**The following procedures are discussed in detail:**

**Appendix 7**

* Procedure for passing the naso/ororgastric tube
* Procedure for skin care of the nasogastric or nasojejunal tube
* Procedure for giving a bolus feed
* Procedure for giving a continuous feed
* Troubleshooting the nasogastric tube

# Procedure for passing a naso/oro gastric tube (NGT/OGT)

**Aim:** To safely and correctly pass the naso/oro gastric tube and secure in place to allow feeding via the tube to take place.

**Equipment:** Disposable apron (if appropriate)

 Disposable gloves

Naso/oro gastric tube (specified size/length)

Syringes – 20ml (or as per manufacturers’ guidance)

 Johnson pH indicator strips (pH range 0-6)

Duoderm & tegaderm to secure the tube in place (or similar type dressing)

Freshly drawn tap water (cold tap) for children over 1yr to flush tube

 Cooled boiled water (or sterile) for children under 1yr to flush tube

Sterile water for children who are hospitalised to flush tube (NICE, 2003).

|  |  |
| --- | --- |
| Action: | Rationale: |
| * Apply apron (if appropriate)
* Wash hands and apply gloves
* Prepare equipment in a clean area
 | * To reduce the risk of cross infection and encourage good hygiene (Anderton, 1995; Pratt, 2001; NICE 2003; DoH 2010).
 |
| * Check all equipment is in date and sterile.
* Check the NGT/OGT, if there is a guidewire, check it is not bent and that it can be inserted and removed from the tube freely.
* Do not flush the tube before insertion
 | * To ensure equipment is safe and ready to use.
* To ensure the NGT/OGT can be used once placed and reduce risk of a damaged tube being placed(Mensforth and Nightingale, 2001)
* This can activate the lubricant and affect the pH giving a false reading ≤ 5.5(NPSA, 2012)
 |
| * Position the child appropriately and explain what you are going to do – age appropriately.
 | * To prepare the child physically and psychologically.
 |
| * Measure **NGT** from tip nose **(N)** to ear lobe **(E),** and then to the xiphisternum **(X)** - (base of the middle of the rib cage).
* Note **NEX** number on the tube measured to on the nasogastric tube placement checklist.
 | * To ensure the tube is placed at the right length(Huband and Trigg, 2000)
* To provide guidance on detecting tube displacement (Dougherty and Lister, 2008; NPSA, 2011)
 |
| * Insert the naso gastric tube into one nostril, to the measured length (at a 45 degree angle) – lubricate end with water if needed (not inside the tube)
* Use alternate nostril to last tube placement (unless unable to due to physiological reason)
* If using a long term tube ensure the introducer (metal wire) is within the tube when inserting the tube into the nostril.
* Encourage the child to swallow (if allowed oral fluids) or suck a dummy as you pass the tube down to the measured length.
 | * To prevent trauma and easy passing of the tube.
* To prevent trauma and skin irritation.
* The introducer prevents the long term tube from being too floppy to pass into the nostril and oesophagus.
* This closes the epiglottis over the lung opening to aid the passing of the tube into the stomach and not the lungs (Huband and Trigg, 2000; NHS QIS, 2007).
 |
| * Measure **OGT** from corner of mouth to ear lobe and then to the xiphisternum (base of the middle of the rib cage). Note number on the tube measured to.
 | * To ensure the tube is placed at the right length.
 |
| * Insert the oro gastric tube via the mouth (over the tongue) to the measured length – lubricate end with water if necessary (not inside the tube)
 | * To ensure easy passing of the tube to the correct length.
 |
| * Do not flush the tube after insertion until placement within the stomach is confirmed.
* Attach empty appropriate size syringe to the tube
* Aspirate (draw back) 2–5mls of stomach contents into the syringe
* Place aspirate onto pH indicator strip
* If pH is ≤ 5.5 secure in place (see below)
* Record pH on nasogastric tube placement checklist.
 | * Flushing can affect the pH level by activating the lubricant and give false readings of ≤ 5.5 even if the tube is within the lungs(NPSA,2012)
* To test if tube is in correct position in the stomach (NPSA, 2005)
* pH above 5.5 may indicate bronchial placement of NGT(NPSA, 2005).
* To ensure safe feeding via nasogastric tube
* Accurate record keeping ensuring feeding can commence safely (NPSA, 2011).
 |
| If unable to obtain an aspirate:* DO NOT INSERT WATER into the tube
* Insert up to 5mls of air through the tube
* Wait 10-15minutes
* Re aspirate stomach contents as above
* If pH is ≤ 5.5 secure in place
* If not: Change the child or young person’s position
* Re aspirate stomach contents as above
* If pH is ≤ 5.5 secure in place
* If not: Try retracting or inserting the tube up to 5cm and re aspirate stomach contents as above
* If pH ≤ 5.5 secure in place
 | * Water can activate the lubricant and give false readings of below ≤ 5.5 even if tube is within lungs (NPSA, 2012)
* To expel any blockages from the tube or to dislodge the tip of the tube from the stomach mucosa
* To identify pH of the fluid
* To encourage the tip of the tube to re enter the stomach fluid.
* To identify pH of the fluid
* To move the tube into the stomach fluid(from the oesophagus or small bowel)

