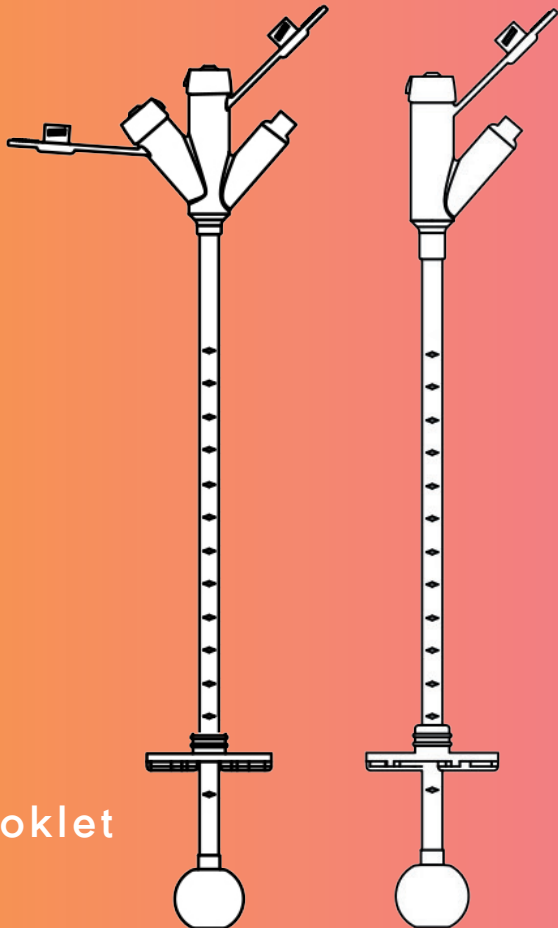


# AVANOS

MIC\* GASTROSTOMY TUBE

MIC\* BOLUS GASTROSTOMY TUBE

with ENFit® Connectors



Patient Booklet

# MIC\* G-TUBE, MIC\* BOLUS G-TUBE PATIENT BOOKLET

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# YOUR AVANOS\* MIC\* GASTROSTOMY TUBE INFORMATION

Hospital - Unit: \_\_\_\_\_

Nurse: \_\_\_\_\_

Dietitian: \_\_\_\_\_

General Practitioner: \_\_\_\_\_

Gastrostomy type:  MIC\* G-Tube Fr size: \_\_\_\_\_

MIC\* Bolus G-Tube

Date of insertion: \_\_\_\_\_

Cm marking at skin level: \_\_\_\_\_ cm

Balloon fill volume: \_\_\_\_\_

Replacement date: \_\_\_\_\_

Name and type of tube feed: \_\_\_\_\_

Amount of feed: \_\_\_\_\_ ml

Start and stop times: \_\_\_\_\_

Amount of each feeding: \_\_\_\_\_

Amount of water: \_\_\_\_\_ ml

Amount of water for flushing: \_\_\_\_\_ ml before and after every feeding

Pump setting or flow rate: \_\_\_\_\_

Blenderised table food: \_\_\_\_\_

Follow the doctor's instructions

Flush with: \_\_\_\_\_ ml water before and after every feeding

# INTRODUCTION

**This booklet aims to provide you with basic information about your AVANOS\* MIC\* Gastrostomy tube and to answer some commonly asked questions.**

If you have any further questions after reading the booklet then contact your nurse, dietitian, Health Care Professional (HCP) or doctor who will be pleased to help you.

There are inherent risks in all medical devices. Please refer to the product labeling for indications, cautions, warnings and contra-indications.

**Please keep this booklet in a safe place for future reference.**

# WHAT IS YOUR TUBE FOR?

If you can't eat or can't eat enough for more than 4 to 6 weeks, your doctor might decide to place a balloon gastrostomy tube (or G-tube) through an opening in your abdomen into your stomach called a stoma.

This G-tube is fitted to provide you with either all of your nutrition and fluid needs or to supplement your nutrition and fluid.

The AVANOS\* MIC\* G-Tube is a special feeding tube which connects the inside of your stomach to the outside to enable feeding to take place directly into your stomach.

