This flowchart illustrates the steps to ensure safe positioning of the nasogastric tube for clients not using acid inhibiting medication.

1. Check for signs of tube displacement.
2. Aspirate using 20mL or 50mL syringe and gentle suction.

Is aspirate obtained 0.5-1mL?

- Yes
  - Test on pH strip
    - pH 5.5 or below
      - proceed to feed
    - pH above 5.5
      - DO NOT FEED
        1. Wait for 30-60 mins.
        2. Re-aspirate.

- No
  - DO NOT FEED
    1. If possible, turn child onto side.
    2. Using a 20mL or 50mL syringe, inject 1-5mL air into the tube and re-aspirate.
    3. If no aspirate, wait for 15-30 minutes.
    4. Re-aspirate.

Is aspirate obtained 0.5-1mL?

- Yes
  - DO NOT FEED
  - Contact parent/carer to discuss replacement.

- No
  - Is pH 5.5 or below?
    - Yes
      - proceed to feed
    - No
      - DO NOT FEED

Aim
To provide guidance to nurses working in schools regarding nasogastric tube management, to ensure:
- safe re-insertion of the nasogastric tube (NGT) as required
- safe positioning of the nasogastric tube (NGT) prior to feeding.

Risk
Client care and safety may be compromised if nasogastric tubes are not managed according to this procedure. Complications to non-adherence may include aspiration pneumonia.

Background
Enteral feeding via a nasogastric tube (NGT) is a useful method of ensuring adequate intake of nutrients in patients with a functioning gastrointestinal tract but whom are unable to use the oral route to take sufficient nutrients to maintain growth and development. Administration of enteral feeds, fluids and medication via a NGT is indicated for short term support. Longer term enteral feeding usually requires surgical referral for insertion of a gastrostomy or jejunostomy tube.

This procedure provides guidance on both the reinsertion of a NGT when required, and the steps required to ensure the NGT is correctly positioned prior to the administration of each bolus feed, fluids or medication. Steps 5, 6 and 7a are relevant for re-insertion only and are shaded to reflect they are not relevant when the positioning on an in-situ NGT is being verified.

If acid inhibiting medication is taken by the client, an individualised plan for assessing the position of the NGT should be provided by the treating medical team. Nurses should be guided by the client’s own care plan.

Equipment
- Nasogastric tube of appropriate size (Re-insertion only)
- Sterile water or water-based lubricant (Re-insertion only)
- Adhesive tape e.g., fixomul (Re-insertion only)
- Hydrocolloid dressing (Re-insertion only)
- Enteral syringe 20mL and/or 50ml
- pH indicator strips
- Alcohol based wipe
- Non-sterile gloves (additional personal protective precautions as appropriate to clinical situation)

Special Conditions
To be performed only by staff with appropriate training.
### Procedure

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<tr>
<th>Steps</th>
<th>Additional Information</th>
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| **1. ** Before commencing procedure:  
- Review the care plan  
- Gain consent  
- Check the identity of the child  
- Explain the procedure to the child. |  
- Consent should be gained prior to all procedures involving a child.  
- Check identification as per *Client identification procedure*. |
| **2.** Prepare the environment/table being used for the procedure. |  
- Clean the area with an alcohol based wipe.  
- Make sure the area is dry. |
| **3.** Perform hand hygiene and don gloves and other personal protective equipment (PPE) if indicated.2 |  
- As per *5 moments of hand hygiene*.  
- Risk of blood and body fluid exposure is to be assessed and appropriate PPE used where indicated.  
- Maintain the sterility of the tube. |
| **4.** Prepare the child to promote optimum comfort. |  
- Clear the child’s nostrils of mucous/debris as necessary.  
- Position the child upright at minimum 30 degrees to reduce risk of aspiration1 or as indicated on care plan. |
| **5.** Determine length of tube to be inserted.  
- Measure from bridge of nose to ear lobe; then from ear lobe to xiphoid sternum.  
- Note the measurement markings on the tube.  
  - If no visible markings indelible ink can be used to mark the tube. |  
- Note: for weighted tip tubes the weight is not included in the tube insertion measurement. |
### Steps

#### 6. Insert tube.
- Lubricate the end of the tube using a single use sachet.
- Gently insert the NGT into the nostril, and advance along the floor of the nasopharynx to the oropharynx.
- Encourage the child to swallow, if able, to assist movement of the tube into the oesophagus.
- Advance the tube to the measured length.
- If resistance is encountered, slightly adjust direction and reattempt advancement.
  - If resistance persists, stop, remove tube and reattempt insertion via other nostril.
  - Check NG tube has not coiled at the back of the throat.
  - Remove the tube immediately if the child develops any symptoms of respiratory distress e.g. coughing, cyanosis, breathing difficulty.
- Use sterile water\(^3\) or water-based lubricant.
- You may need to demonstrate a swallow.
- The absence of such symptoms however does not exclude the tube being in the respiratory tract.

#### 7. Confirm placement of tube.

#### 7a) Confirm placement after reinserting NGT:
- Aspirate 0.5 to 1mL of fluid.
  - If no aspirate, advance tube by 1cm and re-aspirate.
- Note colour and appearance of aspirate.
- Test aspirate on pH indicator strip:
  - If pH 5.5 or below secure the tube in place.\(^4\)
  - If pH > 5.5 do not feed and secure tube in place.
    - Wait 30-60 minutes and repeat testing procedure as per flowchart on page 1.\(^4\)
- Once tube is confirmed in correct
- Use a 20mL syringe.
- Place hydrocolloid dressing in place to protect the skin and secure tube in place with adhesive tape onto cheek, avoiding pressing against the nostril.
- This will help to reduce risk of pressure injury.
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<tr>
<td>position, continue to Step 8.</td>
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7b) Confirm placement of in-situ NGT.
- Using 20mL or 50mL syringe ± adaptor, aspirate 0.5 to 1mL of fluid.
- Apply aspirate to pH testing paper, read according to manufacturer’s instructions.
- Note colour and appearance of aspirate.
- Measuring the pH of withdrawn fluid is helpful in differentiating between respiratory and gastric placement.
- Antacid medication or continuous feeds may raise the gastric pH.

8a) If aspirate is pH 5.5 or below:
- Commence feed.
- A pH of 5.5 or less indicates the tube tip is in a gastric location.

8b) If unable to aspirate gastric contents:
- If possible, turn child onto their side.
- Inject 1-5mL of air using a 20mL or 50mL syringe and re-aspirate.
- If no aspirate obtained, wait for 15-30 minutes.
- Re-aspirate. If no aspirate obtained consider replacement/repassing of tube.
- Notify the parents/carer if the tube position is incorrect.
- Injecting air through the tube may move the exit-port of the feeding tube if it has lodged against the gastric mucosa.

8c) If aspirate is above pH 5.5:
- DO NOT FEED
- Wait 30-60 minutes and repeat testing procedure.
- When gastric pH is >5.5, tube placement is questionable and should not be used until position is verified or as otherwise stated in clients own care plan.


Related policies, procedures and guidelines

- Aseptic technique policy
- Client Identification
Hand hygiene (CAHS policy)

Nasogastric tube placement testing (PCH)

References