 (NPSA, 2005) |
| * If still unable to obtain an aspirate or pH indicator strip has not confirmed location of the NGT within the stomach consider x-ray
* All x-rays must be read by an appropriately trained staff
 | * X-ray should not be used routinely but is the second line test method for placement of NGT (NPSA, 2011).
* To ensure the x-ray is read correctly and correct tube placement if confirmed (NPSA,2011).
 |
| Once tube placement is confirmed:* Secure the tube in place, firstly apply duoderm to the cheek and apply tegaderm over the tube to secure onto the duoderm (or like dressings).
* Document the external tube length the tube is secured at the nostril (cm)
 | * To ensure the tube remains in place and to prevent the tube rubbing on the child’s cheek (Huband and Trigg, 2000; NHS QIS, 2007).
* Accurate record keeping ensuring feeding can commence safely and assist in detecting displacement of the tube (NPSA,2011).
 |
| * Long term tube with guide wire/stylet: Flush the tube with 10mls water
* Remove the introducer once flushed
 | * To activate the internal lubricant for easy removal of stylet (MerckSerono, 2009) and to keep the tube patent and free from blockages.
* The introducer is removed for comfort and to allow feeding to take place.
 |
| * All other tubes: Flush the tube with 5mls water
 | * To keep the tube patent and free from blockages.
 |
| * Document in notes and on nasogastric tube placement checklist:
* Nasogastric tube type
* Nasogastric tube size
* NEX measurement and external tube length once secured in place
* Which nostril the tube has been sited within
* pH test and test result
* Whether feeding was commenced following correct pH aspirate
* Whom the tube has been inserted by
* Xray interpretation if pH aspirate was not obtained or pH indicator strips have failed to confirm the correct placement of the nasogastric tube.
 | * Accurate record keeping ensuring feeding can commence safely and to assist in detecting displacement of the tube (Dougherty and Lister, 2008; NPSA, 2011).
 |
| * Discard used syringes (if single use) and pH strips.
* Keep the introducer for the long term tube in a clean place.
 | * To prevent syringes being reused as they may not be effective or safe (MHRA, 2006) and to reduce the risk of cross infection and contamination (NICE, 2003; DoH, 2010)
* Introducer is kept to re-use if the tube needs reinserting within the weeks(MerckSerono, 2009)
 |
| * Tidy away equipment and wash hands
 | * To ensure the child’s safety and reduce the risk of cross infection(NICE, 2003; DoH, 2010)
 |

# Procedure for skin care of a naso gastric tube or oral gastric tube or naso jejunal tube (NGT/OGT/NJT)

**Aim:** To maintain healthy skin and ensure secure placement of NGT/OGT/NJT.

**Equipment:** Disposable gloves

 Disposable apron (as appropriate)

 Warm water

 2 x Small face cloth or gauze swabs

 Small scissors

Duoderm & tegaderm to secure the tube in place (or similar type dressing)

Syringes – 20ml for PVC (NGT/OGT), 50ml for polyurethane (silk) tube (or as per manufacturers’ guidance)

Freshly drawn tap water (cold tap) for children over 1yr to flush tube

Cooled boiled water (or sterile) for children under 1yr to flush tube and for all ages for the naso-jejunal tube

Sterile water for children who are hospitalised to flush tube (NICE, 2003)

|  |  |
| --- | --- |
| Action: | Rationale: |
| * Apply apron (if appropriate)
* Wash hands and apply gloves
* Prepare equipment in a clean area
 | * To reduce the risk of cross infection and encourage good hygiene (Anderton, 1995; Pratt, 2001; NICE 2003; DoH 2010).
 |
| * Position the child appropriately and explain what you are going to do – age appropriately.
 | * To prepare the child physically and psychologically.
 |
| * Note the external length marking on the NGT/OGT/NJT by the nostril/mouth
* Using a finger, gently hold the tube in place whilst removing the old tape from the child’s face.
 | * To ensure tube remains at correct position and allow for detection of a displaced tube(Dougherty and Lister, 2008; NPSA, 2011).
* To prevent the NGT/OGT/NJT from dislodging.
* To allow access to the skin.
 |
| * Clean the skin using warm water and small face cloth/gauze
 | * To freshen skin and remove old residue from previous tapes.
 |
| * Observe the skin for any signs of skin breakdown: redness; spots; rash; bleeding.
 | * To assess skin for any irritation and changes.
 |
| * Pat skin dry with clean dry face cloth/gauze
 | * To prevent infection and prepare the skin for new tape to be secured.
 |
| * Check external tube length is the same
* Apply Duoderm (or similar type dressing) directly to cheek under the tube.
* Place the tube on top of the duoderm and secure tegaderm (or similar type dressing) over the tube.
 | * To ensure correct tube placement (NPSA, 2011).
* To prevent tube from irritating the skin (Huband and Trigg, 2000; NHS QIS, 2007).
* To secure the NGT/OGT/NJT in place.
 |
| * NGT/OGT only - using a syringe to aspirate (draw up) 2 – 5mls of stomach contents and place on pH indicator strips
* Check pH is **≤** 5.5
* Record pH on nasogastric tube placement checklist.
* Flush tube with 5mls water (NGT/OGT only)
 | * To test if tube is in correct position in the stomach (NPSA, 2005)
* pH above 5.5 may indicate bronchial placement of NGT(NPSA, 2005)
* Accurate record keeping ensuring feeding can commence safely(NPSA, 2011).
* To keep the tube patent and free from blockages.
 |
| * Tidy away equipment and wash hands
 | * To ensure the child’s safety and reduce the risk of cross infection(NICE, 2003; DoH, 2010)
 |
| * Document any changes identified.
 | * To keep team fully informed.
 |
| Additional Information:1. Tape changes should take place at least weekly or when tape is peeling off or dirty.
2. If skin is identified as broken down and you are unable to find a suitable site to secure the tube, the tube needs to be re passed through the other nostril (where possible).
3. If you have not been trained to re pass the tube, please contact your community nursing team (as early as possible) or a member of ward staff as appropriate.
 |