More information on the placement procedure can be provided by your medical professional.

## How long will the Avanos\* MIC\* G-Tube last?

The AVANOS\* balloon gastrostomy tubes are made from soft medical grade silicone which is compatible with the human body. The exact life time of the tube does vary from patient to patient.

The tube is designed to function properly for several months of normal use (see instructions for use).

While we recommend your tube be considered for change every few months to maintain best results, hygiene and stoma health, your HCP should be consulted about when your tube is to be changed.

With proper training from your HCP, and if your medical condition allows, your HCP may instruct you on how to change the tube.

It's recommended to store a spare replacement tube of the same French size at home in case of early dislodgment of the placed G-tube.

## What will I receive through my tube?

Your doctor and dietitian will prescribe you a feeding regime, the amount of water / liquid medicines to be administered through this tube.

The feed consists either of blenderised table food or ready-to-hang tube feeds.

An adequate nutrition consists of the right type and amount of feeding and the right administration schedule.

## What to put down your G-tube?

- Your tube feed as prescribed by your dietitian
- Water
- Medicines in liquid form only, as prescribed or recommended by your medical professional

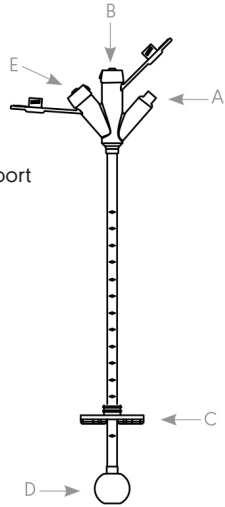
Don't put anything down your tube other than your feed, water or medicines in liquid form. If you do, you may risk blocking the tube and if the blockage cannot be cleared, another tube may have to be put in.

# ABOUT YOUR AVANOS\* MIC\* G-TUBE

There are 2 types of AVANOS\* MIC\* gastrostomy tubes. See on page 3 of this booklet what type was placed in your stomach.

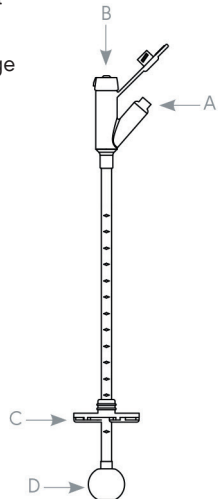
## MIC\* Gastrostomy Tube (Fig. 1)

- A: Balloon inflation port
- B: ENFit® feeding port
- C: External disc or flange
- D: Internal silicone retention balloon
- E: ENFit® medication port



## MIC\* Bolus Gastrostomy Tube (Fig. 2)

- A: Balloon inflation port
- B: ENFit® feeding port
- C: External disc or flange
- D: Internal silicone retention balloon



- The AVANOS\* MIC\* Gastrostomy Tube is held in place by an internal retention balloon (D) This balloon was filled with sterile or distilled water when first placed in your stomach. The water was injected through the balloon inflation port (A) The maximum fill volume of the balloon is printed on the balloon inflation port. The balloon rests against the inside of your stomach wall.
  - The tube is kept in its position on the outside with an external retention disc or flange (C) that rests approx 2-3mm above your skin. The combination of the internal retention balloon and the external disc or flange holds the tube in place.
  - The shaft of the G-tube has centimetre markings, allowing you to easily check the correct position of the tube inside the stomach (see page 7).
  - At the end of the MIC\* feeding tube is an ENFit® feeding connector (B) which will connect to
    - ENFit® feeding set to deliver formula feeds
    - ENFit® syringe to deliver water flushes and medications
- The MIC\* Gastrostomy tube has a medication port (E) to make it easier to administer medications into the stomach.

