

# The urological system and continence control issues in spina bifida

## Chapter 6: Controlling faecal incontinence (including constipation and bowel dysfunction)

*Spina bifida may affect faecal continence in many ways. An understanding of the issues can assist general practitioners in supporting their patients through the process of learning to effectively manage faecal incontinence in conjunction with specialist centres.*

### Key issues for clinicians

- Faecal incontinence is a major source of poor quality of life for young people and adults with spina bifida.
- An understanding of the special faecal incontinence issues for people with spina bifida is necessary for successful incontinence management.
- Faecal incontinence control is best managed in conjunction with a specialist spina bifida clinic.
- Dietary management can help some people successfully manage diarrhoea, constipation and incontinence.
- Constipation should never be left untreated for longer than two days.
- Medication is useful for softening and loosening stools.
- Clinicians need to familiarise themselves with incontinence appliances such as anal plugs.
- Surgical procedures are an important method of incontinence control.

Faecal incontinence — a major barrier to independence

Achieving and maintaining bowel continence is one of the most difficult challenges for people with spina bifida. Successful control of faecal incontinence is a key barrier that needs to be overcome in order to achieve full independence and free participation in activities of daily living. In addition, faecal incontinence has a major impact on issues of self esteem.

### Reviewing bowel training and timing

Young people and adults with spina bifida visiting their GP will have already established their bowel habits, although some may not be benefiting from more recent developments in surgery and appliances. The GP's role will then be to review bowel training and timing techniques, and to ensure that the patient has full access to the latest management developments.

### Special issues — physical and behavioural

Bowel training is usually started in childhood, but may become more difficult in the adolescent years. Growth may affect the nerves to the anus and rectum, causing a change in bowel habits and an increased risk of incontinence.

In addition, as adolescence marks a time of increasing independence, sense of invulnerability, experimentation and rebellion, many young people may pay less attention to health maintenance issues.

### The role of GPs and specialist clinics

General practitioners managing adults and young people with spina bifida should assess faecal continence as part of any routine review. An awareness of factors that can cause intermittent problems may help the GP manage simple continence problems, but continuing incontinence should be referred to specialist clinics.

In addition, many adult patients may have lost ongoing contact with specialist treatment clinics and may not be aware of advances in the treatment of faecal

incontinence. By referring to specialist clinics, GPs can ensure that patients can benefit from latest management techniques.

### Faecal incontinence control<sup>1-2</sup>

Spina bifida related nerve damage has a major impact on the ability to maintain faecal continence. While clinicians will be familiar with the general principles of incontinence management, the presence of spina bifida adds another set of issues that need to be addressed. The following is a list of areas that clinicians need to consider when assessing faecal incontinence.

#### Level of lesion

The presence of thoracic level spina bifida involvement may increase the difficulty in bearing down during defaecation, while patients with sacral lesions may have more difficulty obtaining appropriate and dependable stool consistency.

#### Stool consistency and frequency

Assessing the consistency and frequency of stools allows the clinician to formulate an appropriate management plan.

Constipation can occur very quickly in spina bifida, which can exacerbate incontinence. Poor diet and lack of exercise are common contributory factors. While young children may not eat foods that promote stool formation, dietary intervention can help some young people and adults prevent constipation. Medications to assist bladder relaxation may cause constipation. Constipation can also increase the risk of urinary tract infections.

Long term constipation requires long term treatment. When the bowel is overstretched from chronic constipation, faeces will reaccumulate quickly after treatment. Untreated constipation can lead to a toxic megacolon. After continuous treatment, the bowel may return to its normal size and if diet is adequate, the stool will return to its normal consistency. The length of treatment time depends upon how long the constipation has been present.

Constipation should never be left untreated for longer than two days.

Diarrhoea can make the practical management of incontinence difficult, as well as increasing the risk of soiling.

#### Diet and meal times

Fluid and fibre intake influence stool consistency and frequency. In addition, eating can stimulate bowel

function and timing bowel emptying after meals can facilitate incontinence control.

