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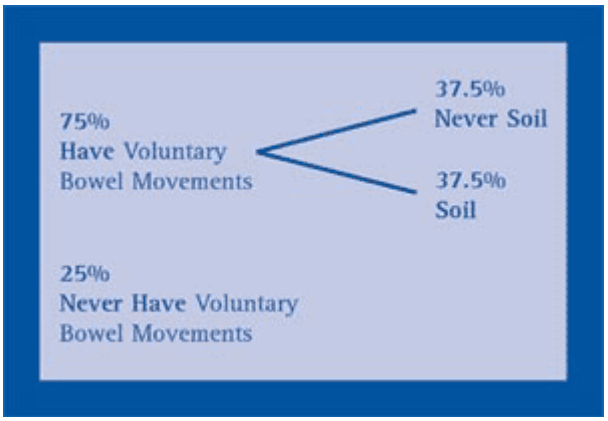
Fecal Incontinence and Anorectal Malformations

Recent studies found 75 percent of all children with anorectal malformations, who have undergone a correct and successful operation, have voluntary bowel movements after the age of 3. About half of these patients soil their underwear occasionally. Those episodes of soiling are usually related to constipation.

When the problem is treated properly, the soiling frequently disappears. Thus, approximately 40 percent of all children have voluntary bowel movements and no soiling. In other words, they behave like normal children. There is a long way to go and a lot to do to improve the quality of life of a significant number of children.

Children with good bowel control still may suffer from temporary episodes of fecal incontinence, especially when they experience severe diarrhea. Some 25 percent of all children suffer from fecal incontinence, and they must receive some form of bowel management to keep them clean.



Despite a good operation to correct a child's anorectal defect, there are many children who do not achieve bowel control or suffer from different degrees of fecal incontinence.

It is important to know the three specific factors that play a role in achieving fecal continence:

1. The child needs to have sensation (within the rectum)
2. The child needs to have good motility of the colon
3. The child needs to possess good voluntary muscles or sphincteric mechanism

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Sensation Within the Rectum

Children born with anorectal malformation lack the intrinsic sensation to feel stool or gas passing through their rectum. Therefore, many times the child may unknowingly soil, become accustomed to the smell of stool, which upsets the entire family and anyone around him / her.

Motility of the Colon

The rectosigmoid is that portion of the bowel that acts as a natural reservoir of the feces. It is physiologically important in order to accumulate and "store" the feces between bowel movements.

Normally, the rectosigmoid remains quiet for periods of 24 to 48 hours -- the time necessary to accumulate the feces. Then a massive peristaltic wave allows the complete emptying of it and then it remains quiet again.

If the rectosigmoid is slow, the stool stays stagnant, therefore constipation occurs and the child may suffer from overflow incontinence and will thus soil. On the other hand, if a child has no rectosigmoid (no reservoir) he / she will be passing stool constantly, which we call colonic hypermotility.

Muscles / Voluntary Sphincter

These muscles, or voluntary sphincter, normally surround the rectum and anus and are considered a fundamental component for control or continence. Children with anorectal malformations suffer from different degrees of lack of development of these muscles and therefore incapacity to hold the stool.

The new surgical technique introduced by Alberto Peña, MD, at the beginning of the 1980s, has an enormous advantage compared to the previous operations to position the rectum exactly within the limits of the sphincteric mechanism responsible for continence.

Unfortunately, the sphincter muscles are frequently not normal -- the more complex the defect, the less developed the muscles.

The surgeon is able to predict in advance which children may have good functional prognosis and which children may have poor prognosis.

