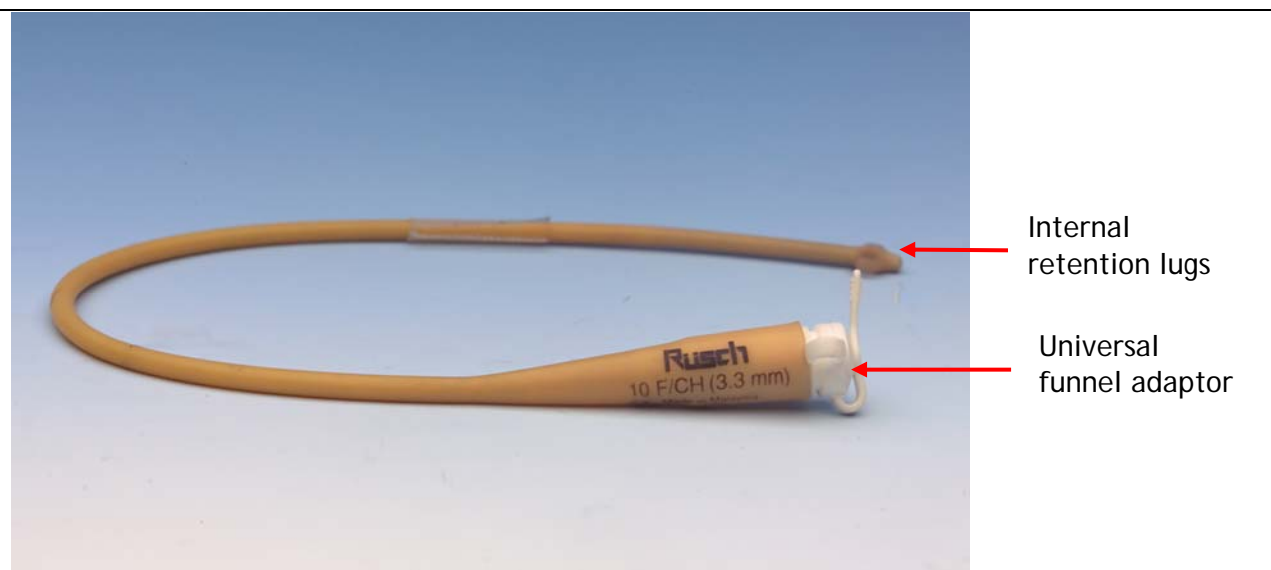


## Appendix 1: Types of Gastrostomy Devices

### Malecot

Latex catheter type tube, (See [Latex Allergy Policy](#) and [Procedure Guideline](#)) often used when an open or surgical gastrostomy or laparoscopic gastrostomy is formed, whilst having surgery for gastro-oesophageal reflux (Nissen's Fundoplication). This is a temporary device that is usually removed after six weeks, once the wound has healed, and replaced with a low profile balloon device ([button](#)), or a [balloon gastrostomy tube](#).

Figure 1: Malecot Tube (GOSH©2007)