#### Anal and rectal canal

Moderate to severe neurological involvement in spina bifida can prevent the anus from fully closing. Nerve damage may cause a very lax anus resulting in a loss of ability to retain stools, especially during periods of heavy physical activity, such as swimming.

The presence of redundant tissue in the rectal canal may make correct insertion of a suppository more difficult.

#### Altered sensation from nerve damage

There may also be a reduced or absent rectal sensation, causing difficulty in recognising when the rectum is full or when bearing down occurs. This difficulty in detecting sensation changes may be greater when the person is busy or distracted, increasing the risk of soiling. Patients need to be encouraged to go to the toilet as soon as they feel the need, before any distraction can occur.

#### Difficulty detecting soiling

Some people will also have difficulties with genital skin sensation that may affect their ability to feel when their skin is wet after soiling. In addition, altered smell sensation may make it difficult to detect when soiling has occurred.

#### Slower bowel development

The bowels of children with spina bifida can be slow to develop. Some children may be as old as nine years before the bowel is mature. This may mean many years of faecal incontinence.

#### Mobility, activity and temperature changes

Increased physical activity and changes in temperature can cause the bowels to relax and empty, such as when having a bath or when swimming.

#### Medications

Anaesthesia and medications can cause constipation. Anticholinergic medications used for bladder incontinence control can also cause constipation. Antibiotics, often for urinary tract infections, may cause diarrhoea and increase the risk of faecal incontinence. Where indicated, the prophylactic use of probiotic yoghurt and increasing fibre intake may help to minimise these effects.

#### Intercurrent exacerbating factors

Lifestyle factors and life events may also cause changes in bowel habits. Common exacerbating factors include:

**Table 8. Foods frequently associated with causing loose stools and faecal incontinence<sup>3</sup>**

- Citrus fruit, fruit juice, passionfruit, pineapple
- Corn (fresh or tinned)
- Baked beans
- Chocolate/malt/chocolate powders used to flavour milks
- Nuts/dried fruit.

- holidays
- disruption in usual daily routines
- a change in water, such as when travelling
- intercurrent illness, especially febrile illness
- anxiety, especially at school or at work
- hospital procedures or operations
- changes to family structure such as a new birth, separation, death of a relative, or
- starting a new school or job.

Effective continence control is best achieved within the context of a specialist clinic.

#### Access to facilities and aids

Difficulty in access to bathrooms, toilets at home, in educational institutions and the workplace can increase incontinence control problems. In addition, there may be difficulty in transferring to toilets if the person is in a wheelchair.

#### Overview of conservative management of faecal incontinence

##### Finding the balance — the role of the specialist clinic

As every patient is different, effective bowel control regimens need to be tailored to the needs of each individual.

Effective continence control is best achieved within the context of a specialist clinic. However, clinicians need to be aware of the general management principles and interventions used for faecal incontinence control.

Diet, fluids, diarrhoea and constipation<sup>2,3</sup>

While a healthy diet for people of all ages is a general health principle, diet can be used effectively by some

**Table 9. Dietary control of stool consistency — foods that soften stools<sup>3</sup>**

Food Group	Reduce	Increase
Bread/cereals	Highly refined (white) breads, biscuits	High fibre breads and natural whole grain cereal, eg. bran, oatmeal, rice, muesli
Vegetables/fruit	Tinned fruits, juice with high sugar content	Fresh, raw vegetables, raw fruit, sugar free juices
Meat/fish, poultry	Lean cuts such as veal, chicken, whiting	Fatty cuts (mince, sausage, mullet, tuna, mackerel)
Cheese/eggs		Matured or processed cheeses, yoghurt
Beverages	Soft drinks, cordials, skim milk.	Whole milk
Miscellaneous	Plain sugar, syrups, jellies, sweets	Herbs and spices, nuts, pizza, muesli bars, chocolate

people to alter stool consistency and frequency in order to facilitate bowel control.

Dietary control of stool consistency is not achievable by everyone, but some patients can benefit significantly if given appropriate information. Carers involved in food preparation may also benefit from dietary information.