# Procedure for Giving a Bolus Feed using a feed pump, via a Nasogastric Tube (NGT) or Oro Gastric tube (OGT)

**Aim:** To complete the feed safely and therefore maintain optimal nutritional status.

**Equipment:** Disposable Apron (if appropriate)

Disposable gloves

Appropriate feeding pump

Appropriate feed giving set

Freshly drawn tap water (cold tap) for children over 1yr to flush tube

 Cooled boiled water (or sterile) for children under 1yr to flush tube

Sterile water for children who are hospitalised to flush tube (NICE, 2003)

Feed at room temperature (remove from fridge 30 minutes before) (NHS QIS, 2007)

Syringes x 2 – 10ml/20ml for PVC, 50ml for polyurethane (silk) tube

 Johnson pH indicator strips (pH range 0-6)

|  |  |
| --- | --- |
| Action: | Rationale: |
| * Apply apron (if appropriate)
* Wash hands and apply gloves
* Prepare feed and equipment in a clean area
* Check feed (feed type; expiry date; colour; smell. If the feed is curdled, do not use)
 | * To reduce the risk of cross infection /encourage good hygiene (Anderton, 1995; Pratt, 2001; NICE 2003; DoH 2010).
* To ensure correct feed is delivered to the child safely.
 |
| * If using powder feed, ensure it is made up correctly according to Dietitian instructions.
 | * To ensure child receives correct concentration of feed (NHS QIS, 2007).
 |
| * Explain what you are going to do - age appropriately.
* Position the child either sitting or nursed at a 30° angle.
 | * To prepare the child physically and psychologically.
* To prevent aspiration of feed into the lungs (Rudolph et al, 2001 cited in NHS QIS, 2007)
 |
| * Attach feed to giving set or decant feed into bag using a non touch technique.
 | * To prepare for feeding (NICE, 2003).
 |
| * Plug in and switch on feeding pump.
* Test the alarm on the pump.
* Load the giving set correctly into the pump.
* Clear the volume infused.
* Prime the set via the pump.
 | * Safety checks to ensure the pump and alarms are working (Huband and Trigg, 2000).
* For accurate measurement of feed to be delivered (MDA/2007/098).
* To prevent air entering into the stomach and causing discomfort to the child (NHS QIS, 2007; Fresenius Kabi, 2006).
 |
| * Set the pump to the correct rate (mls/hr).
* If a specific volume of feed is to be delivered, use the appropriate function on the pump and set a total volume for delivery.
 | * To ensure feed is given at correct rate, volume and over the specified time for the child (Huband and Trigg, 2000; NHS QIS, 2007).
 |
| * Observe and document external length of nasogastric tube on checklist
* Attach empty appropriate size syringe to tube
* Aspirate (draw back) 2-5mls of stomach contents into the syringe.
* Place aspirate onto pH indicator strips
* Record pH on nasogastric tube confirmation checklist
* If pH is ≤ 5.5 commence feeding2,3
* If you are unable to obtain a pH of ≤ 5.5 please refer to troubleshooting guidelines “Unable to obtain aspirate”
 | * To ensure tube has not been displaced (NPSA,2011).
* To test if tube is in correct position within the stomach (NPSA,2005).
* Accurate record keeping ensuring feeding can commence safely and ensure tube has not displaced (NPSA, 2011).
* pH above 5.5 may indicate bronchial placement of NGT (NPSA, 2005).
* To ensure safe feeding via the nasogastric tube (NPSA, 2005)..
 |
| * Attach syringe filled with specified amount of water to tube.
* Flush tube with water.
* Disconnect syringe and connect the end of the feeding line to tube using a non touch technique.
* You may need to remove the end of the feeding set before connection to the tube.
 | * To check patency of NGT/OGT and hydrate the child or young person (NHS QIS, 2007).
* To reduce the risk of infection to the child or young person (NICE, 2003)
* To have a safe and secure connection
 |
| * Set the pump to run.