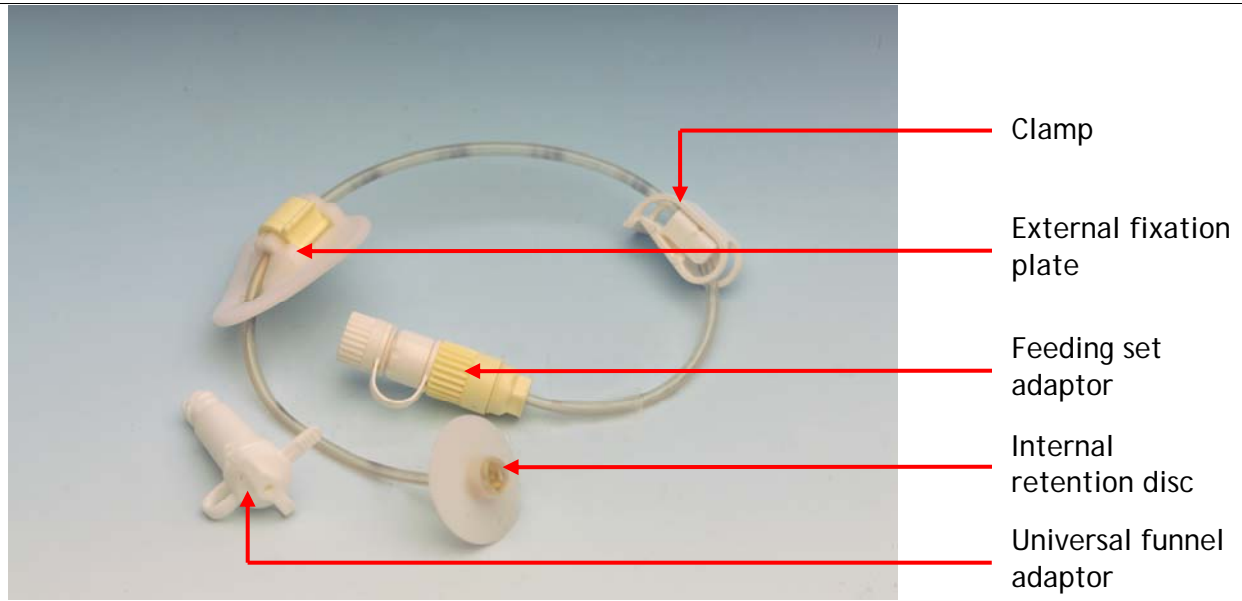


### Percutaneous Endoscopic Gastrostomy (PEG)

This is often the device of choice. It is inexpensive and can remain in place for eighteen months to two years. The children requiring a PEG have often had naso-gastric feeding for some time, and may require long-term nutritional support from enteral feeds. This device should not be used in children with known gastro-oesophageal reflux as this procedure may exacerbate the problem. If the patient still requires enteral feeds when the device needs to be renewed, the child and/or parents have a choice of whether to have a replacement PEG or have a low profile balloon device instead.

The PEG consists of an internal retention disc, external tube, integral clamp, external fixation plate with clamp, and luer lock adaptor. The most common size to be used is 9CH, but occasionally size 15CH is used. To access the tube for flushing and administering medicines, a universal funnel adaptor or other suitable adaptor is required. Many companies publish a free booklet with details of how to care for the PEG, and provide the ordering information for spare parts. The feed sets can be attached directly onto the PEG luer lock adaptor. This provides a secure connection to the feed set, and should avoid the feed set coming apart during administration of feeds.

Figure 2: Percutaneous Endoscopic Gastrostomy (PEG) (GOSH©2007)



### Low Profile Balloon Gastrostomy (Button)

These are popular with parents and older children as they are much more discreet devices from a body image perspective. They are simple to use, and parents/carers often take on the responsibility for changing the device when required. It is important to be aware that each manufacturer uses different designs of access ports and therefore the appropriate extension set for each make of device must be used.

Button devices are used in well-established gastrostomy stomas. For example six weeks after an open gastrostomy has been formed (usually in association with surgery for severe reflux i.e. Nissen's fundoplication). The Malecot is removed and a button or gastrostomy tube inserted. More often it is the second device in children requiring long term feeding, who have had a percutaneous endoscopic gastrostomy (PEG) for some time. As the time for replacing the PEG approaches the parent/carer(s) and, if appropriate, the child will have a choice of which device they would like as a replacement.

There is a wide range of 'button' devices on the market; one of the main differences in these ranges is:

#### Obturated Devices:

These usually have a mushroom shaped enlarged tip, which must be stretched by an introducer to allow insertion. The mushroom tip acts as the internal retention device. Manufacturers provide a specially designed introducer for their product. These devices should only be inserted by a doctor or nurse who has had appropriate training.