Certain foods can cause diarrhoea, which may exacerbate soiling (*Table 8*). Also, stools can be softened by increasing foods high in fat, fibre and moderate in sugar intake (*Table 9*). Water intake should also be increased. Conversely, these foods should be decreased when trying to harden stools (*Table 10*).

##### Drug control of stool consistency<sup>2</sup>

Drugs can be used to control stool consistency, but should only be used for a limited period of time, as long term use of some drugs may have a deleterious effect on bowel function and increase the risk of drug interactions. Bulk forming agents, however, are not associated with long term adverse effects.

In general, expert advice should be consulted prior to initiating drugs to control stool consistency, especially in children. Also, some drugs, especially adsorbents, may interfere with the absorption of other drugs. Commonly used drugs are listed in *Table 11*.

## Bowel emptying — overview of methods and techniques

There are many techniques and methods for emptying bowels ranging from normal toileting to sophisticated surgical techniques.

Most young people and adults with spina bifida presenting to their GP will have had extensive toileting program experience. The aim of the following overview is to familiarise clinicians with the principles of commonly used techniques in controlling faecal incontinence.

The prescription of individual bowel programs is best done within the context of a specialist spina bifida clinic. General practitioners should not hesitate to refer patients to these clinics if they detect continuing problems with incontinence.

### Behavioural training

Effective bowel control involves creating a system for bowel emptying at regular intervals, at least every 24 hours. Due to the lack of rectal sensation common in spina bifida, developing a daily routine ensures regular evacuation. For example, associating the timing of bowel emptying with meals, baths, physical activities, particular times of day, helps establish predictable continence patterns. This will depend upon the person's physical, cognitive and functional level. Behavioural training will be more successful if lower motor function is intact.

When establishing new bowel emptying patterns, daily reinforcement of any bowel procedures with the assistance of regular home nursing visits, where available, can greatly expedite the adoption of new interventions.

### Anal/rectal stimulation

Weakened nerves can sometimes be stimulated by wiping the anus firmly with toilet paper as soon as the person sits. If the stool is not being expelled, slight pressure can be applied with fingers to each side of the anus to replace the natural lift of the anus, lost due to neurological damage. Similarly, there are other techniques that can be learned to improve bowel emptying.

Digital stimulation involves inserting a gloved finger into the anal canal and internal sphincter, and massaging the mucosal wall to stimulate a contraction to eliminate a stool. This is more effective in the presence of lower motor neurons.

### Suppositories and microenemas

Microenemas and suppositories can be used to establish timed bowel actions and treat constipation. Microenemas

**Table 10. Dietary control of stool consistency — foods that harden stools<sup>3</sup>**

Food group	Reduce	Increase
Bread/cereals	High fibre breads and natural whole grain cereals eg bran, oatmeal, rice, muesli	Highly refined (white) breads, biscuits
Vegetables/fruit	Fresh fruits and vegetables, fruit juice.	Cooked vegetables with low fibre such as potatoes, pumpkins, carrots. Tinned fruits in small amounts
Meat/fish, poultry	Fatty cuts (mince, sausage, mullet, tuna, mackerel)	Lean meats such as veal, chicken, whiting
Cheese/eggs	Whole milk cheeses, fried eggs.	Cottage cheese, boiled or poached eggs.
Beverages	Whole milk, cream	Skim or low fat milk
Miscellaneous	Herbs, spices, pizza; minimise oil, butter and margarine	Honey, jelly

**Table 11. Commonly used drugs to control stool consistency<sup>2,3</sup>**

Laxatives	Bulk forming agents	Stool softeners	Drugs that harden stools
Milk of magnesia, Agarol	Normacol Parachoc	Parrafin (Paralax, Methylcellulose,	<i>General absorbents</i>
Lactulose (Duphalac, Actilax)	Psyllium or ispaghula husk (Metamucil or Fibogel)	Poloxalkol (Coloxyl drops)	Kaolin, pectin, cholestyramine
		Diocetyl Na sulphosuccinate (Coloxyl tablets)	<i>Agents altering motility</i>
			Codeine, lomotil (not recommended in children), loperamide

and suppositories can also fully empty the bowel, allowing a longer period between evacuation.

