SOP
NG Tube Insertion & Removal

Department of Surgery
Faculty of Medicine
UWUSL

Standard Operating Procedure (SOP)
on Nasogastric (NG) Tube Insertion & Removal

Title
Nasogastric (NG) Tube Insertion & Removal

Issued By
Faculty of Medicine, Uva Wellassa University of Sri Lanka

(1) Purpose
To ensure the safe, effective, and standardized insertion and management of nasogastric (NG) tubes for gastric decompression, enteral feeding, medication administration, and diagnostic purposes, while minimizing complications and ensuring patient comfort.

(2) Scope
This SOP applies to all medical officers, nursing staff, and healthcare students performing or assisting in nasogastric tube insertion within the Faculty of Medicine, Uva Wellassa University of Sri Lanka, and affiliated clinical training sites.

(3) Responsibilities

(3.1) Consultant / Medical Officers
- Supervise procedure and manage complications.
- Obtain informed consent.

(3.2) Circulating Nurse / Assistant
- Prepare materials and assist with patient positioning.
- Communicate with patient and alleviate anxiety.

(3.3) Medical Students and Health Care Staff
- Perform the procedure according to this SOP.
- Be vigilant about impending complications, detect early, and take necessary precautions.

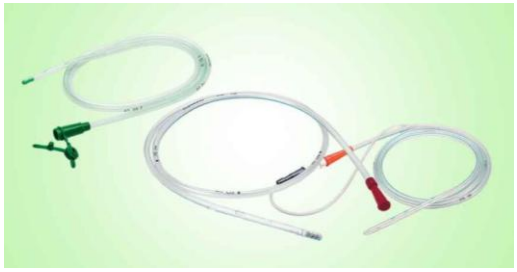
(4) Indications
- Gastric decompression (e.g., bowel obstruction, post-operative ileus)
- Enteral feeding in patients unable to swallow or with inadequate oral intake
- Administration of medications or oral contrast agents
- Gastric lavage (e.g., drug overdose, poisoning)
- Aspiration of gastric contents for diagnostic purposes- Children
- Post-operative care following upper GI surgery

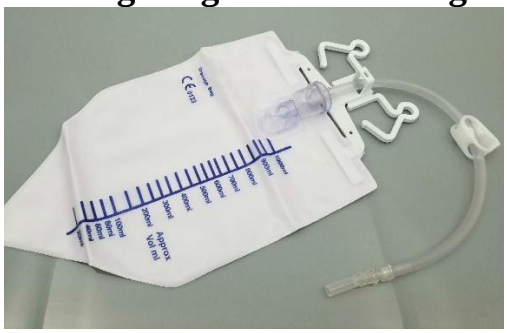
(5) Contraindications

- Suspected or confirmed basal skull fracture (risk of intracranial placement)
- Severe midfacial trauma or nasal fractures
- Oesophageal varices or known oesophageal strictures (relative)
- Recent oesophageal or gastric surgery (relative — senior approval required)
- Coagulopathy or bleeding disorders (relative)
- Uncooperative or severely agitated patient without sedation

(6) Materials Required

Ensure the following are available before commencing the procedure:

Item	Specification
NG tube 	Size 14–16 Fr for adults; 8–12 Fr for children
Lubricant (water-soluble) 	Lignocaine gel
50 mL catheter-tip syringe 	For insufflation and aspiration
pH indicator paper / litmus strips 	To confirm gastric placement

Stethoscope	For auscultation of air insufflation
Adhesive tape 	To secure the tube to nose
Drainage bag / collection bag 	For gastric drainage connection
Gloves, apron, and mask	Personal protective equipment
Pen light / torch	To inspect pharynx if required

