



Good Practice Guideline – Changing of a Balloon Gastrostomy Tube (BGT) into the Stomach for Adults and Children

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Good Nutrition Needs Nurses

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Description

A balloon gastrostomy (BGT) is a feeding tube that is placed directly through the abdomen into the stomach and held in place by an inflatable balloon. It is usually made of silicone or polyurethane and may range in size from 10-24 french gauge. Balloon volumes differ according to the tube size and manufacturers recommendations. The life of a balloon gastrostomy tube varies according to the manufacturer and may last between three to nine months (Ojo 2011). However issues such as gastric pH, frequency of tube use and fungal infection may affect the longevity of the balloon.

External Fixation Plate

All balloon gastrostomies have an external fixation device (or bolster). These may differ in appearance according to the manufacturer.

Use of a Balloon Gastrostomy Tube

A balloon gastrostomy may be used for:

- The administration of feed, fluid, medication or a combination of all three.
- Gastric decompression and/or drainage.
- Maintaining direct access to the stomach in preparation for future use (e.g. in deteriorating neurological disease).

Placement of Balloon Gastrostomy Tube

This type of gastrostomy tube can be placed radiologically (RIG), endoscopically or surgically.

They may be used as a primary tube placement but are more commonly used as a replacement gastrostomy.

If a balloon gastrostomy is to be replaced percutaneously it must be via an established stoma tract.

An established tract is patient specific but is usually considered safe from four to six weeks post insertion of a primary tube placement (Taheri et al 2011, Maxwell et al 2011).

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	Assessment		
No	Action	Rationale	Reference
1.	The patient must have an accessible gastro-intestinal tract.	To safely insert the gastrostomy tube into the stomach at the bedside.	NICE (2006)
2.	The patient should have a functioning gastro-intestinal tract.	To maximise absorption of feeds, fluids and/or medication.	NICE (2006) White & Bradnam (2015)
3.	The patient should have a healthy established existing stoma tract of at least 4-6 weeks old (local protocol may state longer time to ensure established tract).	To minimise the risk of misplacement of the BGT. To minimise the potential risk of causing a perforation.	Taheri et al, (2011) Maxwell et al (2011) Nicholas et al (2015)
4.	Explain the procedure to the patient and where they have capacity to consent, their agreement should be obtained. For this procedure verbal consent is sufficient.	To demonstrate understanding and patient agreement with the procedure.	DH (2009a)

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5.	<p>Where patients demonstrate a lack of capacity a best Interest decision should be taken to ensure the most appropriate course of action is taken for the patient.</p> <p>This may necessitate further discussion with the wider multi-disciplinary team (MDT) and may require the involvement of an Independent Mental Capacity Assessor (IMCA).</p>	<p>To demonstrate compliance with current legislation.</p> <p>To demonstrate wider consultation with relevant health care professionals to ensure an appropriate decision is made.</p>	<p>DH (2005) DH (2009)</p>
6.	<p>The procedure to replace a balloon gastrostomy can be undertaken in either a hospital or community environment by a healthcare practitioner with the relevant knowledge and skills.</p> <p>If a gastrostomy tube is to be changed in the community, where possible the procedure should be undertaken within office hours.</p>	<p>To ensure expert support is accessible, if required.</p>	<p>Ojo (2011) NMC (2014) NMC (2015)</p>
7.	<p>Before undertaking a gastrostomy replacement always check the patient’s healthcare notes for records of previous gastrostomy replacements which may outline any considerations or problems regarding the replacement procedure including:</p> <ul style="list-style-type: none"> • A deviated tract, • Previous pH readings of gastric aspirate, • Normal lifespan of the patient’s gastrostomy tube. 	<p>To increase practitioner awareness and minimise complications during the procedure.</p>	<p>NMC (2014) NMC (2015)</p>