## Recommended balloon fill volume and balloon capacity

AVANOS MIC* G Tube Size	AVANOS MIC* B Tube Size	Balloon Fill Volume	Maximum Balloon Capacity
12 LV	12LV	3-5ml	7ml
14LV	14LV	3-5ml	7ml
16LV	16LV	3-5ml	7ml
18	18	7-10ml	15ml
20	20	7-10ml	15ml
22	22	7-10ml	15ml
24	24	7-10ml	15ml
26	-	7-10ml	15ml
28	-	7-10ml	15ml
30	-	7-10ml	15ml

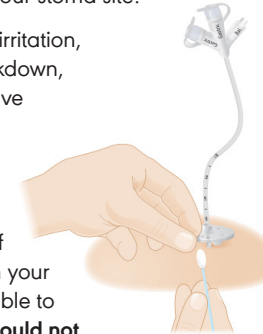
# DAILY CARE

- Always wash your hands with soap and water and dry thoroughly before handling the tube.



- Clean your feeding tube daily. Keep the skin around the tube (stoma) clean and dry using:
    - mild soap and water
    - cotton-tip applicators,
    - a soft, lint-free cloth.
- Keep the ENFit® feeding port clean by using a swab, soft cloth or an interdental brush.
- Check carefully for any signs of the following around your stoma site:

leakage, swelling, irritation, redness, skin breakdown, soreness or excessive (more than 10mm) movement of the tube in or out of your stomach. If you notice any of these things inform your HCP, who will be able to advise you. **You should not experience any pain while feeding.**



- Clean the skin around the stoma site with mild soap and warm water. You should start next to the stoma site and work outwards using circular movements. The tube and silicone external disc or flange may be rotated and slightly bent to allow you to reach all areas of skin around the tube.
- When you have finished, gently dry the whole area thoroughly.
- Monitor the position of your G-tube by noting the centimetre mark where the external disc or flange sits. Your tube should not move more than 2-3mm in or out.
- If directed to, monitor the pH of your gastric contents each time that:

- a new pack of tube feeds is connected,
- a bolus feed is administered,
- medication is administered and
- at least once during every shift if you have supported care.

Follow the pH measurement technique as described on the instructions for use (see p9).

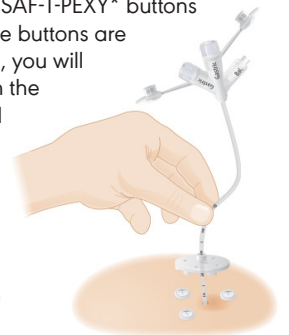
When one of the two techniques indicates that the tube has moved, immediately stop any administration of feed or medication and contact the medical doctor.

- Oral Hygiene is especially important if you receive all your food via your G-tube, as dental plaque can build up very quickly.

Clean your teeth at least daily. Artificial saliva or a mouth wash may help if your mouth is dry.

# WEEKLY ROUTINE

- Until the stoma site is fully healed, do not immerse the site in water. Have showers not baths. Your HCP will advise you when you may have a bath again or go swimming.
- In the event your G-tube was placed with the AVANOS\* MIC\* Introducer Kit: While the 3 white gastropexy buttons, SAF-T-PEXY\* buttons or surgical sutures are in place, the stoma should be considered a surgical wound and should be disinfected with a non-colourant disinfectant. Follow the hospital guidelines. Deep water bathing is not recommended while the SAF-T-PEXY\* buttons are in place. Usually the gastropexy sutures will be resorbed after 2-3 weeks and the SAF-T-PEXY\* buttons will fall off. Once the buttons are no longer attached, you will be allowed to wash the skin with water and soap and dry thoroughly.



Your HCP may advise of specific post procedural care they may wish to undertake so be guided by their instructions.

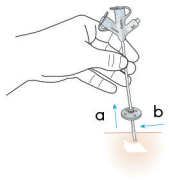
- When the stoma is completely healed, usually 2-4 weeks after placement, the integrity of the water filled balloon can be checked and the tube can be rotated in the stoma to prevent buried bumper.

It is recommended that the balloon volume is checked at least weekly.

