



CLINICAL PRACTICE GUIDELINE

Guideline coverage includes NICU KEMH, NICU PMH and NETS WA

# Gastric Tubes: Placement and Testing

This document should be read in conjunction with the [Disclaimer](#)

Whilst the incidence of incorrect tube placement into the respiratory or cranial systems is low, the consequences can be catastrophic. Confirming the correct position prior to use is mandatory. Insertion of a gastric tube into the stomach is for the following reasons:

## 1. Enteral Feeding:

- Preterm: immature suck/swallow reflex.
- Neurological disease: impaired sucking reflex.
- Tachypnoea with risk of aspiration.

## 2. Gastric Decompression:

- Continuous Positive Airway Pressure.
- Necrotising Enterocolitis.
- Paralytic Ileus.
- Abdominal surgery.

## 3. Administration of Medication.

## Key Points

- Use of a dedicated enteral feeding system should be used that does not contain ports or connectors that can be connected to intravenous systems.
- Observe the infant for colour changes throughout the procedure. Passing an oral/nasal tube can stimulate a vagal response. Resuscitation equipment must be readily accessible.
- If there are any signs of respiratory distress or the neonate is on ventilator support by CPAP an OGT not NGT must be inserted.
- When suck feeds are being introduced it is better for the infant to have a nasal tube instead of an oral tube as this will be less obstructive for infants that are beginning to suck.
- Weighted silastic tubes differ in that they need to be measured from the end of the weight not the tip. They can stay in for 4 weeks.
- If reinserting a tube that has dislodged, it is preferable to wait 1 hour after a feed or ideally wait and insert prior to the next feed.

## Equipment

- Lubricant (if necessary).
- 10 mL enteral syringe.
- pH testing strips (6B) or Litmus\* paper (KEMH).

- Tape for securing.
- Specimen pot for free drainage.
- Sucrose if appropriate.
- Appropriate sized tube:

5G (polyurethane)	≤ 850g only
5G	> 850g to ≤1500g feeding only
6G	> 1500g feeding and/or free drainage
8G	Surgical cases and/or free drainage
6G / 8G	Long term silastic feeding tube

**\*Caution should be used when testing the acidity/alkalinity of aspirate using litmus paper as litmus paper is not adequately sensitive to distinguish between gastric and bronchial secretions.**

## Procedure

(Swaddling in a side-lying or supine position reduces the stress of the procedure).

The recommended method of measurement for orogastric and nasogastric tube insertion is to measure from the bridge of the nose to the ear lobe and then to the xiphoid sternum. Measurements are most accurate if taken with the infant in the supine position. This measurement is also known as the acronym “NES” (Nose Ear Sternum). It may be necessary to add another 1 cm if no aspirate is obtained.

### Orogastric:

Insert the tube orally and secure centrally. Tape the tube to the top lip where possible to prevent interference to the tongue. If resistance is met during insertion, stop advancement and adjust direction of tube slightly before reattempting.

### Nasogastric:

Insert nasally in a backward direction. If resistance persists after a reattempt then try the other nostril. Secure the tube across the cheek.

### Gastric tubes should be changed every five days.

The position of the tube should be verified by checking pH or Litmus paper **and** carrying out a risk assessment in the following situations:

- Initial insertion.
- Prior to bolus feeds, medications.
- 4 hourly for CMF, synchronise with syringe changes. It may be necessary to wait 15 minutes for the stomach to empty and the pH to fall.
- Following episodes of coughing, vomiting and retching.
- If displacement is suspected i.e. loose tape.

### The Following Tests are RECOMMENDED for Assessing Placement:

- pH indicator strip of pH 5.5 or below within 10-15 seconds.

- X-ray - although this is the gold standard it is not to be used routinely due to cost and radiation exposure, but can be used if the infant is being x-rayed for other reasons.

### The Following is NO LONGER RECOMMENDED:

- The 'whoosh' test (injecting air down the tube and listening) is not to be used as a primary method of testing but can be used to dislodge the exit-port of the feeding tube from the gastric mucosa. Use no more than 2 mL.
- The presence of aspirate obtained from the gastric tube does not rule out misplacement.




### Risk Assessment/Limitations of pH Testing

Factors that may contribute to a high gastric pH (pH 6 or above).

- The presence of amniotic fluid in an infant < 48 hours of age.
- Infants on CMF and 2 hourly feeds.
- Medications that reduce or alter stomach acid.
- Presence of medication or milk left in the feeding tube.
- Some infants with none of the above will consistently have pH values of 6 and above. Senior medical advice should be sought and a decision made and documented on possible actions to take.

## References

1. Australian Government. NHMRC: <http://www.nhmrc.gov.au/book/b4-2-4-enteral-feeding-tubes>
2. Reducing harm caused by the misplacement of nasogastric feeding tubes - <http://www.nrls.npsa.nhs.uk/resources/?EntryId45=59794>
3. Boxwell G, Ed. Neonatal Intensive care Nursing. 2<sup>nd</sup> Edition. Routledge, Oxon, UK 2010
4. Kenner C, Wright Lott J, eds. Comprehensive neonatal nursing care. 5<sup>th</sup> Edition. Springer publishing company, NY. 2014

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