#### Non-Obturated Devices:

These have a balloon tip which acts as the internal retention device. Once inserted, the balloon is filled with sterile water to inflate, thus preventing the tube from being dislodged. It is essential to get the size of the device correct at the time of insertion to prevent leakage from around the balloon. This can happen if the shaft is too long. Conversely, if the shaft is too short, causing pressure on the skin, there is a risk of the child developing a pressure ulcer.

All buttons have a range of extension sets and accessories and come in a range of diameter

sizes from 12Fr to 24Fr, and shaft length from 1.7cms to 4.4cms. It is important to use a measuring device to ascertain the correct length of button for each patient. The device needs to fit without being too tight which could lead to skin breakdown through pressure, or too loose which would lead to stomach contents leaking onto the skin causing excoriation. Manufacturers usually supply a single-use measuring device for this purpose.

A range of extension sets is available and there is also a medication set for the administration of oral drugs.

Buttons are usually made of silicone, and have an external stabiliser, to prevent the device from migrating into the tract. There are two ports. The side port is the balloon valve and is for balloon inflation only, and the central port is for connecting the appropriate extension set to allow the feeding set to be connected. The extension sets have a locking mechanism that prevents the set from being dislodged from the button. There is also an anti-reflux valve, which opens only when the extension set is attached, and prevents gastric contents from flowing back from the access port.

If the button is a replacement device PEG, the first fitting will be under general anaesthetic (GA), at the time of removal of the PEG. The PEG is usually a size 9CH, and the first size of mini-button is a 12FR; therefore the stoma will need minor stretching to accommodate the new button. Subsequent button changes can take place in the home, often by the carer or community paediatric nurse, or at a hospital outpatient appointment.

These devices last for approximately nine months to one year.