Work as follows:

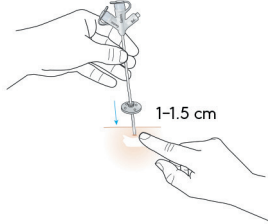
- Discontinue feeding.
- Slide the external disc or flange upwards and clean the skin and the tube using soap and water (Fig. 3a). Rinse the skin thoroughly and dry the skin. Read the centimeter marking at the skin level (Fig. 3b).

Fig. 3



- Push the tube 1 to 1.5 cm into the stoma (Fig. 4).

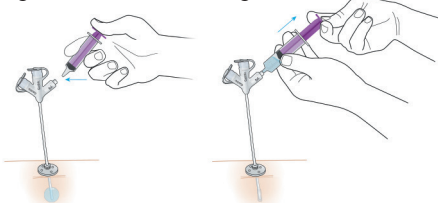
Fig. 4



- Attach a Luer slip syringe to the balloon inflation port (Fig. 5a) and gently pull on the plunger (the end of the syringe) to withdraw all the water from the balloon (Fig. 5b), while leaving the tube in place.

Fig. 5a

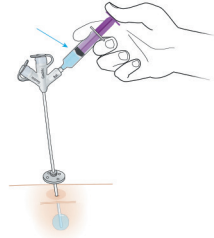
Fig. 5b



- Read the content of the syringe (Fig. 5c), while keeping the syringe connected. If there is less fluid than the amount originally prescribed (see in the beginning of this booklet), 'reinject' the liquid and further fill it up with sterile water, distilled water or cooled boiled water to reach the prescribed amount.

Sterile water may be appropriate where the quality of municipal water supplies is of concern.

Fig. 5c



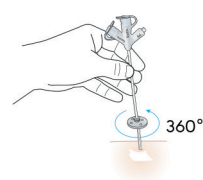
**Never fill the balloon with air, saline or glycerin!**

**Do not inflate the balloon with more than the volume printed on the balloon inflation port.**

**It is not uncommon for the water withdrawn from the balloon to be slightly discoloured.**

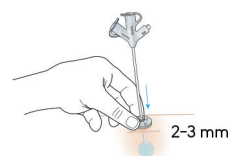
- Rotate the tube 360° (Fig. 6) and pull it gently back out of the stoma, until you feel resistance of the internal balloon against the stomach wall.

Fig. 6



- Dry the skin and tube thoroughly.
- Slide the external retention disc back so it sits comfortably on the skin. There should normally be 2-3 mm distance between the skin and the external retention device (Fig. 7).

Fig. 7



## BEFORE FEEDING BEGINS

### Check for proper tube position

Follow methods recommended by your HCP.

### Inserted tube length:

- Read the centimeter marking on the G-tube at the level of the skin.
- Compare this length with the length mentioned in the beginning of this booklet. Both numbers should be equal. If not, stop the administration of enteral feeding immediately and contact your HCP.

### Ph measurement:

(in the event you have been directed to monitor pH of your gastric contents)

- Attach an ENFit® syringe to the feeding port and pull back the end of the syringe (plunger) to aspirate stomach content (stomach contents should appear as formula or clear or yellow liquid).
- Disconnect the syringe from the G-tube and measure the pH of the aspirate with pH indicator paper. The pH should be lower or equal to 5.5.
- Reinject the aspirate back into the stomach, flush the tube with 10-20ml water and begin feeding. (A lower amount of water may be needed for premature/low birth weight babies, or volume sensitive patients. Consult your medical professional.)
- If the pH is higher than 5.5, stop the tube feeds administration immediately and contact your HCP.

**If you have tried both methods listed above and if you're not sure of the tube placement, DO NOT FEED using the tube.** Your HCP can use fluoroscopy to determine tube placement.

### Measure residual stomach contents:

"Residual" is the amount of gastric fluid and feed left in your stomach 4 hours after feeding. Your stomach may not always empty completely, so the amount of residual varies.

It may also depend on your activity or body position.

### Check for residual if:

- The formula backs up in the G-tube.
- You feel nauseated.