**CHILD SHOULD NOT BE LEFT ALONE DURING FEEDING** | To minimise the risk of underfeeding, aspiration and entanglement. |
| * If appropriate encourage the child to suck a dummy during feed
* Older child, give feed at dinner table during meal time and allow to play with feeding utensils
 | * Encourages an association of sucking with feeding sensation
* Encourages play and socialisation.

 (Huband and Trigg, 2000) |
| * When feed is complete, turn off pump and disconnect feeding set.
* Flush the tube with specified amount of water.
 | * To ensure the tube is clear from milk and to prevent blockages (Huband and Trigg, 2000; NICE, 2003; NHS QIS, 2007)
 |
| * Discard used syringes and giving set (if single use).
 | * To prevent reuse as they may not be effective or safe (MHRA, 2006)
* To reduce the risk of cross infection and contamination(NICE, 2003; DoH, 2010)
 |
| * Tidy away equipment and wash hands
 | * To ensure the child’s safety and reduce the risk of cross infection (NICE, 2003; DoH, 2010)
 |
| Additional information:1. When using decanted feeds, giving sets must be changed after every feed and should only hang for 4hours (NICE, 2003; DoH, 2010)
2. When using ready to hang bags, giving sets can be used for 24hrs, if kept as a closed circuit (NICE, 2003; DoH, 2010).
3. An NGT/OGT does not have a clamp in place. When connecting and disconnecting syringe/giving set to the tube, ensure the tube end is folded over to prevent stomach contents leaking out.
 |

**Appendix 4**

# Procedure for Giving a Continuous Feed using a feed pump, via a Nasogastric Tube (NGT) or Oro Gastric tube (OGT)

**Aim:** To complete the feed safely and therefore maintain optimal nutritional status.

**Equipment:** Disposable apron (as appropriate)

Disposable gloves

Appropriate feeding pump

Appropriate feed giving set

Freshly drawn tap water (cold tap) for children over 1yr to flush tube

 Cooled boiled water (or sterile) for children under 1yr to flush tube

Sterile water for children who are hospitalised to flush tube (NICE, 2003)

Feed at room temperature (remove from fridge 30 minutes before) (NHS QIS, 2007)

Syringes x 2 – 10ml/20ml for PVC, 50ml for polyurethane (silk) tube

 Johnson pH indicator strips (pH range 0-6)

|  |  |
| --- | --- |
| Action: | Rationale: |
| * Apply apron (if appropriate)
* Wash hands and apply gloves
* Prepare feed and equipment in a clean area
* Check feed (feed type; expiry date; colour; smell. If the feed is curdled, do not use)
 | * To reduce the risk of cross infection /encourage good hygiene (Anderton, 1995; Pratt, 2001; NICE 2003; DoH 2010)..
* To ensure correct feed is delivered to the child safely.
 |
| * If using powder feed, ensure it is made up correctly according to Dietitian instructions.
 | * To ensure child receives correct concentration of feed (NHS QIS, 2007)..
 |
| * Explain what you are going to do - age appropriately.
* Position the child either sitting or nursed at a 30° angle.
 | * To prepare the child physically and psychologically.
* To prevent aspiration of feed into the lungs (Rudolph et al, 2001 cited in NHS QIS, 2007
 |
| * Attach feed to giving set or decant feed into bag using a non touch technique.
 | * To prepare for feeding (NICE, 2003)..
 |
| * Plug in and switch on feeding pump.
* Test the alarm on the pump.
* Load the giving set into the pump.
* Clear the volume infused.
* Prime the set via the pump.
 | * Safety checks to ensure the pump and alarms are working(Huband and Trigg, 2000).
* For accurate measurement of feed to be delivered (MDA/2007/098).
* To prevent air entering into the stomach and causing discomfort to the child (NHS QIS, 2007; Fresenius Kabi, 2006).
 |
| * Set the pump to the correct rate (mls/hr).
* If a specific volume of feed is to be delivered, use the appropriate function on the pump and set a total volume for delivery. Pump is not to be switched off during administration of feed.
 | * To ensure feed is given at correct rate, volume and over the specified time for the child (Huband and Trigg, 2000; NHS QIS, 2007)..
 |
| * Observe and document external length of nasogastric tube on checklist
* Attach empty appropriate size syringe to tube
* Aspirate (draw back) 2-5mls of stomach contents into the syringe.
* Place aspirate onto pH indicator strips
* Record pH on nasogastric tube confirmation checklist
* If pH is ≤ 5.5 commence feeding2,3
* If you are unable to obtain a pH below ≤ 5.5 please refer to troubleshooting guidelines “Unable to obtain aspirate”
 | * To ensure tube has not been displaced (NPSA,2011).
* To test if tube is in correct position within the stomach (NPSA,2005).
* Accurate record keeping ensuring feeding can commence safely and ensure tube has not displaced (NPSA, 2011).
* pH above 5.5 may indicate bronchial placement of NGT (NPSA, 2005).
* To ensure safe feeding via the nasogastric tube (NPSA, 2005)..
 |
| * Attach syringe filled with specified amount of water to tube.
* Flush tube with water.
* Disconnect syringe and connect the end of the feeding line to tube using a non touch technique.
* You may need to remove the end of the feeding set before connection to the tube.
 | * To check patency of NGT/OGT and hydrate the child or young person (NHS QIS, 2007).
* To reduce the risk of infection to the child or young person (NICE, 2003)
* To have a safe and secure connection
 |
| * Set the pump to run.