**Figure 3: Low Profile Balloon Gastrostomy (Button, Non-Obturated)**  
(GOSH©2007)

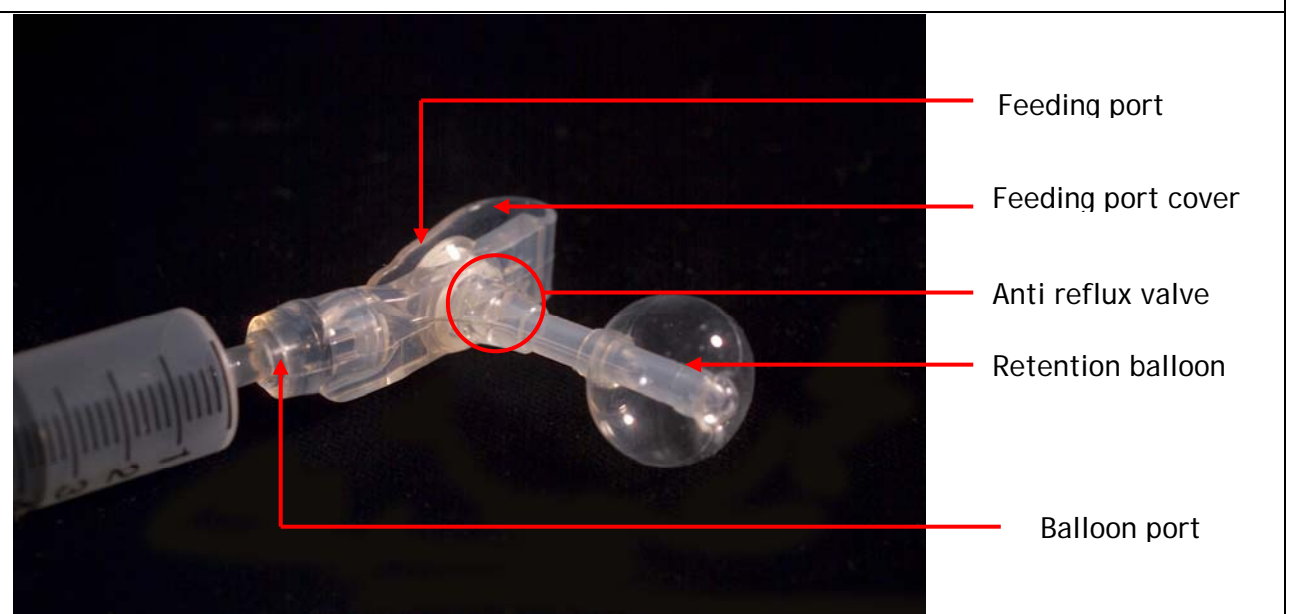
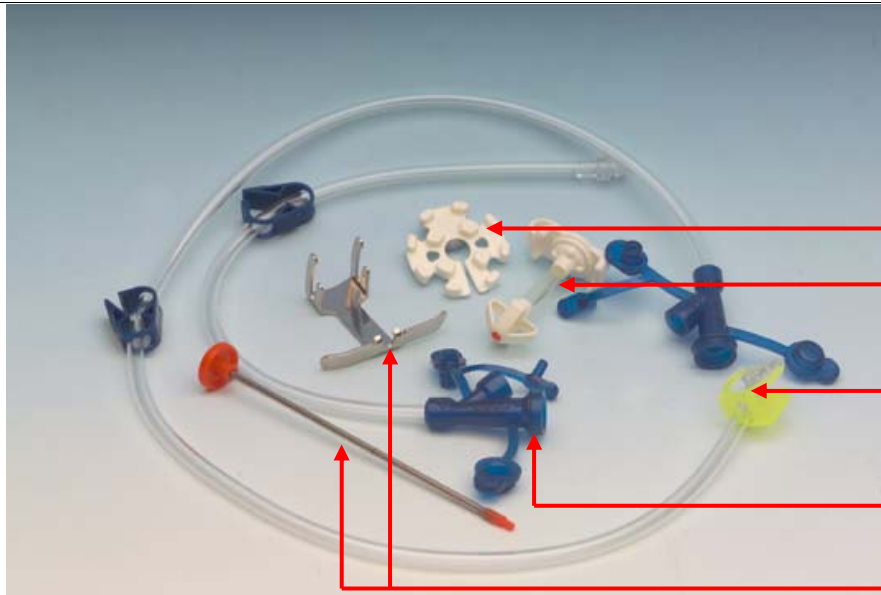


Figure 4: Low Profile Balloon Gastrostomy (Button, Obturated) (GOSH©2007)



Spacer

Entristar®  
button

Overnight feeding  
extension set

Bolus feeding  
extension set

Obturator

### Balloon Gastrostomy Tube

These tubes are useful for short-term use; they last up to three months. Balloon gastrostomy tubes are simple devices, with no need for extension sets, and there is a large range of them on the market.

Figure 5: Balloon Gastrostomy Tube (GOSH©2007)



Retention Balloon

External fixation  
plate

Balloon port

Feeding port

Feeding port cover

### **Percutaneous Endoscopic Gastrostomy with Jejunal Tube (PEG-J) (GOSH©2007)**

The PEG-J device is useful for children who, for a variety of reasons cannot tolerate gastrostomy feeds, or are in danger of aspiration. The PEG-J is made up of a 15Ch PEG with a transgastric jejunal tube. The jejunal tube is fed through the PEG tube. The external appearance therefore is of one tube exiting the stoma. There is a Y-connector providing both gastric and jejunal access.

The gastric port is useful for administration of medicines and for decompression of the stomach. The jejunal port is for administration of feeds. The feeds via jejunal tubes should be continuous, e.g. overnight, and must never be given as bolus feeds due to the risk of 'dumping' syndrome.

Feeding by this route is not without difficulties, however. The stomach, which usually acts as a reservoir regulating the rate at which feed enters the jejunum, is bypassed and this can cause the child considerable discomfort. Digestion usually begins in the stomach so hydrolysed feeds may need to be given. The stomach's natural defences are also by-passed so there is increased risk of gastro-intestinal infection.