ARNOLD PALMER HOSPITAL
For Children
Supported by Arnold Palmer Medical Center Foundation

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Constipation in Children

This hand-out provides a general overview on managing constipation in children and may not apply to everyone. A discussion with your doctor is necessary to find out if this information applies to your child and to get more information on this subject.

What is chronic constipation?

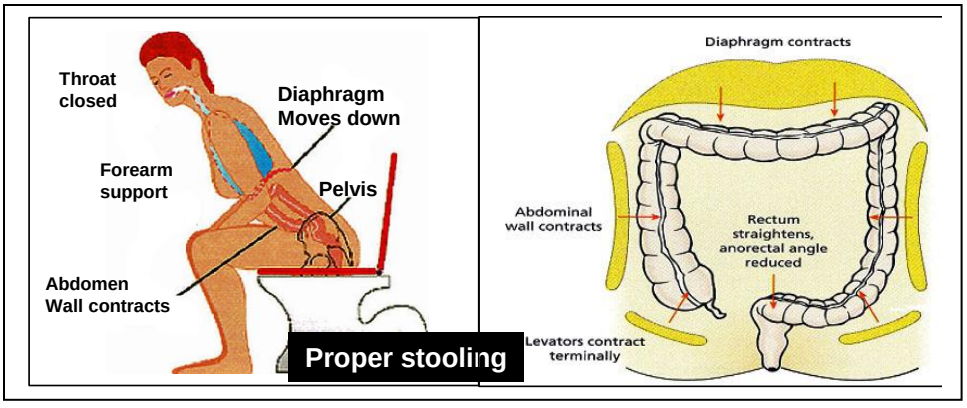
Constipation is the ***infrequent and difficult passage of stool.*** The **frequency of bowel movements** among healthy people varies greatly **ranging from three movements a day to three a week**. As a rule, if more than 3 days pass without a bowel movement, the intestinal contents may harden, and a person may have difficulty or even pain during elimination. Constipation may result in pain when the child has bowel movements. Cracks in the skin, coiled fissures, may develop in the anus. These fissures can bleed or increase pain, causing a child to withhold his or her stool.

Children ***may withhold their stools*** for other reasons as well. Some find it inconvenient to use toilets outside the home. Also, severe emotional stress caused by family crises or difficulties at school may cause children to withhold their stools. In these instances, the periods between bowel movements may become quite long, in some cases lasting longer than 1 or 2 weeks. These children may develop fecal impaction, a situation where the stool is packed so tightly in the bowel that the normal pushing action of the bowel is not enough to expel the stool spontaneously.

Children with chronic constipation (constipation that goes on for some time) resist the urge to have a bowel movement. ***They may try to withhold stool*** by tightening their anal muscles, squeezing their buttocks together and standing up straight or lying down flat. After a while, the urge to have a bowel movement goes away.

As they continue to do this, stool builds up in the lower bowel. The stool becomes harder and larger, and passage of ***stool causes great pain***. The pain increases the child's desire not to have bowel movements.

If the child doesn't pass the huge stool after some time, the rectal and anal muscles may get tired and partly relax and soft or liquid stool may leak out around the hard stool that has collected in the lower bowel. It is often foul smelling and may stain the child's clothing. This is called **stool soiling**. The child cannot prevent it. The leakage of liquid, diarrhea-like stool into clothing also called "**encopresis**".



Is Constipation Serious?

Although it may be extremely bothersome, constipation itself usually is not serious. Constipation can lead to complications, such as ***hemorrhoids*** caused by extreme straining or ***fissures*** caused by the hard stool stretching the sphincters. ***Bleeding*** can occur for either of these reasons and appears as bright red streaks on the surface of the stool. ***Fissures may be quite painful and can aggravate the constipation that originally caused them***. Fecal impaction tends to occur in very young children and in older adults and may be accompanied by a loss of control of stool, with liquid stool flowing around the hard impaction.