**CHILD SHOULD NOT BE LEFT ALONE DURING FEEDING** | To minimise the risk of underfeeding, aspiration and entanglement. |
| * If appropriate encourage the child to suck a dummy during feed
* Older child, give feed at dinner table during meal time and allow to play with feeding utensils
 | * Encourages an association of sucking with feeding sensation
* Encourages play and socialisation.

 (Huband and Trigg, 2000) |
| * When feed is complete, turn off pump and disconnect feeding set.
* Flush the tube with specified amount of water.
 | * To ensure the tube is clear from milk and to prevent blockages (Huband and Trigg, 2000; NICE, 2003; NHS QIS, 2007)
 |
| * Discard used syringes and giving set (if single use).
 | * To prevent reuse as they may not be effective or safe (MHRA, 2006)
* To reduce the risk of cross infection and contamination(NICE, 2003; DoH, 2010)
 |
| * Tidy away equipment and wash hands
 | * To ensure the child’s safety and reduce the risk of cross infection (NICE, 2003; DoH, 2010)
 |
| Additional information:1. This type of feeding via an NGT/OGT is not recommended for overnight within the community setting due to the risks associated with a displaced tube. It will only be used when alternative regimes have been tried but not successful. A referral for insertion of gastrostomy must be made as a matter of urgency.
2. When using decanted feeds, giving sets must be changed after every feed (NICE, 2003; DoH, 2010)
3. Hospital setting: decanted feeds and sets should be changed every four hours (NICE, 2003; DoH, 2010)
4. Community setting for overnight feeds: decanted feeds and sets should be changed every four hours due to the instability of decanted feeds and risk of infection(NICE, 2003; DoH, 2010). It is acknowledged that some families may choose to hang these feeds for the entirety of the night but they should be made aware of the risks associated with this practise.
5. Sterile feeds and giving set can be used for 24hrs, if kept as a closed circuit (NICE, 2003; DoH, 2010).
6. An NGT/OGT does not have a clamp in place. When connecting and disconnecting syringe/giving set to the tube, ensure the tube end is folded over to prevent stomach contents leaking out.
 |

# Procedure for Giving a Bolus Feed using a gravity feeding set, via a Nasogastric Tube (NGT) or Oro Gastric tube (OGT)

**Appendix 5**

**Aim:** To complete the feed safely and therefore maintain optimal nutritional status.

**Equipment:** Disposable Apron (if appropriate)

Disposable gloves

Appropriate gravity feed giving set

Freshly drawn tap water (cold tap) for children over 1yr to flush tube

 Cooled boiled water (or sterile) for children under 1yr to flush tube

Sterile water for children who are hospitalised to flush tube (NICE, 2003)

Feed at room temperature (remove from fridge 30 minutes before) (NHS QIS, 2007)

Syringes x 2 – 10ml/20ml for PVC, 50ml for polyurethane (silk) tube

 Johnson pH indicator strips (pH range 0-6)

|  |  |
| --- | --- |
| Action: | Rationale: |
| * Apply apron (if appropriate)
* Wash hands and apply gloves
* Prepare feed and equipment in a clean area
* Check feed (feed type; expiry date; colour; smell. If the feed is curdled, do not use)
 | * To reduce the risk of cross infection /encourage good hygiene (Anderton, 1995; Pratt, 2001; NICE 2003; DoH 2010).
* To ensure correct feed is delivered to the child safely.
 |
| * If using powder feed, ensure it is made up correctly according to Dietitian instructions.
 | * To ensure child receives correct concentration of feed (NHS QIS, 2007)..
 |
| * Explain what you are going to do - age appropriately.
* Position the child either sitting or nursed at a 30° angle.
 | * To prepare the child physically and psychologically.
* To prevent aspiration of feed into the lungs (Rudolph et al, 2001 cited in NHS QIS, 2007)
 |
| * Observe and document external length of nasogastric tube on checklist
* Attach empty appropriate size syringe to tube
* Aspirate (draw back) 2-5mls of stomach contents into the syringe.
* Place aspirate onto pH indicator strips
* Record pH on nasogastric tube confirmation checklist
* If pH is ≤ 5.5 commence feeding2,3
* If you are unable to obtain a pH below ≤ 5.5 please refer to troubleshooting guidelines “Unable to obtain aspirate”
 | * To ensure tube has not been displaced (NPSA,2011).
* To test if tube is in correct position within the stomach (NPSA,2005).
* Accurate record keeping ensuring feeding can commence safely and ensure tube has not displaced (NPSA, 2011).
* pH above 5.5 may indicate bronchial placement of NGT (NPSA, 2005).
* To ensure safe feeding via the nasogastric tube (NPSA, 2005)..
 |
| * Attach syringe filled with specified amount of water to tube.
* Flush tube with water and disconnect syringe.
 | * To check patency of NGT/OGT and hydrate the child or young person (NHS QIS, 2007)
 |
| * Prime the giving set by allowing feed to run to the end of the line and lock roller clamp.
 | * To prevent air entering into the stomach and causing discomfort to the child (Huband and Trigg, 2000).
 |
| * Connect the end of the giving set to the tube using a non touch technique.
* You may need to remove the end of the giving set before connecting to the tube.
* Allow the feed to enter the stomach by gravity, controlling the flow rate with roller clamp.
* The feed should take approx 20minutes (this will vary per child).