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8.	<p>In preparation for the procedure ensure the patient has been nil by gastrostomy/nil by mouth, as follows:</p> <ul style="list-style-type: none"> • Clear fluids for 2 hours prior to BGT replacement. • Feed for 4 hours prior to BGT replacement. <p>Medication: Essential medication should not omitted pre-procedure without the support of the prescribing clinician. However, it may be advisable to omit medication that may affect the pH value of gastric aspirate, for example, proton pump inhibitors (PPIs), before undertaking a balloon gastrostomy tube change.</p>	<p>To minimise the risk of gastric leakage obscuring the gastrostomy site and causing damage to the surrounding skin on removal of BGT.</p> <p>To allow the pH of gastric secretions to fall to enable confirmation of placement with gastric pH less than 5.5.</p>	Fletcher (2011)
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	Equipment required to change a balloon gastrostomy tube		
No	Action	Rationale	Reference
9.	<p>Equipment Required:</p> <ul style="list-style-type: none"> • A CE marked balloon gastrostomy tube of the appropriate size. • Where possible a selection of balloon gastrostomies, one size smaller and one size larger than the tube previously used in case of stoma size change or problems during the insertion procedure. • Basic dressing pack. • Non sterile gloves and apron. • Water based lubricant (may be included in gastrostomy kit). • Two sterile luer slip syringes to deflate/inflate balloon - 5-20mls (size dependent upon balloon size and manufacturer recommendation). <p>Note: A prefilled syringe may be included in some gastrostomy kits.</p> <ul style="list-style-type: none"> • Water for balloon (sterile or cooled boiled water as per local policy) if not included in gastrostomy kit. • pH indicator strips/paper (CE marked for human aspirate) covering pH range 1-6. • Enteral syringe to check gastric placement. 	<p>To ensure all necessary and appropriate equipment is to hand to minimise risk, unnecessary interruptions and promote a safe and timely gastrostomy tube placement.</p>	

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	<ul style="list-style-type: none">○ In adults: 60ml enteral syringe○ In children: 60ml can be used but if unable to obtain an aspirate consider using a smaller syringe, (10-20ml).● 60ml enteral syringe to flush the gastrostomy tube post placement once gastric position has been confirmed.● Water for flushing (cooled boiled, sterile or tap water according to local policy).		
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	Procedure		
No	Action	Rationale	Reference
10.	Balloon gastrostomy tube replacement is a procedure which should be conducted using standard aseptic non touch technique (ANTT).	To minimise risk of infection and/or harm to the patient and practitioner.	Rowley (2011) Pratt et al (2007), Fraise & Bradley (2009)
11.	<p>Wash hands prior to undertaking the procedure. Follow the five moments for hand hygiene.</p> <p>Ensure universal precautions are used at all times. Use non-sterile gloves and apron.</p> <p>Gather all equipment prior to arriving to the patient’s bedside or home.</p> <p>Check equipment is in within date and undamaged.</p> <p>Prepare equipment at the patient’s bedside and remind the patient of the procedure to be undertaken.</p>	<p>To adhere to local infection prevention and control policies.</p> <p>To ensure timely uninterrupted insertion of the gastrostomy tube.</p>	<p>NPSA (2005) DH (2009b) Rowley (2011) WHO (2009)</p>

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12.	Explain proposed procedure to patient.	To demonstrate understanding and patient agreement with the procedure.	DH (2005) DH (2009a)
13.	Ensure the patient lies in a semi-recumbent position.	To ensure patient comfort and safety To ensure clear examination of the balloon gastrostomy site.	
14.	Open the dressing pack on a clean surface and place relevant equipment onto it.	To ensure all equipment is placed onto a clean area. To ensure all necessary equipment to undertake procedure is present and functioning.	Rowley (2011) Pratt et al (2007) Fraise & Bradley (2009)
15.	Prefill one luer slip syringe with sterile or cooled boiled water, as per local policy and manufacturers' guidance, ready for balloon inflation if a prefilled syringe is not included in the gastrostomy kit.	To ensure the timely uninterrupted insertion of a gastrostomy tube.	DH (2009b)