Occasionally straining causes a ***small amount of intestinal lining to push out from the rectal opening***. This condition is known as ***rectal prolapse*** and may lead to secretion of mucus that may stain underpants.

How did my child develop chronic constipation?

This question isn't always easy to answer. Chronic constipation may start as simple constipation caused by ***not eating enough fiber or drinking enough fluids***. One large stool can cause a crack in the anus that makes having a ***bowel movement painful***, so ***the child resists the urge***. Sometimes, a tendency toward constipation runs in family.

An illness that leads to poor food intake, physical inactivity or fever can also result in constipation that lasts after the illness goes away. Perhaps the child has ***had hard, painful stools***. Some children naturally have dry, hard stools. A diet change, viral illness, hot weather, or travel can lead to hard stools. A bad diaper rash can cause painful passage of stool.

Older children ***may start holding bowel movements*** when they go to school or summer camp and are faced with a toilet that is less private than the one they have at home. At any age, fear of discomfort or embarrassment can make a child try not to have a bowel movement. If this continues, the result is constipation. The initial cause may have occurred many years before the child is seen by a doctor for treatment of constipation.

A few children withhold stools because of emotional problems. In many children, no cause can be found whatever the cause of stool withholding, once it begins, the large, hard stools that result make the pattern continue.

Stool that is held back eventually fills up the colon and stretches it out of its normal shape. Stool retained in the colon dries out as the colon absorbs water from it. The longer the stool is held in the colon, the larger and harder it becomes, making bowel movements even more painful. This starts a ***vicious cycle***. In the normal colon, muscles try to push stool out. Nerves tell the child that a stool needs to come out. However, the stretched-out, flabby colon muscles cannot push. Hard stool gets stuck. Sometimes only liquid can pass around the rocklike stool. Stretched nerves become less sensitive. The ***child may no longer realize that he needs to have a bowel movement***, and he may be afraid to try to go.

What are the signs of constipation in children?

- Small, very hard, dry, rock-like stools (even if your child has a bowel movement daily)
- Firm stools that are passed with difficulty pain or crying
- Blood-streaked stools
- Stool soiling
- Long straining during a bowel movement
- Abdominal pain and bloating
- Crankiness and/or listlessness
- Loss of appetite
- Fear of using the toilet
- Screaming that occurs when your child has the urge to have a bowel movement or during a bowel movement.
- Other symptoms include ***stomachaches, cramps, vomiting, nausea, bloating, cranky behavior, poor appetite, flushing or pallor, headaches, and even weight loss.*** Some children with constipation ***may wet the bed at night*** or even wet their clothing during the daytime. This wetting is called ***"enuresis".*** These children may have urinary tract infections because stool masses press on the urinary tract and can block normal urine flow.

HOW TO MANAGE YOUR CHILD'S CONSTIPATION?

The management of constipation includes a few steps that should be followed in order to solve the problem. It typically includes the removal of all stools from the large intestine, keeping the stool soft, improving the fiber intake in diet, drink enough fluid and reach a regular stool pattern.

If your doctor thinks ***emotional problems*** are part of the cause of stool withholding and constipation, your child should have help to deal with these problems during this part of the treatment. Your doctor can suggest a ***child counselor***.

Younger child may need **rewards** and praise for cooperate and sitting on the toilet and, later, for having bowel movements into the toilet.

- Start using the ***Star Calendar*** when your child has his the accident-free day or first sit on the potty/toilet.
- Write the month at the top of the calendar. Write the dates for each day of the month in the squares.
- Every night: check your child's Bowel Tracking Sheet before he goes to bed.
    - -If he has had no accidents that day, tell him/her how proud you are of him. Let him put a star on that day on the Star Calendar.
    - -If he did have an accident, have him put a line through that day.
- At first, give your child a small treat for every star (.e.g. for every accident-free day).
- As your child gets better, you can expect more from him. When it is easy for him/her to have 1 accident-free day (he does it 2 or 3 times in one- week), tell him that 1 star is not enough to get a treat from now on. Now he will have to get 2 stars in a row to get a treat. When 2 stars become easy for him, tell him he will need 3 stars in a row to get a treat.
- As he gets better, earning treats will get harder. But it should never be too hard for him to get a treat. That way, he will like to try and will keep trying harder each day. He will learn what he needs to do to stop having accidents.