### To check the residual:

- Connect a large ENFit® syringe to the feeding port and pull the end of the syringe to aspirate or remove excess gas from the stomach.
- If liquid is also removed, carefully measure the amount of liquid in the syringe and place it in a cup. If the syringe is full and there appears to be more liquid, after the contents of the syringe are measured and emptied into a cup, reconnect the syringe and extract the remaining fluid, measure the amount and place it in a cup.

Replace the residual back into your stomach, since it contains important electrolytes and nutrients.

### To replace the residual:

- To replace the contents, slowly place the ENFit® syringe in the cup with the extracted stomach contents and pull the plunger to fill the syringe.
- Connect the syringe to the feeding port of the G-tube and slowly push the plunger to allow liquid to flow back into the stomach.

Check the residual again in 30 minutes and resume feeding if the amount is less than you obtained at the first check. If the gastric residual volume is still at a similar level, you should contact your HCP for assistance.

Your medical professional may instruct you to decompress (release air from the stomach) before / after feeding using e.g. FARRELL\* Valve Enteral Gastric Pressure Relief System.

## ADMINISTRATION OF TUBE FEEDS

- Connect the tube feeds to the feeding set.
- Purge air from feeding set by allowing tube feeds to run through it. When the feed reaches the end of the feeding set, close the roller clamp of the feeding set.
- Open the feeding port of the G-tube and connect the feeding set.
- Connect your enteral feeding set to the pump.
- Set your pump rate according to your dietitian's instructions.
- Start the pump and begin feeding.
- When your feeding is nearly finished, add any prescribed amount of additional water.
- After administering the tube feeds and water, disconnect your feeding set from your G-tube.
- Flush your G-tube with 20 ml water through the medication port (use the feeding port if there is no medication port available) using an ENFit® syringe. (A lower amount of water may be needed for premature/low birth weight babies, or volume sensitive patients. Consult your medical professional.)

**Always follow any specific instructions which have been given to you by the HCPs who are looking after you and remember these two points:**

- **DON'T lie flat during your feed or for about half an hour after you have finished your feed because doing so may make you feel sick.**
- **NEVER vary the type or amount of feed that has been prescribed for you without first speaking to your HCP for advice.**

## ADMINISTRATION OF MEDICATION

- Medication should be in liquid form when possible. If the liquid is thick, thin it with water so it doesn't clog the tube. Check with pharmacist to ensure proper dilution.
- If your medication is only available in a pill or capsule, ask your medical professional or pharmacist if it is one you can crush and mix with water. Not all pills and tablets can be taken this way.
- If crushing is an option for your medication, crush it into a fine powder and make sure it is well dispersed in the water. Most medications mix well with warm water but some do not.
- Never mix medication with tube feeds unless your medical professional tells you to do this.
- Contact your physician prior to administering any new medication through your tube.
- Always remember to flush your tube with water before, between and after medication administration. The amount that you flush will be determined by your HCP.

## FLUSHING YOUR TUBE

Flush your G-tube after each feeding or administration of medication. Regular flushing of your G-tube (every eight hours) will reduce the likelihood of blockage.

### To flush your tube:

- Using an ENFit® syringe, draw up 20ml of water. Sterile water may be appropriate where the quality of municipal water supplies is of concern.
- Switch off the enteral feeding pump and close the roller clamp of the feeding set. Open the cap of the medication port (if not available, use the feeding port) and connect the syringe containing the water. Press the end of the syringe (plunger) down gently and slowly until the syringe is empty.

Disconnect the syringe and close the cap of the medication port.

Avoid using acidic fluids (e.g. cranberry juice) and cola beverages to flush feeding tubes as the acidic quality when combined with formula proteins / medications may actually contribute to tube clogging.

## REPLACEMENT AND ACCIDENTAL REMOVAL

### Replacement of the G-tube:

- The AVANOS\* MIC\* G-tubes are designed to stay in place for a long time and under normal circumstances will not come out. The life span of the balloon on a G-Tube varies (usually between 1-8 months) and can be affected by several factors. These factors may include medications, volume of water used to inflate the balloon, gastric pH fluctuations, and tube care.

Replacement and removal of the G-tubes depends on the viability of the product / should be performed under medical instruction.