(7) Procedure

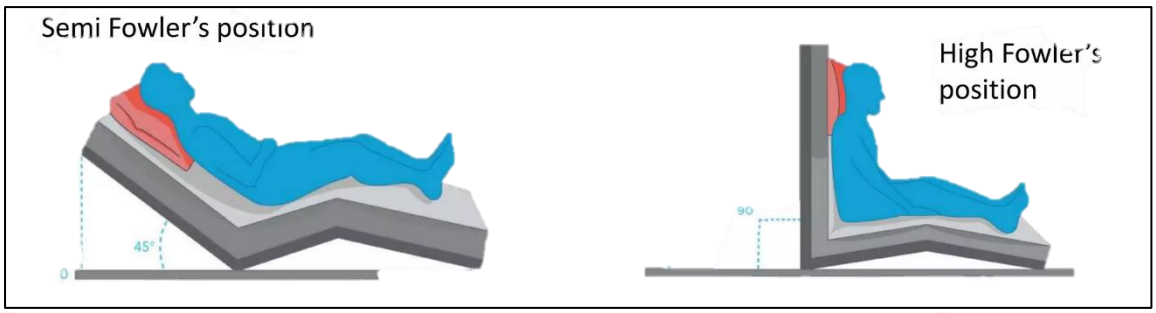
(7.1) Assemble Equipment

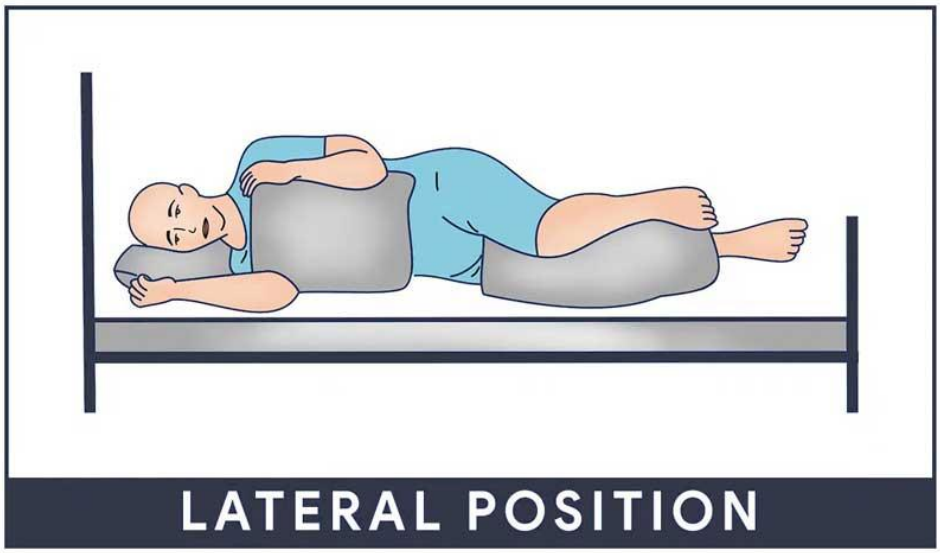
Before starting the procedure, gather all necessary equipment and place it on a tray or trolley:

- Arrange items so they are within easy reach.
- Ensure everything is clearly visible.
- Keep the workspace clean and organized.

(7.2) Preparation

- Explain the procedure and obtain informed consent from the patient or guardian.
- Assess for contraindications: check for nasal polyps, deviated septum, facial trauma, or prior oesophageal surgery.
- Position patient: sit upright at 45–90° (high Fowler's position) if possible; for unconscious patients, position in the left lateral position.