STEPS OF THE CONSTIPATION MANAGEMENT

CONSTIPATION IS CURABLE!
Children who follow the treatment plan will be able to control their bowel movements. It may take ***many months for the intestine to regain strength and feeling*** after being stretched out for a long time

1. **CLEAN-OUT.** The first step in treatment involves ***removing the stool*** that been gathered in the lower bowel. This must be done before your child can begin to learn or relearn normal bowel habits by using a series of ***Fleet enemas*** or large doses of ***stool softeners*** (e.g. Golytely) and ***stimulant laxatives*** (e.g. Dulcolax) to remove the stool.
2. **MAINTENANCE THERAPY**. After the stool is removed, it is important to be sure that your child ***can have bowel movements easily*** in order to prevent another large collection of stool. During this part of retraining, your child's bowel should be ***kept empty so it can regain tone and function.*** The treatment includes changing your child's diet and giving daily stool softeners/laxatives to help soften the stools. A doctor is best qualified to determine when a laxative is needed and which type is best. There are various types of oral laxatives, and they work in different ways.
3. **DIET CHANGES.** For most people, ***dietary and lifestyle improvements*** can lessen the chances of constipation. A ***well balanced diet*** that includes ***fiber-rich foods***, such as unprocessed bran, whole-grain bread, and fresh fruits and vegetables, is recommended. Drinking plenty of ***fluids*** an ***exercising*** regularly will help to stimulate intestinal activity.
4. **TOILET TRAINING.** ***Bowel habits*** also are important. ***Sufficient time*** should be set aside to allow for undisturbed visits to the bathroom. In addition, the urge to have a bowel movement should not be ignored. Encourage the child to sit on the toilet with proper support for the feet. Have your child sit on the toilet at one-three times every day ***after meals.***
5. **Increase physical activity** if it seems below average for your child's age. Exercise helps move stool down in the colon.

For the long-term resolution of the constipation your child should have good daily fluid and fiber intake and develop a regular stooling habit, which means that he/she goes to the bathroom at the same time every day.

Above all, it is necessary to recognize that a ***successful treatment program requires persistent effort and time.*** Constipation does not occur overnight, and it is not reasonable to expect that constipation can be relieved overnight. Chronic constipation ***requires patience*** and effort on your part.

STOOL SOFTENERS AND LAXATIVES

Your doctor can tell you which stool softeners/ laxatives to use and how much to give your child. They ***must be taken every day*** to get your child's body into rhythm. Stool softeners /laxatives may be given for ***three months or longer***. The stool softeners your doctor prescribes will be ***safe*** for young children, even if it is used for a long time. If your child's ***stools are too loose, you can reduce*** the amount of laxative, but keep giving your child a laxative every day. Some laxatives taste better if they are mixed into orange juice, milk or other drinks.

Bulk-forming laxatives are generally considered the safest laxative form but can interfere with the absorption of some drugs. These laxatives, which should be taken with 5-8 ounces of water: they absorb water in the intestine and make the stool softer: Bulk laxatives include psyllium (Metamucil), methylcellulose (Citrucel), calcium polycarbophil (FiberCon), and bran (in food and supplements). *See the table later.*

Stimulants cause rhythmic muscular contractions in the small or large intestine. These agents may lead to dependency and can damage the bowel with prolonged daily use. These products include phenolphthalein (Correctol, Ex-tax), **bisacodyl (Dulcolax),** castor oil (Purge, Neoloid), and ***senna (Senokot***, Fletcher's Castoria).

