# Nasogastric Insertion Self Directed Learning Package

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## AIM

This Nasogastric (NG) tube insertion package aims to provide assistance to Registered Nurses (RN) and advanced enrolled nurses EN who are competency assessed by their facility, who are learning about and seeking competence in the skill of insertion of NG tubes.

## GUIDE

The information covered in this package is specific to the insertion and care of NG tubes in adult patients.

The successful completion of this package will require you to undertake the prescribed reading and complete the associated learning activities. The reading activities within this Self Directed Learning Package (SDLP) are identified by placement within text boxes.

Readings, activities and guidelines are hyperlinked throughout this package and require you to click on the link to access them. Wait a few seconds for them to come up.

Upon completion of the package there is a post test to measure comprehension of the principles and procedures that have been addressed.

## KNOWLEDGE OF GUIDELINES AND SWP

It is essential that nursing staff engaged in the insertion of NG tubes are fully aware of the Hunter New England Health “Enteral Feeding Tube Guidelines - Adult” and the “Nasogastric Tube Insertion” SWP (Safe Working Practice). This is to ensure that nurses undertaking these activities are knowledgeable and clinically competent guaranteeing the minimisation of adverse patient outcomes.

Staff must be aware of:

- Who can authorise NG tube insertion
- Requirement of consent for the procedure
- Special considerations and contraindications pertaining to NG tube placement
- Actual procedure for NG tube placement
- How to confirm appropriate NG tube placement

***READING:***

***Thoroughly read: Hunter New England Health*** "Enteral Feeding Tube Guidelines - Adult" ***and the*** "Nasogastric Tube Insertion" SWP***. They are available on the Hal Intranet site:***

## INDICATIONS

NG tubes are frequently used in clinical settings for the management of conditions that require:

- Decompression of the gastrointestinal tract (GIT)
- Gastric lavage
- Diagnosis and assessment
- Nutrition
- Medication administration

## CONTRAINDICATIONS

### Always

- Fractured base of skull

### May be contraindicated:

- Facial Injury
- Head & Neck Surgery
- Oesophageal Varices / Trauma
- Upper Gastrointestinal surgery
- Caustic Ingestion
- Bleeding disorders such as thrombocytopenia

## PREPARATION

Insertion of an NG tube can be an uncomfortable and painful procedure. To minimise patient anxiety, increase compliance and facilitate the procedure, a clear explanation must be given to the patient regardless of their level of responsiveness. If the patient is confused, disoriented or unable to follow commands, assistance from another staff member will be required. Use of comforting strategies such as calming speech and a relaxed environment can improve the success of the procedure. Pain relief such as 2% lignocaine gel may be used. Encourage the patient to mouth breathe during the procedure to help reduce nausea. Agree on a signal the patient could give ie. a raised hand, to let you know if he/she is experiencing choking or pain during the procedure. Pace the procedure to optimise patient comfort.

## EQUIPMENT

In order to successfully complete the procedure in a timely and competent manner, all equipment should be gathered prior to undertaking the NGT insertion. This prior organisation allows the nurse to mentally rehearse the procedure increasing the nurse's self-confidence and promotes patient confidence.

- Personal Protective equipment (PPE)
- NG tube (appropriate size)
- Water Soluble Lubricant (or water as required by manufacturer)
- Stethoscope
- pH indicator strip/paper
- Toomey syringe
- Adhesive hypoallergenic Tape (ie. Nasofix) and Skin Prep Wipe
- Emesis Basin
- Absorbent Towel
- Cup of Water & Straw
- Kidney dish
- Indelible Pen Marker

## PATIENT POSITION

Patient requires to be positioned in a high fowlers position if not medically contraindicated with head and shoulders supported by a pillow. The elevated position helps protect the patient against aspiration. This position also facilitates NG tube insertion whilst limiting patient anxiety and discomfort. Ask the patient to hold the emesis bowl and encourage them to relax and breathe slowly and steadily through their mouth during the procedure.

## LENGTH OF TUBE INSERTION

The length of NG tube insertion corresponds with the combined distance from the tip of the patient's nose across to their ear lobe and down to the patient's xiphoid process. Mark this distance on the NG tube using the indelible pen.

***READING:***

***Thoroughly read:*** Metheny, N. A. & Titler, M. G. (2001). Assessing placement of feeding tubes. *American Journal of Nursing*. 101 (5). Found on CIAP ovid full text

***READING :***

***Thoroughly read:*** Metheny, N. A. (2002). Inadvertent intracranial nasogastric tube placement. *American Journal of Nursing*. 102 (8). Found on CIAP ovid full text

## PROCEDURE FOR NG TUBE INSERTION

***Follow the*** "Nasogastric Tube Insertion" SWP***.***

**Considerations:**

- ❖ Ensure patient privacy.
- ❖ Assess the nostrils for obstruction and choose the nostril with better airflow for tube insertion. Usually this is the larger nostril. Having the patient breathe through his/her nose whilst you occlude each nostril can help ascertain which nostril has the better airflow.
- ❖ Observe the patient closely throughout the procedure. Respiratory distress may indicate tracheal insertion of the NG tube. Signs of distress may include wheezing, coughing or gasping for air. If necessary, partially withdraw the tube and wait until the patient is comfortable again before proceeding.
- ❖ Do not force the tube if you feel resistance during insertion. Exerting firmer pressure to pass the tube may result in the tube curling back on itself. Perforation of the oesophagus and other complications are possible.

## SECURING OF NG TUBE

Wipe over nose with skin prep wipe.

Use a length of hypoallergenic tape approximately 8cm long and cut into a trouser shape. Wrap the “trouser legs” around the NG tube with the top section across the nose. Ensure the tape does not push the NG tube against the nares to enable the prevention of nasal pressure areas. Tube may be attached to patients’ pyjamas or bedclothes to reduce drag and prevent accidental removal however please take care if NG tube is attached to the bedlinen or pillow. Leave enough slack to allow patient movement without putting pressure on the tube or the nares.