Find the replacement date for your tube in the beginning of this booklet.

### Accidental removal of the G-tube:

- If the G-tube is pulled out inadvertently, you must inform your HCP immediately, so a replacement gastrostomy tube can be put in as soon as possible to keep the stoma open.
- Use your replacement tube to prevent the stoma tract from closing but do not inflate the balloon. Tape tube securely to the skin and do not use the tube until position has been confirmed by your HCP or GP.
- The doctor or HCP might replace the tube by the same balloon gastrostomy tube or low-profile gastrostomy tube (e.g. MIC-KEY\* G-tube) of the same French size.
- Correct placement into the stomach should always be confirmed before using the tube for delivering feed, water or medications.

**Contact your HCP immediately for further advice in case of accidental removal.**

## PROBLEM SOLVING

### Stomach contents are leaking around the stoma site

- First, check for proper tube placement (see earlier).
- Measure residual stomach contents (see earlier). The stomach may be too full or contain gas. If the stomach contains too much residual (more than a few times), you may be getting too much formula at one time. If you are using the bolus feed, consider switching to continuous. If using a continuous feed, try decreasing the flow rate.
- Check the balloon volume and compare with what has been the previously recorded amount. If necessary, reinject the obtained amount and further tap it up until the volume prescribed in the beginning of this booklet.

If the balloon is completely empty or contains a totally different type of liquid (feed, medication) it is advised to fill the balloon with the prescribed volume of water and to check balloon contents after approx 5 minutes. If the content of the balloon is different than what was injected, the balloon is defective. A replacement of the tube is necessary. Contact your HCP.

- If patient has lost weight or gained weight, the tube will need to be checked as it may be too loose or too tight in the stoma. A tube that doesn't fit well can cause leakage of stomach contents or excessive tissue formation (granulation) around the stoma. If the tube is too tight, it will cause pressure areas and be painful.

### The feeding set becomes disconnected

- Stop the pump.
- Estimate the amount of tube feeds lost.
- Thoroughly wipe the feeding connector of the tube with soap and water, then rinse with clear water. They must be free of oil and formula build-up.
- Check for proper tube placement (see earlier) and flush the tube 10-20ml of water.
- Resume the feeding, replacing the estimated volume lost during the disconnection.

### The feeding tube becomes blocked

- Attach an ENFit® syringe, filled with 10-20ml warm water, to the feed port (A) of the G-tube.

- Gently pull back on, then depress the plunger to dislodge the clog.
- If the clog remains, repeat the previous step. Gentle suction alternating with syringe pressure will relieve most obstructions. If this fails, consult your medical professional.
- If your medical professional has given you different instructions for this procedure, such as the use of an enteral feeding tube declogging system like CLOG ZAPPER\*, follow those instructions.
- To prevent blockages, flush your feeding tube:
  - before and after each feeding
  - before, after and in-between medications
  - after checking for gastric residuals.
- Do not mix medication with tube feeds unless directed by a physician or pharmacist.

### Stoma and/or skin problems

- For stoma problems, immediately call your medical professional if:
  - the stoma is bleeding
  - you notice blood mixed with stomach content
  - the stoma is persistently red and sore, and/or the red area is larger than 2.5cm in diameter
  - the stoma emits an odor
  - the skin surrounding the stoma is swollen
  - there is pus around the stoma
  - you have a fever
  - you have consistent pain.
- Be sure to gently rotate the G-tube 180° during daily tube care to ensure proper air circulation (see "Weekly routine" page 7). Redness or soreness around the skin and stoma may be the result of an incorrectly sized tube (for example, if you have gained/lost weight) or gastric leakage. Clean and dry the area frequently.
- Skin problems such as granulation tissue may also occur. Granulation tissue is the result of the body's effort to repair the surgical incision. The tissue area may enlarge and require treatment. If it bleeds or a large amount of tissue builds up, contact your medical professional.