Stool softeners, or wetting agents, provide moisture to the stool and prevent excessive dehydration. Products include those with ***docusate*** (Colace, Dialose and Surfak) and ***Miralax.***

Lubricants grease the stool and make it slip through the intestine more easily. Mineral oil is the most commonly used lubricant.

Osmotics are salts or carbohydrates that cause water to remain in the intestine for easier movement of stool. Laxatives in the group include milk of magnesia, ***magnesium citrate, lactulose***, and Epsom salts.

Your child may try to withhold stools at first in spite of the loose bowel movements produced by diet changes and laxatives. He or she may still be afraid of painful bowel movements. The ***stool withholding will stop after a while***.

DIET CHANGES THAT WILL HELP YOUR CHILD TO HAVE BOWEL CONTROL

FLUID intake.

It is important to drink enough fluid every day. If the fluid intake is below the need your child's body tries to save fluid and the stool can become harder and his/her urine is darker. ***Your doctor will recommend you how much fluid your child should drink a day.*** Fluid includes drinks, soups, juice fruits etc.

FIBER

Foods with fiber include ***fruits, vegetables, whole-grain cereals and breads, nuts, seeds and beans***. It is not found in meats or dairy foods. Fiber supplies roughage and bulk that helps keep the digestive system healthy, promotes regular bowel movements, and helps satisfy the appetite.

How much fiber your child should eat a day? US Dietary Guidelines recommend we eat a variety of foods, avoid too much fat, sodium, cholesterol, and sugar, and that we have fiber in **adult diet of 25 to 30 grams per day**. In children the recommendation is ***age + 5 grams*** of dietary fiber (e.g. a 10 year old child needs 10+5=15grams fiber a day.) Add high-fiber foods to the diet ***gradually,*** giving your body time to adjust.

The table below shows the fiber contents of fruits and vegetables per serving.

Food	Fiber, g/100g*	Typical Serving	Fiber/serving
FRUITS			
Apple (without skin)	2.1	1 medium-sized apple	**2.9**
Apple (with skin)	2.5	1 medium-sized	**3.5**
Apricot (fresh)	1.7	3 apricots	**1.8**
Apricot (dried)	8.1	1 cup	**10.5**
Banana	2.1	1 banana	**2.5**
Blueberries	2.7	1 cup	**3.9**
Cantaloupe	1.0	half edible portion	**2.7**
Cherries, sweet	1.2	15 cherries	**1.2**
Dates	7.6	1 cup (chopped)	**13.5**
Grapefruit	1.3	half edible portion	**1.6**
Grapes	1.3	10 grapes	**2.6**
Oranges	2.0	1 orange	**2.6**