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Check New Balloon Gastrostomy Tube Prior To Insertion			
No	Action	Rationale	Reference
16.	<p>The following checks should be undertaken prior to inserting the new balloon gastrostomy tube:</p> <ul style="list-style-type: none"> • Check the expiry date on the outside of the gastrostomy tube packaging. • Check the ease of mobility of the fixation device/bolster by moving it up and down the length of the gastrostomy tube. • Close the feeding end of the balloon gastrostomy tube. • Using the prefilled syringe inflate and deflate the balloon on the gastrostomy tube as per manufacturers guidance to check it inflate correctly. If the balloon does not inflate properly or at all do not use the balloon gastrostomy tube. If the balloon inflates easily and around the whole balloon gastrostomy tube, deflate the balloon and proceed with gastrostomy tube change. • Lubricate the proximal end of the balloon gastrostomy tube using a water based lubricant. 	<p>To ensure equipment is within date.</p> <p>To ensure new balloon gastrostomy tube is undamaged.</p> <p>To prepare for insertion of new balloon gastrostomy tube.</p>	Manufacturers guidelines

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Turning to the patient			
No	Action	Rationale	Reference
17.	<p>Clean the gastrostomy site if indicated.</p> <p>Move the external fixation device/bolster of the existing gastrostomy tube away from the abdomen.</p> <p>Using the water based lubricant, lubricate the stoma site and a section of the existing gastrostomy tube closest to the abdomen.</p> <p>Mobilise the existing gastrostomy tube in and out of the stoma tract lubricating the stoma tract in the process.</p> <p>Note measurement marker on the gastrostomy tube, if still visible, closest to the abdomen.</p>	<p>To remove any potential debris around the stoma.</p> <p>To facilitate easier removal of the gastrostomy tube.</p> <p>To assess stoma tract direction and possible deviations.</p> <p>To assist in gauging depth to insert new gastrostomy tube.</p>	

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Checking Balloon Gastrostomy Tube Position			
No	Action	Rationale	Reference
18.	<p>Before removing the existing gastrostomy take a specimen of aspirate through the tube to check pH.</p> <ul style="list-style-type: none"> • Using the appropriate size enteral syringe aspirate a small amount of gastric secretion. • Test the pH of the gastric sections using CE marked pH indicator strips/paper. <p>If you are NOT able to obtain a pH consistent with gastric placement then review:</p> <ul style="list-style-type: none"> • The patient notes for previous pH readings during gastrostomy tube replacements, • The stoma site for the presence of bleeding, pain or leakage of feed/gastric contents. <p>If any of the above issues are present do not proceed to change the gastrostomy tube and seek specialist/medical advice.</p> <p>If the patient has been receiving feed via the gastrostomy tube without concern prior to this tube change consider:</p> <ul style="list-style-type: none"> • Has there been difficulty obtaining aspirate before? • Does the patient have a history of high pH? 	<p>To confirm gastric position of existing tube and provide a baseline for replacement pH.</p> <p>To prevent accidental misplacement i.e. fistula.</p>	Fletcher (2011)

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	<ul style="list-style-type: none"> Is the patient receiving PPIs? If yes, when was the last dose of PPI administered prior to tube change? <p>If there have been no concerns regarding the tube prior to this tube change and/or the patient has taken PPI and /or has had a recorded history of elevated pH with uncomplicated tube replacements then proceed to tube change.</p> <p>If there is any concern regarding aspirate or the planned gastrostomy tube change seek expert advice before undertaken the procedure.</p>		
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Removal of the existing balloon gastrostomy			
No	Action	Rationale	Reference
19.	<p>If you have obtained a pH consistent with gastric placement or failing this, following assessment have decided that it is safe to undertake the procedure, proceed to remove the existing balloon gastrostomy tube.</p> <ul style="list-style-type: none"> • Use the empty luer slip syringe to deflate the balloon fully in the existing gastrostomy tube. • Once all fluid has been removed from the balloon disconnect the syringe from the balloon port of the gastrostomy and place it in your dirty area ie, not on your clean dressing pack. • Turning to the patient, place one gloved hand on their abdomen around the gastrostomy site to apply gentle counter traction to the skin. • With your other hand gently withdraw the existing gastrostomy tube out of the abdomen. <p>CAUTION: The NPSA (2010) reported incidences of trauma resulting from balloon gastrostomy removals. Although this risk is small and is normally associated with the removal of a balloon gastrostomy tube with the balloon or flange inflated, it is important to be aware of the need to robustly check the position of a new BGT and not use it if there is any concern.</p>	<p>To prepare for replacement.</p> <p>Some resistance may be felt as the balloon casing can harden over time and not deflate completely to sit flush to the tube shaft.</p>	NPSA (2010)

