



# Complex Child E-Magazine

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## All About G Tubes by Susan Agrawal

Children with special needs often have feeding problems, difficulty gaining weight, or require special diets. For these children, a G tube or Gastrostomy tube or button is a necessary device to provide adequate nutrition or medication. In this article, we will provide basic information about G tubes, their use, and some tips and tricks to help make tube feeding easier.

### **What is a G tube?**

A G tube or Gastrostomy tube is a small tube or button placed directly into the stomach through the abdominal wall. It typically has an interior portion inside the stomach that stays in place with a balloon or bolster, as well as an exterior part that is either a long narrow tube or a small “button” with a detachable long tube, called an extension set.

### **Why do children have G tubes?**

The most common reason children have G tubes is due to an inability to gain weight or feed appropriately. Most children with G tubes have long term needs, typically greater than three months in duration, for nutritional support, special diets, or medications. Some children may have gastrointestinal problems that require tube feeding to gain weight, while others may have mechanical difficulties with swallowing or another medical condition that necessitates tube feeding.

### **How are G tubes placed?**

G tubes may be placed in a variety of ways depending on the hospital and the surgeon’s preference. At many hospitals, G tubes are placed endoscopically, using a camera that is threaded down the throat and into the stomach. This is commonly called a PEG tube, which stands for Percutaneous Endoscopic Gastrostomy. The scope is used to create a hole and tract through the stomach and abdominal wall and a tube or button is placed in the hole, called a stoma. This procedure may be performed by a Gastroenterologist, an Interventional Radiologist, or a Surgeon.

G tubes may also be placed surgically, using either an open procedure or a laparoscopic technique. Both procedures are performed by a surgeon, who uses small openings or an incision to create a stoma and tract in the abdomen. A long tube or button is placed in the tract.

In both methods of placement, the stomach is usually secured to the abdominal wall, slightly altering the angle of the stomach.

Children usually need to remain in the hospital for 24 to 48 hours after the tube is placed. After the procedure, the tube will be left to drain until feedings are started. Feedings usually begin with a pediatric electrolyte solution only, and are eventually changed over to formula.

The procedure is painful for most children. Expect your child to need narcotic pain relief for at least the first 12 hours and Tylenol or Motrin for a week or so. Most children recover within about two weeks and can return to their usual activities.

At first, children may need to be on continuous feeds around the clock. Some children may be able to transition to bolus feeds or “meals” within a week or two of placement.

### **What type of tube or button is best for initial placement?**

Different doctors and surgeons have different preferences when it comes to the initial placement. Many physicians are now placing skin-level buttons with detachable extension sets during surgery. Some facilities still prefer to place long tubes initially, replacing them with a skin-level button six to twelve weeks after surgery.

The advantage of starting with a skin-level button is that these buttons are typically much easier to use, more convenient, and more discrete. Some children, however, may experience greater irritation of the tract with a button since the buttons tend not to be as secure as a long tube. The surgeon may recommend using a securement device or taping the extension to prevent tugging on the tract while it heals up.

Long tubes are much easier to secure and may prevent irritation of the tract. On the other hand, they can be cumbersome and difficult to use, and some of the securement devices they include may promote moisture and irritation of the skin.

It is best to discuss the type of initial tube with your child’s physician to determine which style may be best for your child.

### **What is Granulation Tissue?**

Granulation tissue is a common problem with G tubes typically caused by irritation or moisture at the stoma site. Pink or reddish tissue grows out of the stoma in “blobs” that

may bleed. A slight tannish, odorless discharge may also occur. The tissue may be painful for some children. It is very common with new G tube sites and typically can be treated easily.

First line treatment is usually a steroid cream such as Triamcinolone, which comes in a variety of strengths. It may take multiple applications daily for several weeks to eliminate all tissue growth. In some cases, you may need a stronger version of the medicine to see effects. Large areas of granulation tissue may be burned off using silver nitrate sticks. Make sure to apply a barrier cream such as Vaseline to the surrounding skin to prevent burning the healthy skin.

In extreme cases, the tissue may need to be removed surgically or treated by an ostomy nurse.

Prevention is very important in treating and eliminating Granulation tissue. The site or stoma should remain dry and open to the air as much as possible. It may take as long as a month for a site to completely dry out and heal, so do not be discouraged if the stoma continues to have discharge and tissue growth for awhile. If a dressing is needed to protect the skin, make sure to choose a type of dressing that wicks away moisture and keeps the site as dry as possible.

Finally, keeping the button or tube secured will help dramatically to reduce irritation of the stoma. See the following section on securing the tube.

### **How do you secure a G tube?**

In general, new G tubes should be secured in some way to prevent irritation of the tract and promote healing. Some physicians use a securement device, such as a Hollister vertical drain holder. Others recommend taping the button or securing the tube or extension with a locking device such as the Bone or a StatLock.

Once the tract has healed, it may not be necessary to secure the tube or extension set. Some children, especially active children or those who pull on the tube, may need to have the tube secured at all times. Some families use clothing, such as onesies for infants and toddlers or overalls for older children, to prevent access to the tube and keep it secured. Another option is to use a piece of mesh netting around the belly to hold the tube in place. An Ace-type bandage or Coban wrap may serve the same purpose.

### **What are bolus feeds and continuous feeds?**

Children with G tubes may be fed continuously around the clock, called continuous feeds, or in “meals” called boluses. Some children may use a combination of both techniques, with bolus feeds during the day and continuous feeds at night.

Bolus feeds may be given using a syringe, gravity bag or burette, or by pump. To give a bolus feed by gravity, remove the plunger from a large syringe and attach the syringe to the tube or extension set. Pour formula into the tube and allow it to flow into the stomach. The rate may be changed by raising or lowering the height of the syringe. The same technique may be used with gravity bags or burettes, though these sometimes have a roller clamp that can be opened or closed to alter the rate. For children who are more active or require slower bolus feeds, a feeding pump may be used to administer the feeding at a set rate.

