reached the pyloric mark. Pausing between advancements of tube will aid the appropriate peristalsis through the pylorus.
18. Place the infant onto right side for 30 minutes – this aids the peristaltic passage of the tube tip allowing it to pass into the intestine. DO NOT reinsert the guidewire under any circumstances.
19. Secure the silastic tube with taping on top of Comfeel.
20. Perform hand hygiene.
21. Wait for 30-60 minutes and then confirm tube position with x-ray. Do not access tube until position has been confirmed on x-ray by medical team.
22. Document final depth of insertion in infant's care plan and progress notes.
23. Affix patient label to tube. Confirm patient label with two staff members or parents.

Checking Tube Positioning

Gastric Tube

1. A gastric placed silastic tube should be aspirated and have a pH check each time the tube is accessed for a feed or medication to ensure tube is still in safe position to feed. This practice should continue for parents nursing infants at home with silastic tubes.
2. A 10mL or 20mL feeding syringe should be used to test pH as this creates less suction pressure on the tube and is less likely to cause issue with the silastic tube collapsing/compressing than smaller sized feeding syringes.

Transpyloric Tube

1. Transpyloric silastic tubes should NOT be aspirated. TPT must be placed and position confirmed on x-ray before tube can be used. Depth of insertion should be documented and checked prior to administering any medication or feeds. A small mark can be made on the tube at the nare to assist with visual checking of tube positioning. In the event TPT tube is dislodged, a repeat x-ray must be performed prior to use to confirm the tube is safe to use.

Accessing Tube for Feeding

Gastric Tube

1. Verify feeding order.
2. Gather and prepare equipment. Clean where the feed is decanted.
3. Prepare feed volume as per local procedure guidelines.
4. Ensure feed is warmed prior to administration. If in the inpatient setting, milk warmer is used to warm milk. If at home, a container of very warm water with feeding syringe capped and submerged can be used to warm milk. DO NOT place milk in microwave as this may cause areas of the milk to heat too rapidly and will cause burns.
5. Attach syringe to extension tubing (if required) and prime tubing with the feed.
6. In the inpatient setting, ensure two nursing staff, or a nursing staff and a parent cross check correct patient and expiry of breast milk or formula against patient identifciation and double sign the observation chart.
7. Confirm tube placement as above. Ensure pH ≤ 5 before accessing for feeding. If unable to aspirate stomach content, do not apply force to tube. This is likely due to tip of the tube sitting above stomach content. Place infant on left side for 5 minutes to allow movement and pooling of stomach contents, and then attempt aspiration again. Visual inspection of line should involve checking centimetre and marking at nare or mouth (depending on oral or nasal insertion) and ensure that matches documented insertion depth.
8. Attach enteral feeding syringe.
9. Administer feed either via gravity feed or via feeding syringe pump as per order.

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Transpyloric Tube

NOTE:
Transpyloric feeds must always be a continuous infusion, not for gravity or bolus feeds. Syringe pump or feeding pump should be used. This will help to prevent diarrhoea or "dumping syndrome".

1. Verify feeding order.
2. Gather and prepare equipment. Clean area where the feed is decanted.
3. Prepare feed volume as per local procedure guidelines.
4. Ensure feed is warmed prior to administration. If in the inpatient setting, milk warmers should be used to warm milk to body temperature. If at home, a container of very warm water with feeding syringe capped and submerged can be used to warm milk. DO NOT place milk in microwave as this may cause areas of the milk to heat too rapidly and can lead to burns.
5. Attach syringe to extension tubing and prime tubing with the feed.
6. Confirm the position of the TPT through visual inspection. Verify the centimeter mark of the TPT at nare or mouth. DO NOT ASPIRATE TPT.
7. In the inpatient setting, ensure two nursing staff, or a nursing staff and a parent cross check correct patient and expiry of breast milk or formula against patient identifciation and double sign the observation chart.
8. Connect the enteral feeding adapter to the feeding administration port (pink colour) of the TPT.
9. Adjust the prescribed flow rate for feeding on the pump.
10. TPT tubes should be flushed with 1-2 mL of sterile water for injection every 4-6 hours to prevent tube blocking.
11. Gently shake the syringe every 1-2 hours to prevent suspension. The volume decanted into a feeding bag or container should not exceed a two hour supply of feed for inpatient setting.
12. Change enteral feeding adaptor and extension line (if using) every 24 hours.