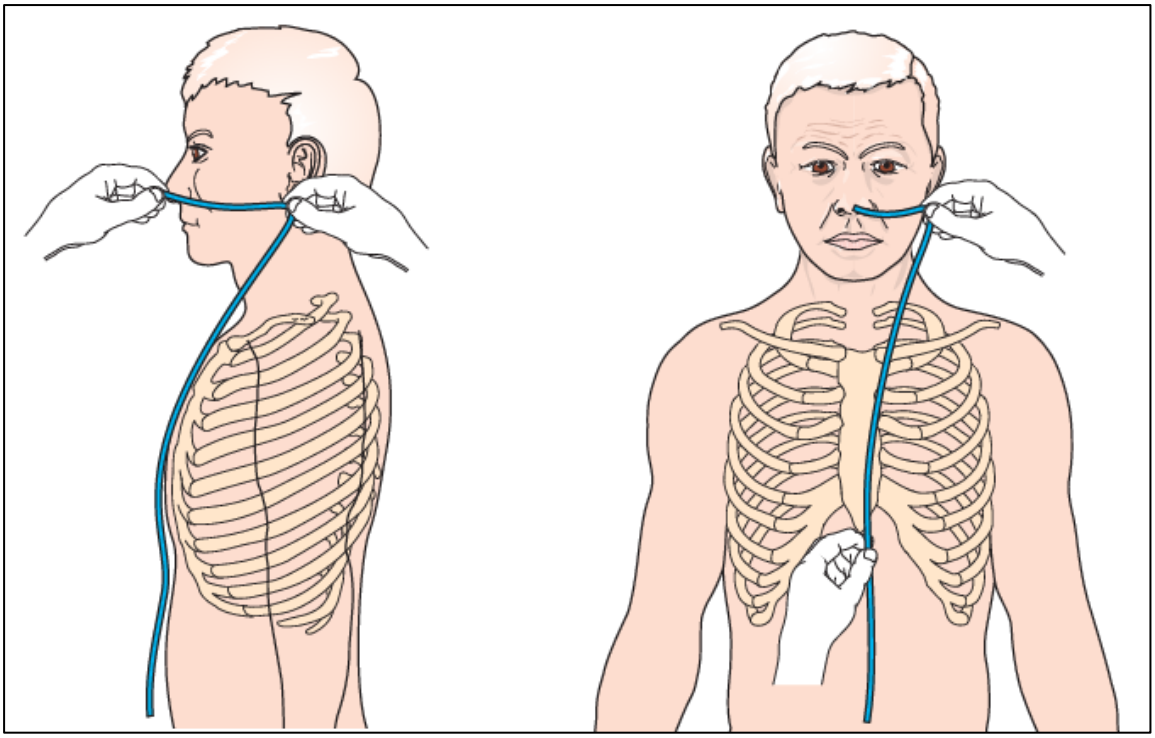


- Select the appropriate nostril (clearer side); inspect for nasal patency.
- Perform hand hygiene and don gloves, apron, and mask.

(7.3) Steps (Insertion of NG Tube)

Measure and Mark the Tube

- Measure the tube externally: from the tip of the nose → to the earlobe → to the xiphisternum (NEX measurement).



- Add 5–10 cm to this measurement.
- Mark the measured length on the tube with tape or note the measurement marking.

Lubricate the Tube

- Apply generous water-soluble lubricant (or lignocaine gel) to the distal 10–15 cm of the tube.
- Instill 2–4 mL of lignocaine nasal spray into the selected nostril if available — wait 2 minutes for effect.

Insert the Tube

- Ask patient to tilt the head slightly forward (chin to chest).
- Gently pass the tube into the nostril, directing it posteriorly and inferiorly along the floor of the nasal cavity (NOT upward).
- Advance slowly through the nasopharynx. At approximately 15–20 cm, the patient may gag — pause momentarily.
- Ask the patient to take small sips of water and swallow; advance the tube with each swallow.
- Continue advancing to the pre-measured length.
- STOP and REMOVE immediately if: patient coughs excessively, develops cyanosis, speaks with difficulty, or tube coils in the mouth.

Confirm Placement

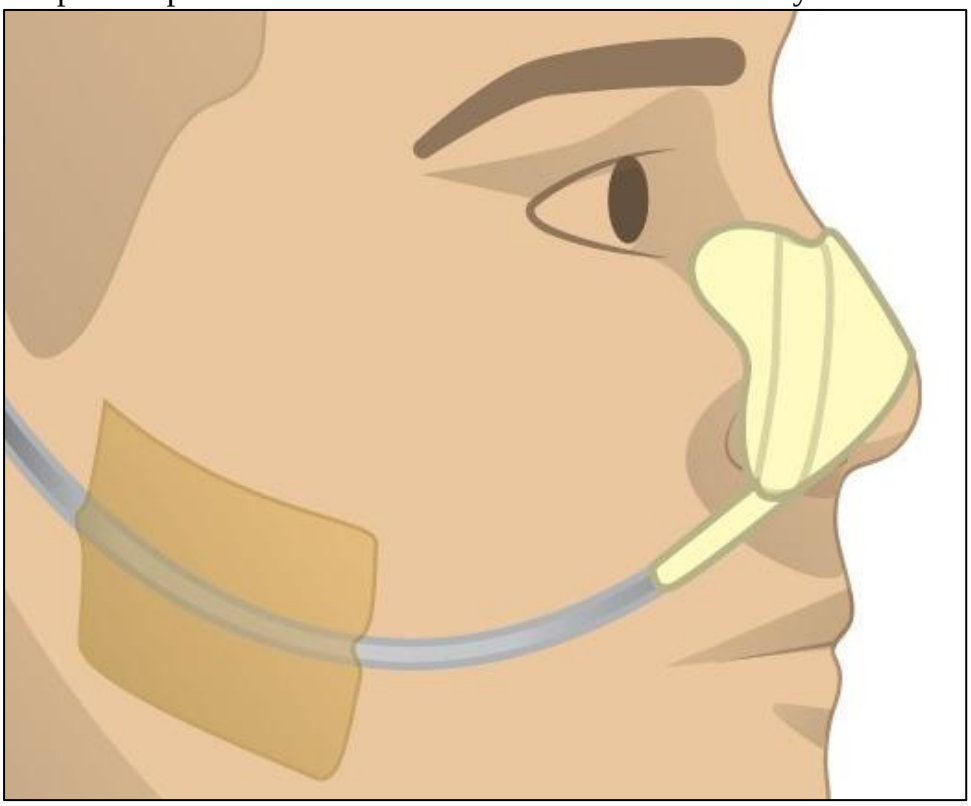
Use at least two methods to confirm position before use:

- Primary method — Aspiration + pH testing: Aspirate gastric contents and test pH; gastric fluid pH should be ≤4. This is the gold standard bedside method.
- Secondary method — Auscultation: Insufflate 10–20 mL of air with the catheter-tip syringe while auscultating over the epigastrium; a 'whoosh' sound suggests gastric placement (not reliable alone).
- Gold standard — Chest X-ray: Request CXR if pH is ≥5, aspiration unsuccessful, or patient is at high aspiration risk. The tube tip should be visible below the diaphragm, bisecting the carina.
- NEVER use the tube for feeding until correct placement is confirmed.