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Indicators of Good and Poor Prognosis for Bowel Control

Indicators of Good Prognosis for Bowel Control	Indicators of Poor Prognosis for Bowel Control
Normal Sacrum	Abnormal sacrum
Prominent midline groove (good muscles)	Flat perineum (poor muscles)
Some types of anorectal malformations: ▪ Rectal atresia ▪ Vestibular Fistula ▪ Imperforate anus without a fistula ▪ Cloacas with a common channel < 3 cm ▪ Less complex malformations, such as a perineal fistula	Some types of anorectal malformations: ▪ Rectobladderneck fistula ▪ Cloacas with a common channel > 3 cm ▪ Complex malformations

Functional Prognosis Indicators

After the main repair and after the colostomy closure it is possible to establish the functional prognosis.

Good Prognosis Signs	Poor Prognosis Signs
Good bowel movement patterns: one to two bowel movements per day -- no soiling in between	Constant soiling and passing of stool
Evidence of sensation when passing stool (pushing, making faces)	No sensation (no pushing)
Urinary control	Urinary incontinence; dribbling of urine

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Functional Prognosis Relative to the Anorectal Malformation

Parents must be realistically informed as to their child's chances for bowel control avoiding needless frustration later. It is imperative to establish the functional prognosis of each child as early as possible to avoid creating false expectations for parents. Since we are dealing with a spectrum of defects, we should expect a spectrum of results.

Type of Anorectal Defect	Sex	Voluntary Bowel Movement	Soiling	Voluntary Bowel Movement (never soiling)	Constipation
Perineal fistula	F/M	100%	0%	100%	26%
Anal atresia or stenosis	F/M	100%	16%	84%	80%
Vestibular fistula	F	94%	38%	71%	64%
Bulbar fistula	M	88%	65%	32%	59%
ARM without fistula	F/M	85%	41%	71%	47%
Cloaca C. Ch.<3 cm*	F	83%	78%	27%	32%
Prostatic fistula	M	76%	78%	28%	50%
Real vaginal fistula	F	75%	100%	0%	25%
Cloaca C. Ch. >3 cm*	F	59%	89%	22%	53%
Bladder-neck fistula	M	28%	100%	0%	29%

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** C. Ch.= Common Channel*

Anorectal Defects Associated with Good Prognosis

Once the diagnosis of the specific defect is established, the functional prognosis can be predicted. If the child's defect is of a type associated with good prognosis, one should expect the child will have voluntary bowel movements by age 3. These defects include:

- Vestibular fistula
- Perineal fistula
- Rectal atresia
- Rectourethral bulbar fistula
- Imperforate anus with no fistula

These children will still need supervision to avoid fecal impaction, constipation and soiling.

Anorectal Defects Associated with Poor Prognosis

If the child's defect is of the type associated with a poor prognosis, parents must be informed their child will most likely need a bowel management program to remain clean and socially acceptable. These defects include:

- A very high cloaca with a common channel longer than three centimeters
- A rectobladderneck fistula

This should be implemented when the child is 3 or 4 years old, before he / she begins spending a great deal of time away from home.

Children with rectoprostatic fistulas have an almost equal chance of having voluntary bowel movements or being incontinent. In these children, an attempt should be made to achieve toilet training by the age of three.

If this proves to be unsuccessful, bowel management should be immediately implemented so that the child can remain clean and avoid psychological sequelae.

Urinary incontinence occurs in male children with anorectal malformations only when they have an extremely defective or absent sacrum or when the basic principles of surgical repair are not followed and important nerves are damaged during the operation.

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Thus, the overwhelming majority of male children with anorectal malformations who are properly treated have urinary control.

This is also true for female children with all anorectal malformations, except cloacae. A significant number of girls / females who have undergone repair of a cloaca require intermittent catheterization in order to empty their bladder.

This happens in 69 percent of children with a high cloaca, defined as a common channel longer than three cm, and 20 percent of children with a low cloaca, defined as a common channel shorter than three cm.

The bladder neck in most girls with cloaca is competent, and therefore, they remain completely dry when treated with intermittent catheterization. If catheterization is not performed, urinary overflow incontinence will occur.

Contact the Colorectal Center at Cincinnati Children's

For more information or to request an appointment for the Colorectal Center at Cincinnati Children's Hospital Medical Center, please contact us.