**CHILD SHOULD NOT BE LEFT ALONE DURING FEEDING** | * To reduce the risk of infection to the child or young person (NICE, 2003)
* To have a safe and secure connection
* To prevent discomfort to the child or vomiting (Huband and Trigg, 2000; NHS QIS, 2007)
 |
| * If appropriate encourage the child to suck a dummy during feed
* Older child, give feed at dinner table during meal time and allow to play with feeding utensils
 | * Encourages an association of sucking with feeding sensation
* Encourages play and socialisation.

 (Huband and Trigg, 2000) |
| * When feed is complete (when the last of the milk is at the tip of the NGT/OGT), disconnect giving set.
* Flush the tube with specified amount of water.
 | * To ensure the tube is clear from milk and to prevent blockages (Huband and Trigg, 2000; NICE, 2003; NHS QIS, 2007)
 |
| * Discard used syringes (if single use) and giving set.
 | * To prevent reuse as they may not be effective or safe (MHRA, 2006)
* To reduce the risk of cross infection and contamination(NICE, 2003; DoH, 2010)
 |
| * Tidy away equipment and wash hands
 | * To ensure the child’s safety and reduce the risk of cross infection (NICE, 2003; DoH, 2010)
 |
| Additional information:1. Gravity feeding sets are single use and must be discarded after use (MHRA, 2006).
2. An NGT/OGT does not have a clamp in place. When connecting and disconnecting syringe/giving set to the tube, ensure the tube end is folded over to prevent stomach contents leaking out.
 |

**Trouble Shooting for nasogastric or oral gastric tube (NGT/OGT)**

**Appendix 6**

Remember usual pH of stomach contents should be ≤ 5.5. DO NOT FEED if you can not obtain a pH between this range

|  |  |
| --- | --- |
| **Problem:**  Unable to obtain an aspirate of ≤ 5.5 (after initial placement has been confirmed) | **Causes:** * Aspirate removed is too small (only taken from the tube not stomach)
* Tube is wrongly placed within the lungs, oesophagus or small bowel
* (Antacid) Medications affecting pH
* Tube is above fluid level in stomach
* Tube is occluded (mucosa of stomach or other)
 |
| **Action:** | **Rationale:** |
| * Attach 20ml syringe and try to draw back (aspirate) a further 2-5mls stomach content.
* Place liquid on pH indicator strips.
* If pH is ≤ 5.5 commence feeding
 | * To ensure fluid aspirated contains stomach content and not just the fluid from the tube
* To identify pH of the fluid
* To maintain the child’s nutrition
 |
| * Insert up to 5mls of air through the tube
* Wait 10-15minutes
* Re aspirate stomach contents as above
* If pH is ≤ 5.5 commence feeding
 | * To expel any blockages from the tube or to dislodge the tip of the tube from the stomach mucosa(NPSA,2005)
* To identify pH of the fluid
* To maintain the child’s nutrition
 |
| * Change the child or young person’s position
* Re aspirate stomach contents as above
* If pH is ≤ 5.5 commence feeding
 | * To encourage the tip of the tube to re enter the stomach fluid.
* To identify pH of the fluid
* To maintain the child’s nutrition
* (NPSA, 2005)
 |
| * Try retracting the tube up to 5cm and re aspirate stomach contents as above (if trained to do so).
* Try inserting the tube up to 5cm and re aspirate stomach contents as above (if trained to do so).I
* If pH is ≤ 5.5 commence feeding
 | * To move the tube back into the stomach if it was within the small bowel
* To move the tube into the stomach if it was within the oesophagus
* To move the tip of the tube back into the fluid within the stomach
* (Huband and Trigg, 2000; NPSA, 2005)
* To maintain the child’s nutrition
 |
| * Consider the medication given and time given.
* If the child/young person can have oral fluid, give them a coloured drink and aspirate the tube
* If coloured liquid is observed, commence feeding.
 | * Antacids will affect the pH as it reduces the acid within the stomach (NPSA, 2011).
* The coloured drink should be observed in the aspirate if the tube is within the stomach (NPSA, 2005)
 |
| * If pH is still above 5.5, remove tube and reinsert if trained to do so.
* Contact the parents/guardians or nurses if you are not trained to re pass the tube.
* Guidelines for placement of nasogastric/oral gastric tube should be followed
 | * In case tube is placed within the lungs
* Only trained persons should pass a nasogastric/oral gastric tube (NPSA, 2011).
* To ensure the NGT/OGT is correctly placed within the stomach.
 |
| **Additional information:*** See section 9.4 re circumstances where it may not be possible to obtain an aspirate between 1 and 5.5 and daily x-rays are not practical or safe for actions to be taken.
* The NG tube must not be flushed, used for feeding or drug administration until the correct position of the tube has been confirmed by an authorised health professional.

