C.S. Mott Children's Hospital
Colorectal Program

Antegrade Continence Enema Bowel Management Strategies

What is an ACE (Antegrade Continence Enema)?

The Antegrade Continence Enema (ACE) has been used for over a century in children who have difficulty either passing a bowel movement or who have chronic incontinence (stooling accidents). This procedure has many other names including a cecostomy tube or appendicostomy tube / procedure. It has also been called Malone Antegrade Continence Enema (MACE) - after the surgeon who popularized the method about 20 years ago.

Who Might Benefit from an ACE operation?

There are several groups of children who may benefit from an ACE-type procedure.

1. Children with severe fecal incontinence or (stooling accidents). This can occur if your child has imperforate anus or Hirschsprung disease.
2. Some children just have severe constipation that cannot be treated by any other method (such as enemas or laxatives).
3. Children with spinal cord problems, such as after a major trauma, where there is no anal control for stooling.

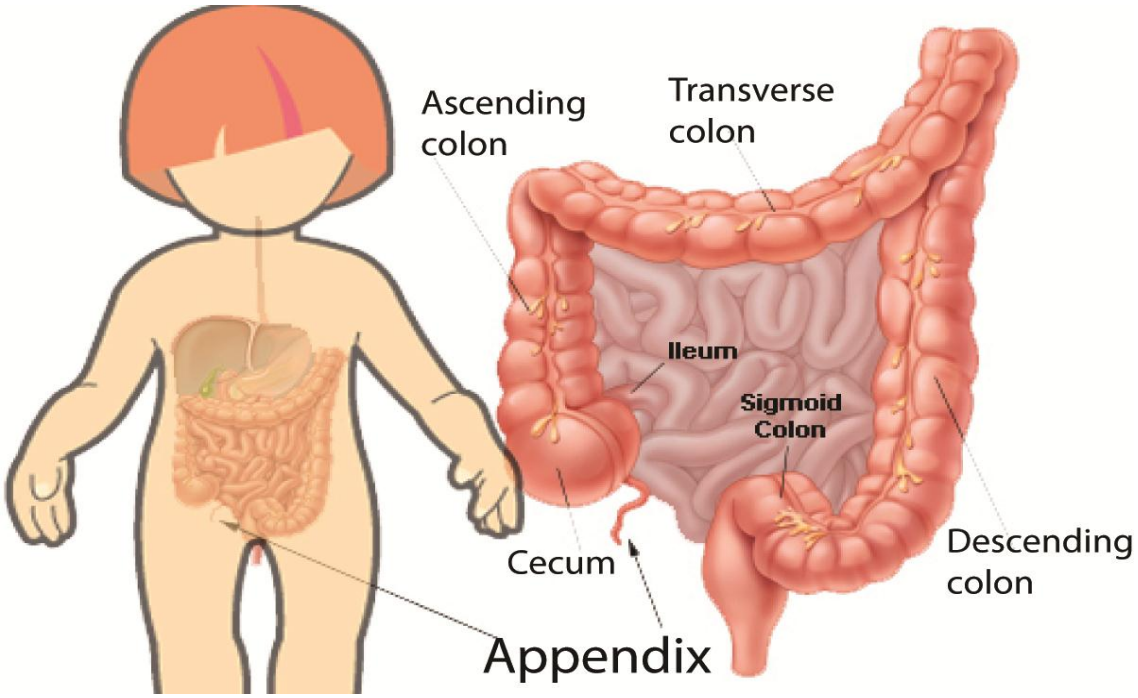
What are the advantages to an ACE operation?

Greater than 90% of children will improve after an ACE operation. While each child will take time to adapt to this procedure, parents and children will find that the number of accidents or soiling will decrease. This really helps children gain a great improvement in quality of life such as participation in after school activities or sleep overs. The procedure and principles behind it transfer to adult patients as well.

What is involved with the placement of an ACE?

All children receiving this will undergo general anesthesia and a surgical procedure. Most patients will stay in the hospital for 1 to 2 days. Very often the procedure is performed laparoscopically making only 2 or 3 ¼ inch incisions on the abdomen.

The catheter (tube) typically enters the right side of the colon either through the appendix or the cecum (see diagram below). This allows the family to washout the entire colon each day.



How is the ACE procedure performed?

We perform this procedure two different ways:

- **For an appendicostomy**: The appendix is used and brought onto the child's abdominal wall. In general this works best for children with long-term needs, such as those with incontinence.

- **For a cecostomy tube**: A tube will be placed directly into the large bowel in the area of the cecum, referred to as a cecostomy tube. In general, this approach is more temporary, and may work better in children with severe constipation.