***ACTIVITY:***

***Click on:*** Securing of a NG tube photo

## ASCERTAIN CORRECT PLACEMENT OF NG TUBE

1. Aspiration of gastric content
   - ❖ *Aspirate equal to pH 5.0 or below*

   *Reposition patient and/or tube if unable to obtain aspirate*

   ***Note*** *if there is any doubt the position and/or the clarity of the color change on the pH indicator strip/paper, particularly between the ranges pH 5 and 6, confirm with x-ray.*

   pH test can become difficult to interpret if the patient is on acid inhibiting agents but can differentiate inadvertent placements in the majority of patients.

**NB.**

2. An X-ray must be performed to confirm tube placement prior to commencing feeding or if there is any doubt as to the tubes position. It is not necessary to perform an X-ray if the NG tube is for decompression. An X-ray should be done if adequate output from the tube is not being achieved during decompression.

***ACTIVITY:***

***Click on:***

1. X-Ray of inadvertent intracranial insertion of a NG tube. A transnasal transsphenoidal resection of a large pituitary tumour.
2. X-Ray of NG in right lower lobe.
3. X-Ray of transpyloric tube.

## COMPLICATIONS

- ❖ Rhinitis, pharyngitis, sinusitis, oesophagitis
- ❖ Nasal septum necrosis
- ❖ Nasopharyngeal ulcers
- ❖ Hoarseness

- Gastric ulceration
  - Infection
  - Smaller soft bore tubes have less risk of complication however have a greater risk of blockage

## NURSING CONSIDERATIONS

- Check NG placement every 4 hours and before feeding
- Check regularly for potential nasal pressure areas
- Change tape every 48 hrs
- Regular mouth care
- Strict fluid balance
- If feeding tube - change the giving set every 24 hours.
- After rinsing the guide wire, place in plastic bag with patient label and date of insertion.
- NEVER reinsert a guide wire while the NG tube is still in the patient
- Document in the patients medical records – date, time, tube size, length inserted, the length of tube external to nares, patient tolerance and confirmation testing.
- If administering medications via NG tube: check compatibilities, use suspensions where able, never crush sustained release or enteric coated medications, always flush following medication administration, check with pharmacist.
- **Never modify the connections to fit IV infusion devices** – use the appropriate infusion pump only.

***READING:***

***Thoroughly read*** "Administering Medications via Enteral Feeding Tube" SWP.

***READING:***

***Thoroughly read*** "Nasogastric Suction – Intermittent and Continuous" SWP.

- Always leave the side vent (blue tubing) open to atmosphere
- Check the position of the NG tube every 4 hours.
    1. Check marking on tube relative to nose
    2. Aspirate tube with syringe
    3. Listen for "whistling" from the side vent
    4. Flush main tube with 20ml saline and side vent with air to ensure patency
    5. If fluid is coming up the side vent it means the main tube is blocked. Flush tube and side vent as above and reconnect to suction.
- Regular observation of nasal area for pressure areas
- Mouth Care
- Accurate fluid balance
- An NG tube that is not working is potentially harmful to the patient as it increases the risk of aspiration.

***ACTIVITY:***

***Click on:*** Short Term Saleme Sump 12 – 16g photo

## REMOVAL OF NG TUBE

***Follow the*** "Removal of NG tube" SWP.

**Considerations:**

- ❖ Ensure patient privacy
- ❖ Fully explain the procedure
- ❖ Explain to the patient that he/she will need to hold their breath to prevent fluid from entering the lungs
- ❖ Use steady, gentle pressure
- ❖ Ensure documentation in patient notes

## LEARNING ACTIVITIES

**Q1.** List 5 indications for placement of a Nasogastric tube in an adult patient?

**Q2.** What authorisation do nursing staff require prior to placing a Nasogastric tube in an adult patient?

**Q3.** What are the contraindications to placing a Nasogastric tube in an adult patient?

**Q4.** What equipment is required for the insertion of a Nasogastric tube in an adult patient?

**Q5.** What position should a patient be placed in for the insertion of a Nasogastric tube?

**Q6.** What is the correct method to measure the distance or length to insert a Nasogastric tube in an adult patient?

**Q7.** Why do you need to examine the nostrils for any deformity or obstruction?
What would you do if unable to insert an NGT in either nostril?

**Q8.** Describe the methods available to nursing staff to test for correct NG tube placement prior to an X-ray?

**Q9.** What are 5 signs and symptoms of incorrect NG tube placement in an adult patient?

**Q10.** How should an NG tube be physically secured to a patient?

**Q11.** Describe the main documentation points that should be placed in a patient's medical record after NG tube insertion?

## READING AND REFERENCE ARTICLES


- Bowers,S. (2000). All about tubes. *Nursing*. 30(12), 41-47.
- McCance, K. & Huether,S. (2002). *Pathophysiology: The biological basis for disease in adults and children, (4th Ed).* St Louis: Mosby
- Metheny,N.A. & Titler,M.G. (2001). Assessing placement of feeding tubes. *American Journal of Nursing.* 101(5), 36-45.
- Metheny,N.(2002)Inadvertent intracranial nasogastric tube placement. *American Journal of Nursing.* 102(8), 25-27.
- Nursing Enteral Working Party (2004). *Nursing Enteral Guideline for HNE Health.*
- Potter,P. & Perry,A.(2001). *Fundamentals of Nursing.* (5th Ed). St Louis. 1362-1367
- *Medicines and Healthcare products Regulatory Agency (MHRA). Medical device alert, Enteral feeding tubes (nasogastric) 14 June 2004.*