

# **Bowel Management for Children with Anorectal Malformations**

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Dr. Alberto Peña, Chief of Surgery at Schneider Children's Hospital created the posterior sagittal anorectoplasty surgery to help children who were born with imperforate anus. Since 1980, Dr Peña has operated on 946 children with anorectal malformations, which is the largest series of patients in the world. The ultimate goal for any surgeon operating on these children is to achieve the best urinary control, bowel control and sexual function possible.

Despite a good operation to correct a child's anorectal defect, there are many children who do not obtain bowel control, or suffer from different degrees of fecal incontinence. It is important to know the three specific factors that need to be present in order to be fecally continent:

First, the child needs to have sensation (within the rectum); children born with anorectal malformations lack the intrinsic sensation to feel stool or gas passing through their rectum. Therefore, many times the child may unknowingly soil.

Second, the child needs to have good motility of the colon. Normally, the rectosigmoid remains quiet for periods of 24-48 hours, then a massive peristaltic wave allows the complete emptying of it to remain quiet again. If their rectosigmoid is slow, the stool stays stagnant, hence, constipation occurs and the child may suffer overflow incontinence. On the other hand, a very active colon may provoke a constant passing of stool which may significantly interfere with bowel continence.

Third, the child needs to possess good voluntary muscles, or sphincteric mechanism. These muscles allow for good control and retention of stool. Often the child with an anorectal malformation lacks one or all of these three essential elements of fecal incontinence.

The surgeon can say in advance which children have a good functional prognosis and which children have a poor prognosis:

## **Indicators of Good Prognosis for Bowel Control**

- normal sacrum
- prominent midline groove (good muscles)
- rectal atresia
- vestibular fistula
- most children with imperforate anus without a fistula
- low cloacas

- low defects (perineal fistulas)

### **Indicators of Poor Prognosis for Bowel Control**

- abnormal sacrum (more than 2 vertebrae missing)
- flat perineum (poor muscles)
- recto bladder neck fistula
- high cloacas
- complex malformations

A child born with anorectal malformations should not be expected to be toilet trained before 2 -1/2 to 3 years of age. Before that age, however, there are some signs that have a prognostic value concerning the possibility for the child becoming toilet trained:

### **Good Prognostic Signs**

- good bowel movement pattern: 1-3 bowel movements per day, and no soiling in between
- urinary control
- evidence of sensation when passing stool (pushing, making faces)

### **Bad Prognostic Signs**

- urinary incontinence, dribbling of urine
- constant soiling and passing stool
- no sensation (no pushing)

Children born with a good prognosis type of defect and have signs of a good prognosis for bowel control are put on a Bowel Training Program like normal children, since we expect them to become toilet trained soon. Children who are born with poor prognostic malformations are offered a Bowel Management Program, which will allow them to be clean for a 24 hour period. At the present time, we see approximately 50 new patients per year with fecal and/or urinary incontinence. We have learned to listen and truly take a special interest in each and every one of these children.

### **Bowel Training Program**

The bowel training program is best implemented when the child is around 2 years old. Parents have the child sit on the potty after every meal, and are encouraged to do it as a game, not a punishment. If the child happens to have a bowel movement in the potty, the parents should be enthusiastic and reward the child. It is not a bad idea to have the child sit on the potty after every meal, to take advantage of the gastrocolic reflex (the peristaltic wave in the colon that is induced by the entrance of food into the stomach). If the bowel training program is not successful, and the time is coming for the child to start school, the parents are given the option of keeping the child out of

school for another year, or trying the bowel management program for one year, assuming that it will be used on a temporary basis.

### **Bowel Management Program**

The age at which we start a bowel management program is determined by the age of the child when referred to us. Preferably, it is best to start before a child enters school. We do not recommend sending a child to school in diapers or pull-ups while his classmates are already using normal underwear. This only makes him/her more self-conscious. Our goal is to make these children socially accepted in and out of school.



Children born with imperforate anus who are suffering from fecal incontinence can be divided into two well-defined groups: those with constipation and those with diarrhea.

These two groups must be treated in different ways. The basis of the Bowel Management Program is to teach the parents to clean the child's colon once a day by the use of a suppository, an enema or a colonic irrigation. We then find a mechanism to keep the colon quiet for the following 24 hours, to avoid soiling.

The timing of when to give the enema may also play a role in how efficiently it cleans the bowel. We recommend giving it after the main meal of the day so as to take advantage of the gastrocolic reflex. The child should be encouraged to take their time when toileting. This could be time used for homework, special reading, or a favorite TV program.

We recommend using a Fleet enema because of the convenience of having the enema in a prepared vial. Some families find it easier and less expensive to administer saline enemas. Occasionally, children will complain of cramping with the Fleet enema but will have no complaints with the saline enema. If a daily Fleet (phosphate) enema is used, the parents should be instructed to give no more than one Fleet enema per day as hypo-calcemia could occur. Patients with impaired renal function should use Fleet enemas with caution.