Continuous feeds are given using a feeding pump running at a set rate. In general, it is best to get the smallest feeding pump possible, as well as the smallest backpack possible. This will allow your child to be portable and play and interact with his or her peers. Currently, the Zevex Infinity pump is the smallest pump available on the market, with the Kangaroo Joey a close second. Both pumps have backpacks available, including a tiny toddler-size for the Zevex pump.

The advantage of bolus feeds is that children do not need to be hooked up to a pump or backpack all of the time. Some children, however, may not be able to tolerate bolus feeds and require continuous feeding to meet their caloric needs. With newer pumps and tiny backpacks, even continuous feeding has become manageable.

### **What do I do if the tube falls out?**

The first thing you should do is place something in the stoma or tract to keep it open. Depending on your child's original tube or button, this may be a foley catheter (a small tube with a balloon on the end), an NG tube, a replacement tube, or a button. Some children's sites close up very rapidly, so it is important to place something in the tract to keep it open until a more permanent solution can be found. Even a button with a broken, uninflated balloon taped down will work.

If the tube was placed within the past two months, it is probably best for you to take your child to the doctor or hospital. Most doctors prefer to confirm that the tube or button is still in the tract by Xray. Once the tract has healed and is well-established, this is not necessary.

If your child has a tube or button with a bolster or mushroom on the end, usually called a non-balloon button, you will need to go to the doctor or hospital to replace the tube. These tubes cannot be replaced at home in most circumstances.

If your child has a balloon button or long tube, this can be replaced at home. Most doctors prefer to walk a parent through the procedure the first time. Once you have been trained, simply replace the button or tube according to your doctor's instructions. This typically means lubricating the tube, inserting it into the stoma, and inflating the balloon with 3-7ml of water. It is a very simple procedure and usually painless for your child.

If you have difficulty getting a balloon button back in, you might try placing a Qtip or toothpick inside the feeding port of the tube. This trick makes the balloon portion of the tube stiffer and can help get the tube in a smaller opening. If this does not work, try placing a smaller tube if available, such as a narrower NG tube or foley catheter.

If you cannot get the tube in at all or the tube site has closed up, you will need to go to the emergency room. They will attempt to dilate the stoma using progressively larger tubes. If the stoma is completely closed, surgery may be required.

Please note that many community hospitals are not used to feeding tubes or the procedures required to replace them. Make sure that something is placed in the stoma to keep it open while you are waiting to be seen. There have been too many children who ended up needing painful dilation of their stomas simply because a community ER was not proactive about placing something in the stoma to hold it open during wait time.

### **What can be fed through a G tube?**

The simple answer is anything that is smooth enough to go down the tube. This includes formula, breastmilk, water, juice, and pureed or blended real foods. If you choose to feed real food down the tube, make sure to blend it thoroughly and strain it to make sure any lumps are removed.

Most medications can also be pushed through the G tube. Make sure to flush with water after sugary medications. Certain time-release medications that come in bead form may not go through the tube. You may need to have them compounded into a suspension form by your pharmacy.

### **How do I unclog a G tube?**

First, make sure the clog is in the tube itself and not the extension set. Some techniques you might try include flushing the tube with a carbonated beverage such as Coke, flushing with hot water, and using the pressure of a small syringe (3-5ml) to push and pull on the tube to remove the clog. Your doctor may also help clear the tube using a commercial product that pushes clogs through the tube or prescribing a pancreatic enzyme that literally “eats” through the clog.

If your child has a button tube or balloon, you may need to remove the tube and try to flush the clog out that way. Sometimes the tube simply must be replaced.

### **How frequently should a G tube be replaced?**

This depends on the type of tube or button. The general recommendation is every three to six months for most types of tubes. The tube may need to be changed sooner if it is leaking or the balloon breaks. Some tubes with bolsters on the end may last much longer.

It is normal for the tubes to become discolored or even black due to medications and stomach acid. This is not a reason to change the tube unless you can visibly identify mold growing on the inside.

### **How do I stop the tube from leaking?**

First, identify the source of the leakage. If the tube is leaking from the feeding port, often called the anti-reflux valve on a button, this is simply a nuisance problem. Most valves break rather quickly, sometimes within days. Simply place your finger over the opening when connecting or disconnecting.

If formula is leaking out from around the button or tube, you may need a different size tube. Try adding some extra water to a balloon button or tube. Ask your doctor to remeasure the stoma to make sure the tube is properly sized.

Some children have ongoing problems with leakage that are difficult to solve. Consult your doctor in this case. He or she may have techniques to help the problem, including briefly removing the button each day to help tighten up the stoma or addressing issues of bloating and constipation.

### **How do I prevent the tube from getting disconnected from the feeding pump?**

All tube feeders will eventually “feed the bed” or accidentally get disconnected from the feeding pump. In some cases, the tubing from the pump disconnects from the extension set or feeding tube. In other cases, the ports on the tube or extension set pop open.

There are several easy solutions to this problem. One is to use an AMT clamp, a device that holds together the extension set or feeding tube and the feeding pump tubing. Another is to use an extension set without a medication port, since medication ports have a bad habit of popping open due to stomach pressure or manipulation of the tube. Finally, duct tape always works well.

### **What happens when my child no longer needs the tube anymore?**

Many children eventually are able to have their tubes removed. Most doctors prefer to see a child go through a winter and a serious cold or flu without using the tube before consenting to removal.

When a child is ready to have the tube removed, it can simply be taken out. In many cases, the stoma will close up within a day or two, leaving just a small scar. For children who have had their tubes in place for a long period of time, a stitch or two may be needed to close up the stoma.