Peach (with skin)	2.1	1 peach	**2.1**
Peach (without skin)	1.4	1 peach	**1.4**
Pear (with skin)	2.8	1 pear	**4.6**
Pear (without skin)	2.3	1 pear	**3.8**
Pineapple	1.4	1 cup (diced)	**2.2**
Plums, damsons	1.7	3 plums	**1.7**
Prunes	11.9	11 dried prunes	**11.9**
Raisins	8.7	packet	**2.2**
Raspberries	5.1	1 cup	**6.3**
Strawberries	2.0	1 cup	**3.0**
Watermelon	0.3	4 x 8-inch wedge	**1.3**
JUICES			
Apple	0.3	1 cup	**0.74**
Grapefruit	0.4	1 cup	**1.0**
Grape	0.5	1 cup	**1.3**
Orange	0.4	1 cup	**1.0**
Papaya	0.6	1 cup	**1.5**
VEGETABLES-COOKED			
Asparagus, cut	1.5	7 spears	**1.5**
Beans, string, green	2.6	1 cup	**3.4**
Broccoli	2.8	1 stalk	**5.0**
Brussels sprouts	3.0	7-8 sprouts	**4.6**
Cabbage, red	2.0	1 cup (cooked)	**2.9**
Cabbage, white	2.0	1 cup (cooked)	**2.9**
Carrots	3.0	1 cup	**4.6**
Cauliflower	1.7	1 cup	**2.1**
Corn, canned	2.8	1 cup	**4.5**
Kale leaves	2.6	1 cup (cooked)	**2.9**
Parsnip	3.5	1 cup (cooked)	**5.4**
Peas	4.5	1 cup (cooked)	**7.2**
Potato (without skin)	1.0	1 boiled	**1.4**
Potato (with skin)	1.7	1 boiled	**2.3**
Spinach	2.3	1 cup (raw)	**4.1**
Squash, summer	1.6	1 cup (cooked, diced)	**3.4**
Sweet potatoes	2.4	1 baked (5 ½ inches)	**2.7**
Turnip	2.2	1 cup (cooked, diced)	**3.4**
Zucchini	2.0	1 cup (cooked, diced)	**4.2**
VEGETABLES- RAW			
Bean sprout, soy	2.6	1 cup	**2.6**
Celery, diced	1.5	1 large stalk	**3.7**
Cucumber	0.8	6-8 slices with skin	**0.2**
Lettuce, sliced	1.5	1 wedge iceberg	**2.0**
Mushrooms, sliced	2.5	half cup (sliced)	**0.8**
Onions, sliced	1.3	1 cup	**1.3**
Peppers, green, sliced	1.3	1 pod	**1.0**
Tomato	1.5	1 tomato	**1.8**
Spinach	4.0	1 cup (chopped)	**8.0**
LEGUMES			
Baked beans, tomato sauce	7.3	1 cup	**18.6**
Dried peas, cooked	4.7	half cup (cooked)	**4.7**
Kidney beans, cooked	7.9	half cup (cooked)	**7.4**
Lima beans, cooked/canned	5.4	half cup (cooked)	**2.6**
Lentils, cooked	3.7	half cup (cooked)	**1.9**
Navy beans, cooked	6.3	half cup (cooked)	**3.1**
BREADS, PASTAS, AND FLOURS			
Bagels	1.1	half bagel	**1.1**
Bran muffins	6.3	muffin	**6.3**

Cracked wheat	4,1	slice	**4.1**
Crisp bread, rye	14.9		
Crisp bread, wheat	12.9		
French bread	2.0	slice	**0.67**
Italian bread	1.0	slice	**0.33**
Mixed grains	3.7		
Oatmeal	2.2	1 cup	**5.3**
Pita bread (5 inches)	0.9		
Pumpernickel bread	3.2	slice	**1.0**
Raisin bread	2.2	slice	**0.55**
White bread	2.2	slice	**0.55**
Whole-wheat bread	5.7	slice	**1.66**
PASTA AND RICE COOKED			
Macaroni	0.8	1 cup (cooked)	**1.0**
Rice, brown	1.2	1 cup (cooked)	**2.4**
Rice, polished	0.3	1 cup (cooked)	**0.6**
Spaghetti (regular)	0.8	1 cup (cooked)	**1.0**
Spaghetti (whole wheat)	2.8	1 cup (cooked)	**3.0**
FLOURS AND GRAINS			
Bran, corn	62.2	oz	**18.7**
Bran, oat	27.8	oz	**8.3**
Bran, wheat	41.2	oz	**12.4**
Rolled oats	5.7	1 cup (cooked)	**13.7**
Rye flour (72 percent)	4.5	1 cup	**5.2**
Rye flour (100 percent)	12.8	1 cup	**15.4**
WHEAT FLOUR			
Whole meal (100 percent)	8.9	1 cup	**10.6**
Brown (85 percent)	7.3	1 cup	**8.8**
White (72 percent)	2.9	1 cup	**2.9**
NUTS			
Almonds	7.2	half cup (slivered)	**3.6**
Peanuts	8.1	1 cup	**11.7**
Filberts	6.0	half cup	**2.8**

* Dietary fiber values are averages compiled from literature sources.
* Reproduced from the American Gastroenterological Association. Kim,Yl, Gastroenterology 2000; 118:1235.