Patients and carers need to learn correct techniques, which can be taught in the specialist treatment clinic.

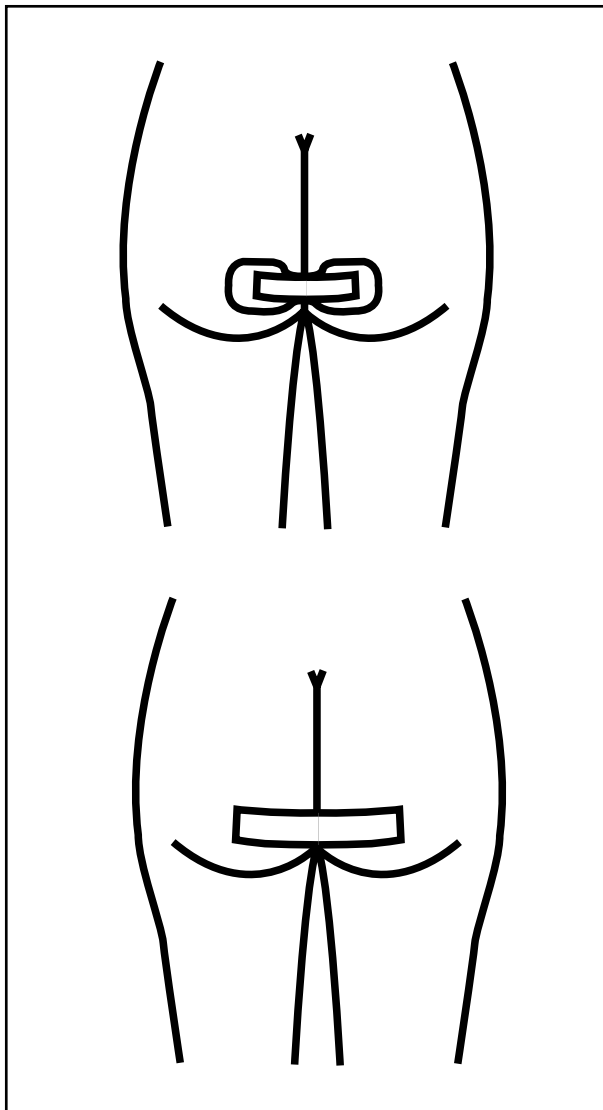


Figure 6. Buttock strapping

#### Strapping buttocks: procedure

- The tape is applied low on the buttocks to be under the person when they sit down.
- Cut the appropriate length of tape
- Look for the position of the anus
- Attach tape to one buttock. While holding buttocks together, attach the other end of the tape to the other buttock, ensuring that the tape passes over the anus.
- If the skin is sensitive, place some nonallergenic tape on each buttock. Stronger tape can then be applied on top of the nonallergenic tape.
- If the anus is very lax, a small piece of paper, such as half a piece of toilet paper, can be folded and placed over the anus. Females should check that the tape has not slipped down into the vagina.

#### Large volume fluid enemas<sup>4</sup>

If other methods have failed, large volume enemas also called colonic washouts, may be required to treat constipation. The amount and type of fluid is determined by the specialist clinic, but may include solutions of saline; water; soap and water; or other solutions. The enema is administered by using a 30 mL balloon catheter and a large syringe. These are available in specially designed colonic washout sets such as the Willis Washout System. Care must be taken not to use rubber catheters in those with latex allergies.

The volume of fluid required for the enema may increase the pressure on an already overstretched bowel, and there is an increased risk of soiling.

Enemas will clean the bowel for 2–3 days. While many patients find enemas a manageable way to control bowel emptying, large volume enemas may be difficult or virtually impossible for a person with limited mobility and can contribute to dependency.