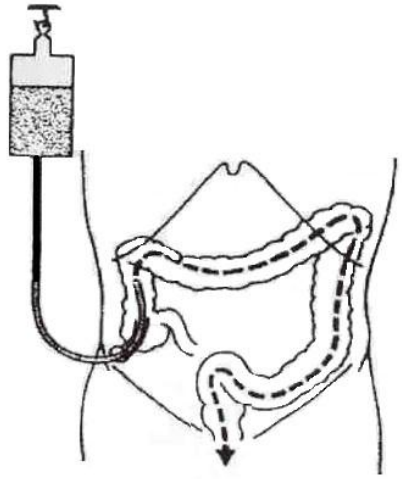
How does the ACE procedure work?

The goal of this procedure is to empty the whole colon of stool. Fluid is given through a catheter (tube) into the right (proximal) side of the colon. We will teach you how to make this saline solution at home.

Once you and your child figure out the correct amount and timing of the fluid, the distal colon (rectum) will remain empty for the majority of the day following irrigation.

What is the difference between an ACE procedure and an enema?

Most children tolerate this better than an enema because an enema can be painful or uncomfortable when the tube inserts through the rectum. In addition, stool that is higher up in the colon often moves into the rectum long before it is time for the next enema resulting in more accidents. Because of this, an enema cannot washout the whole colon, just the lower part.



Typical set up for installing fluid through an ACE

Will an ACE work for my child?

In about 90% of cases, families will note a marked improvement in accidents and soiling. Because stool accidents may still occur, it will take some time to adjust and figure out the correct volume of fluid to use and the timing of these flushes in order to make sure the colon gets clean every day in each child. As well, some children may also need some additional medications. However, once these adjustments are make the number of accidents and soiling will decrease improve.

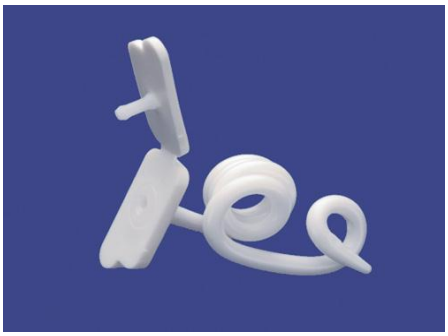
What is the typical schedule for after surgery?

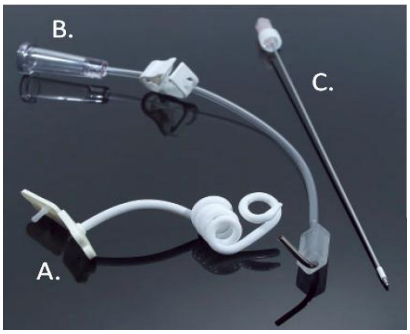
After surgery the catheter will be left through the ostomy. During the first week you will flush the catether each daily with 100 ml of homemade saline. It is important to use saline as this prevents your child from losing important salts fromt their body. Depending on the type of surgery, this initial catheter will be removed. At this point we may either place a shorter catheter, or in some cases have the family pass a catheter each day only when doing irrigations. We will then increase the amount of saline flushed through the catether until we reach a volume that cleans the colon. Amounts will vary depending on the size of the child from 500 ml to 1000 ml. Most irrigations are daily, however, some children will need two irrigations a day. Irrigations are given using a bag that attaches to your catheter.

What do the ACE catheters look like?

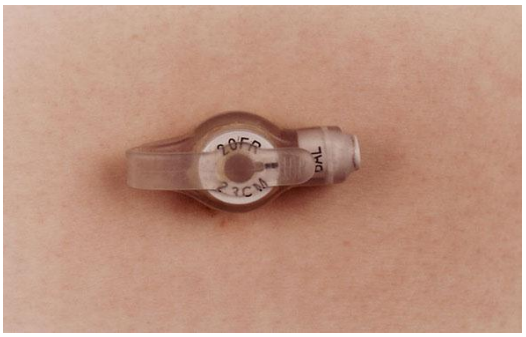
Two basic types of ACE catheters are used, the Chait and the Button. We will work with you to determine which of these works best for your child.

Chait Tubes





Buttons



What is the contact information?

If you have any question, problems or concerns call the Pediatric Surgery clinic from 8-5:00pm Monday thru Friday, 734-764-4151. After 5:00pm or on the weekends if you have urgent issues call hospital paging at 734 936-4000 and ask the operator to page the Pediatric Surgeon "on call".

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