IDEAS FOR THE DAILY BALANCED DIET

BREAKFAST. *For fiber, have at least 1 fruit, fiber cereal or bread, and juice*.
-Bran cereal: All Bran, Puffed Wheat, Shredded Wheat, Nabisco 100% Bran, cornflakes.
-Pancakes: Make with whole wheat flour.
-Toast: Make from whole wheat bread. Make French toast.
-Fruit juice: Orange, apple, or mixed fruit juice. Warm apple juice helps child to go bathroom in morning.
-Fruits: Apple slices, orange sections, berries, or other fruit. Dried fruits like raisins and apricots. Not bananas.

LUNCH. *For fiber, have at least 1 fruit and 1 vegetable.*
-Sandwiches: Whole wheat bread. Peanut butter, limit cheese.
-Salads: Lettuce, carrots, celery, tomatoes.
-Soups: Vegetable soups.
-There are nutrient bars with fiber with various fiber content (1, 3, 5g or even more fiber per bar)

DINNER. *For fiber, have at least 1 vegetable and a whole grain product.*
-Salads: Mixed vegetables or fruits.
-Vegetables: Any raw or cooked vegetable, like spinach, broccoli, carrots.
-Grains: Use whole wheat macaroni, brown rice, and whole barley.

DRINKS.
Give your child 2 glasses of low fat or skim milk a day. Give 4-6 glasses of juice or water a day.

SNACKS.
Fruits, celery with peanut butter, nuts, sunflower seeds, raw carrots, dipped in salad dressing. If you bake, add bran to your batter.

HINTS.
If your child eats these foods, but still has hard stool or watery stools, talk to your nurse about giving extra fiber. If your child often has hard stools, limit cheese, whole milk, and bananas.
Younger child may get a milk-shake, which consist of milk, orange and/or other high fiber fruit and table sugar mixed in a blender.

A SAMPLE MENU

MENU	**Grams of Fiber**
BREAKFAST: ½ Grapefruit	0.3
½ Cup High Fiber Cereal	10.0
1 Cup Low Fat Milk	0.4
LUNCH: Sandwich: 2-3oz. Sliced Turkey	
Lettuce & Tomato	0.5
Whole Grain Bread	0.8
Mayonnaise	
Oatmeal Cookie	0.1
Beverage or Water or Low Fat Milk	
DINNER: 2-3 oz. Sliced Lean Roast Beef	
Baked Potato With Skin	0.5
½ Cup Steamed Broccoli	1.0
Tossed Salad/Dressing	0.4
Whole Grain Dinner Roll/Margarine	0.4
Fresh Pear With Skin	4.1
Beverage or Water	
SNACK: Fresh Apple With Skin	2.9
Ryekrisp Crackers (12)	3.2
Crunchy Peanut Butter (2 tablespoons)	0.6
Beverage or Water	
TOTAL FIBER	**25**

OVER THE COUNTER DIETARY FIBER SUPPLEMENTS

We encourage you to provide dietary fiber to your child through the diet and not by fiber supplements. However, there are circumstances when it is not possible and you may need to use supplements. This table shows some of generally available fiber supplements.

	Active ingredient	Dose	How to use?
CITRUCEL	Methylcellulose	2g/tablespoon **powder** 0.5g/**caplet**	Take one tablespoon with 8 oz fluid Take 2 caplets with 8 oz. of fluid
METAMUCIL	Psyllium husk from Plantago ovata	**Original powder**: 3 g/ tablespoon; **Smooth texture powder:** 3 g/rounded teaspoon **Wafer:** 3 grams (**It contains gluten**!) **Capsule**: 3grams/6 capsules (Gluten-free)	Dissolve one tablespoon in 8 oz fluid. Drink 8 oz of liquid with the wafers and capsules
BENEFIBER	Guar gum from cluster bean	4g/tablespoon **powder** 1g/chewable **tablet**	Take 1 tablespoon with 4 oz of fluid (not with carbonated beverages!!) Max. 15 tablets/day
FIBERCLEAR	Resistant maltodextrin from corn starch	3g/ rounded **teaspoon**	In non-carbonated drinks, apple sauce, yoghurt etc.
FIBERCON	Calcium polycarbophil	0.5g /**caplet** (+0,122g of Ca++)	Take with 8 oz. of fluid

