

## Appendicostomy (Malone Procedure or MACE)

An appendicostomy (said like: a pen di KOSS tuh me), or Malone, can be done for children who need an enema every day to stay free from stool accidents. This lets the child give himself or herself the enema. An appendicostomy, or Malone procedure (MACE), is a surgery that makes a pathway from the belly button into the colon. Enema fluid will go through this pathway. With the Malone procedure, the enema can be given at the beginning of the colon (appendix), instead of being flushed up through the rectum. The flush is then given from the top down, rather than bottom up.

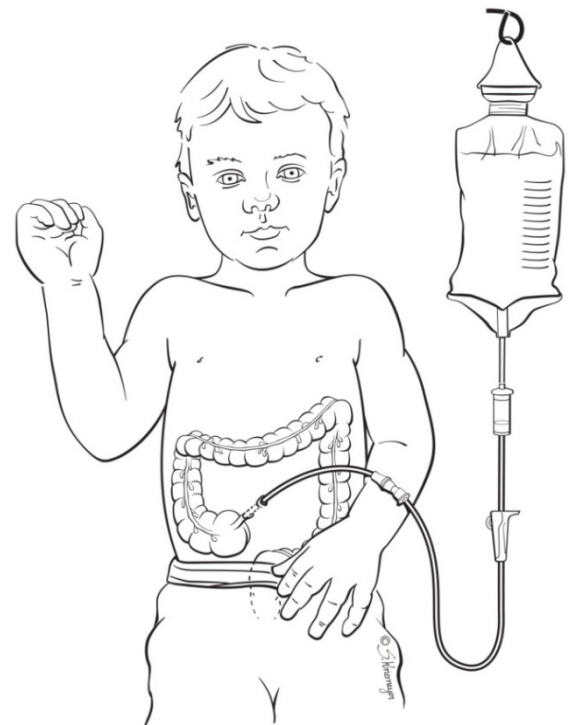
The surgeon connects the appendix to the belly button (umbilicus) or right corner of the belly (abdomen). A one-way valve is created inside your child's belly. This lets the enema tube (catheter) go in, but no stool or body fluids will be able to come out. The valve is hidden on the inside. No artificial device is used. The surgeon makes the valve with your child's natural tissues and skin. The Malone tube (catheter) can be inserted through this valve. The solution can be flushed through the new valve the same as a rectal enema (Picture 1).

### Before surgery

- Your child will not be able to eat or drink anything after midnight.
- The surgeon may ask that your child be given medicine on the day before surgery to clean stool out of the colon. This might be done at home, or in the hospital.

### Day of surgery

- **The day of the surgery**, your child will come to the hospital 2 hours before surgery time.
- Surgery takes about 1 hour and is done with a scope through a small cut (incision) in the child's belly.



**Picture 1** Getting an enema through the appendicostomy, or Malone.

## After surgery

- Your child will, most likely, stay in the hospital for a few days after surgery. This is to make sure there are no problems and gives you time to learn your child's flush routine.
- Once your child starts passing gas and stool after surgery, he or she can start drinking. When your child is drinking well, his or her diet will be advanced to regular solid food. Your child will stay in the hospital until he or she is eating regular food.
- Then, once your child is eating regular food, he or she will get the first flush in the hospital through the Malone catheter. Some children will need flushes once a day and others may need them twice a day.

## Care after surgery

- Your child may bathe, shower, and swim normally after going home from the hospital.
- One week after surgery, your child can do normal physical activities, like gym and sports.
- The doctor will insert a small tube during surgery that will stay in your child's belly button. The tube will go into the appendix. Enema fluid will be flushed through this tube. The tube will stay in place for one month, and then will be removed in the clinic.
- When the tube is removed, an ACE stopper will be put in its place. This stopper keeps the appendicostomy valve in the belly button open. The stopper is made of silicone.  
**Do not use it if your child has a silicone allergy.**
- At the clinic, the healthcare team will teach you how to insert the Malone catheter and give the enema at home.

## Flushing the appendicostomy

Before you leave the hospital, the healthcare team will make sure you know how to flush the Malone tube. They will teach you what to put in the flush solution. They will also teach you how many times a day to flush through the Malone.

## Enemas

Follow these steps when giving an enema through the appendicostomy:

### 1. Put the supplies in the bathroom:

- |  |  |
|--|--|
| ▪ Enema bag  | ▪ Timer  |
| ▪ Malone catheter                                      | ▪ Water-based lubricant  |
| ▪ Enema solution (as ordered by your child's provider) | ▪ Games, books, or other activities to help your child pass the time |

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## Enemas, continued

2. Wash your hands with soap and water.
3. Close the clamp on the enema bag.
4. Add prescribed enema fluid to the bag.
5. Remove air from the tubing by opening the clamp and letting the fluid run. Close the clamp.
6. Hang the bag on the shower curtain rod or a wall hook.
7. Seat your child on the toilet. Put the lubricant on the end of the Malone catheter. Insert the catheter into the belly button valve about 3 to 4 inches.
8. Open the clamp and let the solution run in over 5 to 10 minutes. If your child has cramps, slow down the flow by adjusting the clamp.
9. When all the liquid has gone in, close the clamp. Remove the catheter from the belly button.
10. Wait for the solution to work and your child to empty his or her bowel. This can take 30 to 60 minutes. Massaging the belly from right to left may help to empty the bowel faster.
11. Clean the enema bag well with soap and water. Let it air-dry before putting it away.

## Placing the ACE stopper

Follow these steps when placing the ACE stopper:

1. Clean and dry your child's skin with soap and warm water.
2. Put the water-based lubricant on the end of the ACE stopper so it will go in easier.
3. Gently insert the stopper until the disc of the stopper is flat against your child's belly.
4. You can keep the stopper in place by putting a Band-Aid® or tape over the top. Change the dressing every day to keep the site clean and free from irritation.
5. Call the nurse if your child's skin gets irritated or if you are not able to insert the ACE stopper.

## Important things to remember

- If your child has had his or her appendix removed, this surgery can still be done. The surgeon will create the valve from a piece of the colon. It will work just like a regular appendicostomy.
- Do not throw away the enema bag, tubing, or catheter. They can be used over and over again.
- Do not use solvent, such as alcohol or acetone, to clean the tube. Only use tap water.
- Enemas may be changed. This depends on your child's bowel response.

## **When to call the doctor**

Call your child's doctor if any of these things happens:

- Discomfort or pain around the belly button
- Skin irritation, like redness or drainage
- Fever over 101 degrees under the arm (axillary)
- Feeling sick to the stomach (nausea)
- Unable to put in the Malone catheter