**IMPORTANT: If your tube fit is uncomfortable, please contact a medical professional.**

## CHILDREN'S SPECIAL CONCERNS

### Children have small stomachs

- As infants grow, they develop the capacity to hold larger amounts of tube feeds. Feedings usually begin with frequent small amounts of formula. Bolus feedings take on average 20-40 minutes. A gravity flow system or a pump regulates a slow steady flow and leaves you free to do other things. Be patient, and gradually increase the amount of formula given during the feeding.
- If your child's stomach is full, formula may leak around the stoma. Your child may also act colicky and vomit or burp up formula. If this happens, ask your medical professional if decompression or venting is appropriate.

### Children are growing

- Keep in mind that children with gastrostomies have the same basic growth and developmental needs as other children. That means their nutritional needs will be growing and checking their stoma length may be required for optimal fit.

### Children need to get enough water

- Because enteral feeding tube users are no different from the rest of us, hydration is important. If the weather is warm or your child has a fever, additional water may prevent dehydration. Ask your medical professional for guidelines.

### Children need to experience food

- Even though your child receives nourishment through a tube, being at the table during meals (if it's safe to do so) is still important. It gives your child the chance to experience food. Encourage your child to touch and taste, just like everyone else, even if he or she makes a mess around the high chair.

## TERMS YOU'LL NEED TO KNOW

### Bolus feeding:

Large amounts of formula delivered in a short period of time through a feeding set or syringe.

### Continuous feeding:

Small amounts of formula administered constantly throughout the day (or night) without interruption (often during 20-24 hours).

### Enteral feeding:

Liquid nourishment delivered by a tube inserted into the stomach or intestine.

### Feeding set (giving or pump set):

Tubing that connects the feeding container or pump to the feeding tube.

### Feeding tube:

Tube through which formula flows into the stomach or the intestine.

### Fistula:

The shaft that makes the connection between the stomach and the outside (the skin).

### French size:

Indication of the tube's outer diameter equal to Charrière.

### Gastrointestinal decompression:

The removal of gas or fluid from the stomach (also called "venting").

### Gastrostomy:

An opening (stoma) through the skin into the stomach.

### Granulation tissue:

Extra tissue formed on or around the surface of the stoma that will later form fibrous scar tissue.

### Gravity drip:

Formula or tube feeds flows into the stomach by gravity without the use of a feeding pump.

### Intermittent feeding:

Feeding smaller amounts of formula frequently during the day or night.

### Stoma:

Opening through which a feeding tube can enter the body.

### Stomach residual:

Contents of the last feeding and gastric juices remaining in the stomach just before the next feed is to be given.

# SOME AVANOS\* FEEDING TUBE DOs AND DON'Ts

## DO:

- ✓ Check the site every day. Tell your HCP at once if you notice any swelling, leakage, redness, soreness, pain or excessive movement of the tube in or out of your stomach.
- ✓ Clean and dry the stoma and surrounding tissue carefully each day.
- ✓ Check the position of the G-tube using pH paper each time a new pack of tube feeds is connected, a bolus feed is administered, medication is administered, and when there is any doubt if the tube is in the correct position.
- ✓ Flush the tube before and after medications, feeding and at least every 8 hours.
- ✓ Once the stoma tract is healed: Check weekly the balloon content and turn the tube on its axis as described in this booklet or instructed by your HCP.

## DON'T:

- ✗ Don't put solids down your tube.
- ✗ Don't reposition the tube yourself, unless your HCP has shown you how to.
- ✗ Don't have a bath or swim until your HCP lets you know it is okay to do so.
- ✗ Don't remove the external fixation device from the G-tube. If the external fixation device is uncomfortable, tell your HCP who will adjust it for you.

The enclosed guidelines are only recommendations for an appropriate care of the Avanos\* MIC\* G-Tubes. These should only be followed when no instructions are available from the medical professional or health care professional. The Avanos guidelines can under no circumstances overrule the local medical or nursing guidelines. The end responsibility for the treatment should remain with the placing doctor.

There are inherent risks in all medical devices. Please refer to the product labeling for Indications, Cautions, Warnings and Contraindications.



# AVANOS

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