Initially, the family will have to determine how often these enemas are to be given by substantiating how soon soiling begins after the initial enema. Usually, this can be anywhere between 24-48 hours. The position of the child is important in determining the efficiency of the enema. The child should be in a position that would facilitate delivery of the fluid as high up into the colon as possible. If this is a small child, this can be done by placing the child on the parent's lap with the head down and the buttocks on the lap. The older child may lie on a bed

with his/her buttocks on the bed with the head down towards the floor. Another position for the older child or adolescent is in a knee-chest position with the buttocks in the air. Adolescents who are trying to

achieve independence with the self administration of these enemas may also try the knee-chest position while lying on their sides. The enema fluid should be retained as long as possible. After administration of the enema, the child should sit on the toilet for as long as necessary (usually at least twenty minutes) to allow for emptying of the colon. If the

child is unable to retain the fluid of the enema or the enema does not empty the colon, then using a Foley catheter to deliver the fluid higher into the colon will increase the efficiency of the enema. Once the routine of emptying the colon at a certain time with an enema is established (anywhere from 6 months to 2 years), then one may be able to decrease the fluid in the enema.



To make sure the child is truly clean, the nurse or physician should administer the first enema with the parent present. This will clarify any questions the parent may have regarding the technique, positioning, or amount of solution to be given. The program is very individualized and the parents learn to look at the consistency and amount of stool obtained after the enema. After a period of time, the parents will know when the enema was not effective and when they need to repeat it with a saline solution. Suppositories may be sufficient to stimulate a bowel movement once the child has been on a program of enemas for some time.

### **Loose stools and diarrhea**

This group of children have an overactive colon, and most of the time, they do not have a reservoir. This means that even when an enema cleans their colon, the stool passes fairly quickly from the cecum to the descending colon and the anus. To prevent this, we recommend a constipating diet and/or medications to slow down the colon.

Eliminating foods that further loosen bowel movements will make the colon easier to clean with enemas. Some children, however, may have an "irritable" colon which needs to be managed with medication to slow colon motility. We have found that Immodium works well. Parents are instructed to avoid all fried foods and dairy products. The combination of Immodium, enemas and correct diet makes a significant difference in managing a totally incontinent child. To determine the right combination, we start off with a very strict diet, enemas, and a high dose of Immodium. Most children respond to this aggressive management within 24 hours. We then introduce the meals which the child misses the most, in a gradual manner, observing the

effect on the colonic activity; eventually, we find the most liberal possible diet for the child. If the child continues to be clean with a regular diet, we will then try to reduce, gradually, the dose of medication. Again, this is found by trial and error. This strict diet does not need to last forever. After about 2 months in which the child has remained clean for 24 hours, they may have one of their "black list" foods that they have been craving. If the child soils after eating that food, they know they must stay away from it. They must only introduce one new food a week and observe the bowel movement pattern.

### **Long Term Programs**

In those cases of children who have a successful Bowel Management Program with enemas, the parents frequently ask if this program will be needed for life. The answer is "yes" for those patients born with a poor prognosis type of defect (very high defect, poor sacrum and poor sphincters). However, since we are dealing with a spectrum of defects, there are cases with some degree of bowel control; we subject them to the bowel management program because we do not want to expose them to occasional embarrassing accidents of uncontrolled bowel movements at school. However, as time goes by, the patient becomes more cooperative and more interested and concerned about his/her problem. It is then conceivable that later in life, a patient may stop using enemas and remain clean, following a specific regimen of a disciplined diet with regular meals to provoke bowel movements at a predictable time. Thus, every summer, the patients with some potential for bowel control, can try, on an experimental basis, to find out how well they can control their bowel movements without the help of enemas.

This is done during the summer vacations to avoid accidents at school. We expect the parents and child to stay at home, to socialize very little, to have a regular diet with a regular schedule. The child must sit on the toilet after every meal and try to pass stool. In addition, he must remain alert all day while trying to learn to discriminate the feeling of an imminent bowel movement. If the child belongs to the "constipated" group, we usually suggest they take a laxative every day in a single dose, as to try to provoke an effect as controlled as possible; ideally, that is, a single bowel movement per day. We adjust the dose of the laxative by trial and error. It is best to first try the less aggressive and natural types of laxative, and then, depending on the patient's response, move into medications with more active ingredients. The first choice, of course, must be a laxative type of diet; the next one is either a bulking forming type of product or else a stool softener. If these medications don't work, a laxative with an active ingredient is

indicated. After a few days or weeks, the family and child are in a position to decide whether they want to continue with that regimen or go back to the bowel management program. This decision is theirs and is based on the quality of life that they experience with each type of method.

This description does not, by far, state an example of our entire Bowel Management Program. There are many variations depending on patient needs. What we have found, is that it takes dedication, determination, consistency and love for everyone involved. Children who have completed the bowel management program and remain clean for 24 hours experience a new sense of confidence based on an improved quality of life.