 (NPSA, 2011) |

|  |  |
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| **Problem:**  Accidental displacement | **Causes:** * Tube accidently pulled out
* Child has coughed/vomited or sneezed the tube out
 |
| **Action:** | **Rationale:** |
| * Check to see how much the NGT/OGT has been displaced
* If feed is being administered, stop feed immediately
* If the tube is less than 3cm out of the nostril, gently guide the tube back into place.
 | * To identify whether the tube can be re positioned safely.
* To prevent aspiration of feed.
* The tube should still be within the oesophagus and can be replaced within the stomach.
 |
| * Attach 20ml syringe and try to draw back (aspirate) stomach content.
* Place aspirate onto pH indicator strips (≤ 5.5)
* If pH is ≤ 5.5 ensure NGT/OGT is secured in place.
* Recommence feeding if previously stopped.
 | * To check for correct tube placement within the stomach (NPSA, 2005)
* To prevent further displacement of the tube
* To maintain the child’s nutrition.
 |
| * If more than 3cm of the tube has been displaced (through the nose or mouth), apply gloves and remove the tube completely.
 | * Tube has moved too far to be safely repositioned (Medicina, 2011).
 |
| * If the tube has come completely out of the mouth but remains taped to the face, apply gloves and gently remove the tube completely from the nose.
 | * Tube has been displaced but remains within the oral and nasal cavities.
 |
| * If the tube is long term, flush tube through with 10mls water and re pass the tube (if trained) following “Passing a NGT/OGT” procedure.
* If short term tube, discard and pass new tube (if trained) following “Passing a NGT/OGT” procedure.
* If not trained please contact parent/guardian or nurse to pass tube.
* Once tube placement is confirmed, recommence feeding if previously stopped.
 | * long term tubes can re used:Medicina – up to 60 days (Medicina, 2011)
* Corflo – as long as tube remains viable (MerckSerono,2009)
* Short term tubes are single use only (Medicina, 2011)
* Only trained staff should pass NGT (NPSA, 2011)
* To maintain the child’s nutrition
 |
|  Additional information:* If facial tapes securing the NGT/OGT are becoming loose, change the tapes following “procedure for skin care of NGT-OGT” to prevent accidental displacement
* Try to secure the end of the NGT/OGT in a position that minimises the risk of accidental displacement, For example, on the back of the child’s t-shirt, behind the child’s ear.
 |

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| **Problem:**  Blocked tube after feeding has commenced | **Causes:** * Kinked tube or tube clamped
* Inadequate flushing
* Viscous feed
* Drugs/tablets not crushed adequately
* Stomach contents within tube
 |
| **Action:** | **Rationale:** |
| * Check NGT/OGT for any kinks or pressure on line.
* Rectify if any of these problems are found and recommence feeding.
 | * To identify the cause of the blockage
* To unblock the tube
* To maintain the child’s nutrition
 |
| * Attach 20ml syringe and try to draw back (aspirate) stomach content.
* Remove syringe and attach new 20ml syringe with 10mls water and try to flush the tube (use “push-pull” technique).
* If the tube flushes, recommence feeding
 | * To try and remove the blockage
* To check the tube is free from blockages
* To maintain the child’s nutrition

 (NHS QIS, 2007) |
| * Massage the external NGT/OGT, starting from the child’s face.
* Try and flush the tube with 10mls water
* If the tube flushes, recommence feeding.
 | * To try and break up any blockages within the tube.
* To check the tube is free from blockages
* To maintain the child’s nutrition