NOTE:
NGT/OGT can be placed in addition to TPT if gastric/air decompression of stomach is required.

Accessing Tube for Medications

Gastric Tube

1. Verify medication order and perform all required medication checks (2 RNs inpatient, parent check outpatient).
2. Prepare and draw up medication as per guidelines (or as per education from nursing staff for parents).
3. Confirm position of silastic gastric tube by performing gastric aspirate (perform gastric aspirate using same method as per checking tube positioning). Visual inspection or marking at nare should also be completed.
4. Attach medication in oral feeding syringe to silastic tube.
5. Slowly and gently push medication down gastric silastic tube, ensuring to monitor infant's stability. Immediately stop pushing medication if infants appears to be chocking, gagging or cyanotic.
6. Flush the tube with 1-2 mL of sterile water for injection after medication to prevent tube blocking.

SILASTIC TUBES (GASTRIC AND TRANSPYLORIC) CONT'D

Transpyloric Tube

1. Verify medication order and perform all required medication checks (2 RNs inpatient, parent check outpatient).
2. Prepare and draw up medication as per guidelines (or as per education from nursing staff for parents).
3. Pause continuous feeding pump.
4. Confirm the position of the TPT through visual inspection. Verify the centimeter mark of the TPT at nare or mouth. DO NOT ASPIRATE TPT.
5. Detach extension tubing from TPT and attach medication syringe to TPT.
6. Slowly and gently push medication down TPT, ensuring to monitor infant's stability. Immediately stop pushing medication if infant appears to be chocking, gagging or cyanotic.
7. Flush the tube with 1-2 mL of sterile water for injection after medication to prevent tube blocking.
8. Reattach the extension tubing and feed to the TPT and recommence feeding.

6. DOCUMENTATION

- eMR progress notes
- Daily Care Plan
- Neonatal Observation Chart
- Medication Chart

7. EDUCATIONAL NOTES

- Careful monitoring of infants whilst receiving pump or gravity feeds should be attended to ensure tube dislodgement does not occur during feed process.
- Taping of gastric and transpyloric tubes should be regularly checked and assessed to ensure tube is secure.
- Regular assessment of nares for pressure injuries and skin integrity should also occur. Alternating side of nasal insertion with each tube change (where possible) can help to preserve skin integrity.

8. RELATED POLICIES/PROCEDURES/CLINICAL PRACTICE LOP

- RHW NCC Nursing LOP – Continuous Enteral Feeding
- RHW NCC Nursing LOP – Intragastric Tube Insertion and Maintenance

9. RISK RATING

- Medium

10. NATIONAL STANDARD

- Standard 2 Partnering with Consumers
- Standard 4 Medication Safety
- Standard 5 Comprehensive Care

SILASTIC TUBES (GASTRIC AND TRANSPYLORIC) CONT'D

11. ABBREVIATIONS AND DEFINITIONS OF TERMS

NCC	Newborn Care Centre	CPAP	Continuous Positive Airway Pressure
HiPi	Hospital in Partnership Initiative	RN	Registered Nurse
TPT	Transpyloric Tube		

12. REFERENCES

The Sydney Children's Hospital Network Practice Guideline (2018) Enteral Feeding Tubes and the Administration of Enteral Nutrition.

13. AUTHOR

Primary	15/10/2021	C Walter (CNE)

LOP DEVELOPMENT (DELETE PRIOR TO PUBLICATION)

Date identified	Identifier	Reason for LOP	Meeting approved	Allocation
15/7/2021	C Walter (CNE)	Confusion over silastic tubes	19/10/2021	21/10/2021

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