A METHOD TO ACHIEVE A REGULAR STOOLING PATTERN

Your child needs to be ***allowed <u>to go to the toilet any time</u>*** he/she has the urge to go. We can provide letters to school requesting free access to the bathroom.

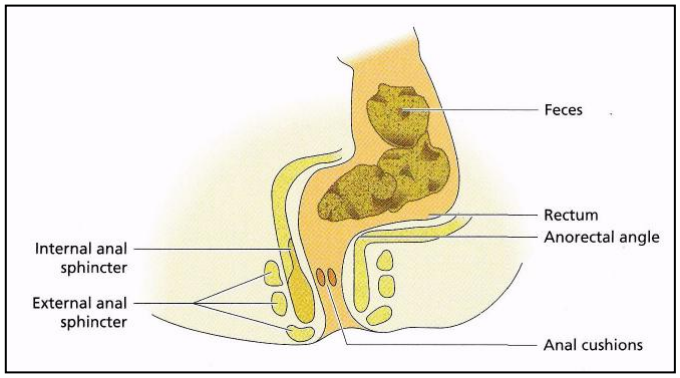
However, since stretching of the intestine by retained stool reduces its sensation *(see figures below) your* child **<u>must also sit on the toilet at regular times</u>** even if no urge is present. The **best time** for this is **after the main meals**, when the intestines are stimulated. **<u>After main meals</u>**, especially after breakfast, is the best time for this "toileting practice" or "sit", because a full stomach makes most people feel the need to have a bowel movement.

A **<u>large hot drink</u>** may increase this feeling.

You should send your child to the bathroom **<u>within 10 minutes</u>** after mean meal(s) (breakfast, lunch or dinner) and he/she should try to pass stool **for <u>5 (maximum 10) minutes</u>**. If he/she does not have bowel movement **do not force it.**

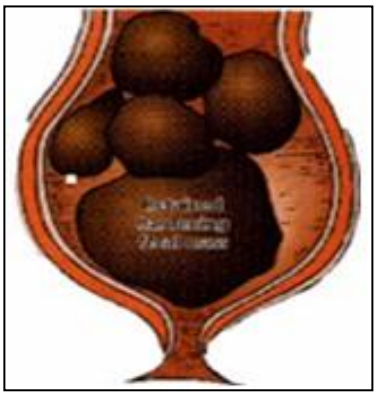
Place a box or stool under the feet of smaller children to raise their knees higher than their hips. The best position for a bowel movement is with the child's bottom sinking into the toilet-- as long as the child does not feel he is falling! Very small children may feel safer if they face backwards on the toilet, or use a potty chair.

If your child is not potty trained yet, make no attempt at toilet training for now. The goal now is to keep the intestine empty so that it will shrink back down and regain muscle tone and sensation.



NORMAL

The stool moves down and stretches the end of the Large intestine and it results in the feeling of urge.



IMPACTION

If the end is constantly stretched out by stool the normal feeling of urge can be lost.

<u>How do I know if the treatment is working?</u>

Every day, ***keep a written record of bowel movements and the use of medicines.*** This record will help you and your doctor figure out if the treatment is working. Your child should have daily bowel movements while taking laxatives. ***Large, hard bowel movements, soiling***, or abdominal bloating and pain usually mean that your child needs to take larger amount of laxative.

What's the final step of treatment?

After the retraining phase, based on your physician's instruction you can ***<u>slowly reduce the dose</u>*** of stool softener/laxative your child is taking, cutting the dose down a little every week or slower (every 2-4 weeks).