 (NHS QIS, 2007) |
| * Try and flush the tube with 10mls warm water.
* If the tube flushes, recommence feeding.
 | * To try and disperse the blockage and check the tube is free from blockages.
* To maintain the child’s nutrition
* (NHS QIS, 2007; Dougherty and Lister, 2008; Medicina, 2011)
 |
| * Try and flush the tube with 10mls Carbonated water (fizzy) - for example Soda water and leave for 30minutes
* Try and flush the tube with 10mls water
* If the tube flushes, recommence feeding.
 | * To try and disperse the blockage.
* (NHS QIS, 2007; Dougherty and Lister, 2008Medicina, 2011)
* To check the tube is free from blockages
* To maintain the child’s nutrition
 |
| * Remove the NGT/OGT.
* If the tube is long term, flush tube through with 10mls water and if free of blockages re pass the tube (if trained) following “Passing a NGT/OGT” procedure.
* If short term tube, discard and pass new tube (if trained) following “Passing a NGT/OGT” procedure.
* If not trained please contact parent/nurse to pass tube.
* Once tube placement is confirmed, recommence feeding.
 | * To check the tube is free from blockages
* Long term tubes can re used:Medicina – up to 60 days (Medicina, 2011)
* Corflo – as long as tube remains viable (MerckSerono,2009)
* Short term tubes are single use only (Medicina, 2011)
* Only trained staff should pass NGT (NPSA, 2011)
* To allow feeding to recommence
* To maintain the child’s nutrition
 |
| **Preventing blockages of NGT/OGT:*** Regular flushing of the NGT/OGT before and after medications and feeds should prevent blockages of tubes (NICE, 2003).
* If the NGT/OGT is not in regular use, it should be flushed with at least 10mls water three times a day – after position is confirmed (Huband and Trigg, 2000; MerckSerono,2009; Medicina, 2011).
* Only administer prescribed feeds and medications via the NGT/OGT.
 |
| **Other important information:*** If the cause of the blockage is medication, be aware that flushing the contents of the tube into the child could result in a drug overdose.
* Do not use acidic solutions – for example Cola, lemonade or fruit juice as they may make the blockage worse or damage the tube
* Do not use excessive force or syringes smaller than 20mls to flush or aspirate as the high pressure may damage the tube
* Do not insert objects into the tube in an attempt to unblock as this may further damage the tube.

 (Huband and Trigg, 2000; Dougherty and Lister, 2008; MerckSerono, 2009) |

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| **Problem:**  Vomiting | **Causes:** * Wrong milk
* Contaminated/Expired milk
* Inappropriate temperature
* Feed given too quickly
* Feeding position of child
* Delayed gastric emptying
* Medical reason
 |
| **Action:** | **Rationale:** |
| * Stop the feed
* Clear any vomit and mucous from mouth and nose
 | * To assess the child safely and ensure airway is clear.
* To make the child comfortable.
 |
| * Check the child is receiving the correct milk.
* Check the expiry date of milk and no obvious signs of contamination/curdling.
* Check the milk is at room temperature.
 | * To ensure the milk is not the cause of the vomiting.
 |
| * Check the rate of the feed if using a feed pump.
* If using a gravity feeding set, ensure the feed is given over at least 30 minutes
 | * To ensure the feed is not running too quickly (Huband and Trigg, 2000).
 |
| * Check the child is seated appropriately (at least 30o )
 | * To prevent vomiting and aspiration (Rudolph et al, 2001 cited in NHS QIS, 2007).
 |
| * Check the child has received anti reflux medication (if prescribed)
 | * To encourage gastric emptying
 |
| * Wait 20 minutes and aspirate tube prior to recommencing feed as per regime.
* If pH of ≤ 5.5 is obtained recommence feeding
 | * To allow the child to recover from the vomiting.
* To ensure the tube has not displaced during the vomiting episode (NPSA, 2011)
 |
| **If vomiting continues when feed is recommenced:*** Stop Feed
* Contact dietitian for advice (to review type, rate and feeding regime)
* Consider medical intervention/review (GP/Community Paediatrician/Hospital medical team).
 |

|  |  |
| --- | --- |
| **Problem:**  Diarrhoea(stool that is loose, runny, watery) | **Causes:** * Medical reason
* Wrong milk
* Drug therapy (for example antibiotics)
* Contaminated/Expired milk
* Feed given too quickly
* Osmolarity of feed
* Migration of tube position
 |
| **Action:** | **Rationale:** |
| * Stop the feed
* Clean the child
 | * To assess the child safely.
* To make the child comfortable.
 |
| * Observe and document external tube length
* Check tube position by using a syringe, aspirate (draw up) 2- 5mls of stomach contents
* Place fluid on pH indicator strips
* If pH above 5.5 withdraw the tube up to 5cm and retest
 | * To check for correct tube placement within the stomach (NPSA, 2011)
* To test if tube has migrated into the bowel.
* If pH above 5.5 then tube is within the small bowel not the stomach.
* To remove the tube from the bowel and back into the stomach.

 (Huband and Trigg, 2000; NPSA, 2005) |
| * Check the child is receiving the correct milk.
* Check the expiry date of milk and no obvious signs of contamination/curdling.
 | * To ensure the milk is not the cause of the diarrhoea.
 |
| * Check the rate of the feed if using a feed pump.
* If using a gravity feeding set, ensure the feed is given over at least 30 minutes
 | * To ensure the feed is not running too quickly (Huband and Trigg, 2000).
 |
| * Check whether the child has started antibiotics or any new medications in the past 24 - 48hours.
 | * To ensure the medication is not the cause of the diarrhoea
 |
| * If medications are thought to be the cause of the diarrhoea, seek health professional advice.
 | * To ensure the child is safe to continue with medication.
 |
| * Recommence feed as per regime.
 | * To allow the child to obtain adequate nutrition
 |
| **If diarrhoea continues when feed is recommenced:*** Obtain stool sample for Microscopy, culture and sensitivity plus virology
* Contact dietitian for advice (to review type, rate and feeding regime)
* Consider medical intervention/review (GP/Community Paediatrician/Hospital medical team).
* Medical team: Consider medications to check sorbital content; use of anti-diarrhoeal
 |