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	Following insertion check pH of gastric aspirate through new balloon gastrostomy tube		
No	Action	Rationale	Reference
21.	<p>Using the appropriate size enteral syringe aspirate a small amount of gastric secretion through the new gastrostomy tube.</p> <p>Test the pH of the gastric aspirate using CE marked pH indicator strips/paper.</p> <p>Compare pH against the pH reading obtained through the previous gastrostomy tube.</p> <p>If pH reading is:</p> <ul style="list-style-type: none"> • Similar and below 5.5 commence feeding. • Similar and above 5.5 but that corresponds with pH readings recorded at other routine gastrostomy tube changes commence feeding. • Is above 5.5 and pH reading before tube change was not obtained or was below 5.5 wait 30 minutes then try again. <p>If there is any concern regarding aspirate or lack of seek expert advice before administering any fluid through the gastrostomy tube.</p>	<p>To confirm gastric placement.</p> <p>pH should be below 5.5 to confirm gastric position.</p> <p>To ensure patient safety.</p>	<p>Although aimed at NG tubes NPSA (2011) guidance for checking pH of gastric aspirate is applicable in this instance. Considered as best practice when confirming the gastric position of any enteral feeding tube. Fletcher (2011)</p>

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	If unable to collect aspirate		
No	Action	Rationale	Reference
22.	<p>If possible, move the patient on to their left hand side. Flush the gastrostomy tube with 5-10 mls of air. Aspirate again, or if clinically safe ask the patient to drink a fluid that can be easily identified and aspirate again. If aspirate obtained is under pH 5.5 or fluid drunk is obtained through the gastrostomy tube commence feeding.</p> <p>If still unsuccessful:</p> <ul style="list-style-type: none"> • Deflate the balloon, reposition the gastrostomy tube and aspirate again. <p>Do not administer any fluid if unable to obtain aspirate or the pH of aspirate obtained does not match previous pH recordings. If the patient is comfortable leave the BGT in situ and discuss with specialist nurse, GP or doctor.</p> <p>If position is a concern for any reason, confirmation of placement should be undertaken by contrast studies in an x-ray department.</p>	To confirm gastric placement.	Fletcher (2011)

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Securing the new balloon gastrostomy tube			
No	Action	Rationale	Reference
23.	<p>Clean the stoma site with gauze and saline or soap and water as per local policy.</p> <p>Remove any excess lubrication and discharged body fluids.</p> <p>Withdraw the gastrostomy tube gently until the balloon rests against the gastric mucosa.</p> <p>Secure the new gastrostomy tube externally by sliding the external fixator/bolster along the length of the tube so it sits to 2- 3mm from the abdomen.</p> <p>Ask the patient to sit upright and adjust fixation plate/bolster if necessary to ensure comfort.</p> <p>If a clamp is included as part of the gastrostomy kit, attach it onto the shaft of the gastrostomy tube.</p> <p>Open the feeding end of the gastrostomy tube and flush tube with water using a 60ml enteral syringe and water as per local guidelines.</p>	<p>To ensure stoma site is clean and dry.</p> <p>To prevent excess tube movement and ensure patient comfort.</p> <p>To ensure the tube is neither too tight nor too loose.</p> <p>To prevent gastric leakage during daily use.</p> <p>To clear tube of any debris.</p>	<p>DH (2009b)</p> <p>As per manufacturer's guidance</p> <p>Ojo (2011)</p>

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	On completion of the flush close feeding end and release clamp.	To prevent the backflow of feed, water, medication and gastric aspirate if the tube is not capped.	
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No	Action	Rationale	Reference
24.	All clinical waste should be disposed of as per local policy. For patients in their own homes reusable enteral syringes and extension sets (if used) should be thoroughly cleaned and stored as per manufacturers' instructions.	To prevent cross infection	DH (2009b) DH (2013)



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The NNNG recognises that practice will vary according to individual risk assessments and local policy. However this good practice statement has been published in accordance with available evidence at the time of publication.

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