Secure the Tube

- Once placement is confirmed, secure the tube firmly to the nose using adhesive tape — avoid pressure on the nasal ala.

- Loop and tape the tube to the cheek for additional security.



- Connect to a drainage bag or spigot as clinically indicated.
- Note and document the cm marking at the nostril.

(8) Post-procedure Care

- Maintain the head of the bed elevated at ≥30° at all times to reduce aspiration risk.
- Perform and document placement confirmation findings.
- Measure, document, and monitor gastric residual volumes if used for feeding.
- Flush the tube with 20–30 mL of water before and after medication administration and at least every 4–6 hours.
- Reassess tube position daily and after episodes of vomiting, coughing, or retching.
- Educate patient: avoid pulling the tube, report discomfort or nausea immediately.
- Arrange review and follow-up as clinically indicated.

(9) Complications

- Pulmonary misplacement — EMERGENCY: Coughing, cyanosis, respiratory distress, no gastric aspirate — Remove immediately; confirm with CXR before re-insertion.
- Epistaxis: Minor bleeding from mucosal trauma; apply pressure, use smaller tube.
- Oesophageal placement: Missed intragastric placement — confirmed by CXR.
- Aspiration pneumonia: Especially if tube feeds are given without confirming placement.
- Nasal ala ulceration and pressure necrosis from poorly secured tubes.

- Sinusitis or otitis media from prolonged tube presence.
- Tube blockage: Flush regularly; replace if blocked.
- Patient discomfort, gagging, or laryngospasm during insertion.

(10) Documentation

- Size and type of NG tube inserted and nostril used.
- Date, time, and name of practitioner performing the procedure.
- Method(s) used to confirm placement and results (aspirate pH, CXR findings, auscultation).
- Centimetre marking of tube at the nostril at time of insertion.
- Any complications encountered and actions taken.
- Patient education provided and follow-up instructions given.

(11) Steps of the Removal of NG Tube

Preparing for Removal

- Confirm the clinical indication for removal has been resolved.
- Explain the procedure to the patient; reassure that removal is quick.
- Position patient upright; have a vomit bowl and tissues ready.

Remove the Tube

- Don gloves and apron.
- Disconnect the tube from any drainage bag or feeding system.
- Flush the tube with 20 mL of air to clear residual fluid.
- Remove adhesive tape securing the tube at the nose and cheek.
- Ask patient to take a deep breath and hold; pinch the tube and withdraw it in a smooth, continuous motion.
- Inspect the tube: ensure it is intact and complete.
- Inspect the nostril for mucosal damage or bleeding.

Post-removal Care

- Offer patient water or oral hygiene care.
- Reassess swallowing and gag reflex before commencing oral intake.
- Document time and reason for removal, and patient tolerance.

(11) References

- Bailey & Love’s Short Practice of Surgery. 28th ed. CRC Press; London.
- World Health Organization (WHO). Patient Safety Guidelines: Safe Surgery Saves Lives. WHO Press; Geneva.
- National Patient Safety Agency (NPSA). Reducing the Harm Caused by Misplaced Nasogastric Feeding Tubes. NPSA; London.
- American College of Surgeons Committee on Trauma. Advanced Trauma Life Support (ATLS®) Student Course Manual. Latest ed. American College of Surgeons; Chicago.

Edited by:
Dr Samira Janaka Jayasinghe
Consultant General Surgeon
Senior Lecturer & Head of the Department
Department of Surgery
Faculty of Medicine
Uva Wellassa University of Sri Lanka

Snr. Prof. Muditha Vidanapathirana
Dean
Faculty of Medicine
Uva Wellassa University of Sri Lanka

Dr. T. Tharanitharan
Temporary Demonstrator
Department of Surgery
Faculty of Medicine
Uva Wellassa University of Sri Lanka

Submitted by:
Dr. T. Tharanitharan
Temporary Demonstrator
Department of Surgery
Faculty of Medicine
Uva Wellassa University of Sri Lanka