#### Buttock strapping

This method can be used when prevention of soiling is important, but will not work when the stools are soft, or when there is diarrhoea. Strapping can be used when swimming, on special outings or as a regular approach to faecal incontinence (Figure 6).

Strapping should be removed from the buttocks when it is the regular time to empty the bowels or when the person feels the need to empty their bowels.

Try different types of tapes to ensure they are waterproof or that no adverse reactions occur. Typically used tapes include elastic adhesive tapes, nonallergenic tapes, waterproof adhesive tape and electrician's tape.

#### Anal plugs

Anal plugs are an important continence management tool and offer real independence for some people with spina bifida. The anal plug, made from foam, is lubricated with Vaseline and inserted into the anus. After coming into contact with the moisture of the bowel, it expands in about 30 seconds to form a mushroom like shape that prevents rectal leakage. The anal plug is made from slightly porous material so that air can pass through the plug. The plug is removed with an attached string, and is changed after each toilet visit. Removal of the plug does not stimulate the rectal muscles, and thus the plug may be removed slowly. The anal plug can be worn safely for up to 12 hours. Combined with diet and bowel regimens, anal plugs have significantly changed the lives of many people with spina bifida by increasing their independence.

**Case study: Peter is 21 years and has faecal incontinence**

Peter has ongoing faecal incontinence. He is a community walker with ankle-foot orthosis and the incontinence interferes significantly with his active lifestyle. The problem has also caused a lack of confidence, causing him to quit two jobs and he remains house-bound because of frequent bowel accidents. Microenemas, routine training and diet management have not been fully successful. Anal plugs pop out. He uses large volume washouts every two days or so and manual evacuation, both of which he needs assistance with. After a Malone procedure he is able to much more confidently self administer the enema, which seems to be working reliably. As a result, Peter is slowly becoming more outward looking.

**Surgical procedures**

When bowel emptying and faecal incontinence is not successfully controlled with the aforementioned methods, surgical procedures may be indicated. These procedures are only used after other more conservative methods have failed. Many patients express high degrees of satisfaction after this procedure is performed.<sup>5-7</sup>

These procedures are sometimes performed concomitantly with other urological surgical procedures.

**Malone procedure and antegrade colonic enemas**

The Malone procedure — also called continent appendicostomy — is used for the management of faecal incontinence and involves bringing the appendix to the surface of the skin and creating a stoma. Like similar procedures, the Malone procedure provides access to the proximal colon for the administration of enemas called antegrade colonic enemas (ACE). There is no unpleasant smell as the bowel contents are sterile at the level of the appendix. The stoma can be left in place longterm if necessary.

A major advantage of the Malone procedure is the ease of self administration, especially in people with poor mobility when compared to the more usual retrograde washouts.

One potential disadvantage of the Malone procedure is that the appendix is then unavailable to use when constructing catheterisable stomas, such as in the Mitrofanoff procedure (see *Chapter 5 Controlling urinary incontinence*, p.92).

**Caecostomy catheters<sup>8,9</sup>**

A caecostomy catheter is a nonlatex, flexible tube that is inserted into the patient's caecum through the skin in the right iliac fossa, providing a comfortable, convenient way

to irrigate and empty the bowels with an enema solution. The enema is given through the tube and the faeces exits through the anus.

Caecostomy tubes can improve independence in those who experience faecal incontinence with troublesome soiling and in those patients that do not respond well to rectal enemas or other methods. For example, they may be unable to perform retrograde bowel washouts. Caecostomy tubes offer a chance for independence in patients who may have previously run out of treatment options.

The caecostomy tube is placed in a two part process. Firstly, a temporary tube is inserted into the caecum, which is followed about six weeks later by a long term tube, which is much less visible than the temporary tube.

There is a choice of washout fluids and many patients find that optimal function is achieved by varying the composition of these fluids. This is best discussed with a specialist continence clinic.

The caecostomy catheter provides a regular, predictable method for defaecation and, due to its position, can be used independently by wheelchair dependent people. Many people who previously wore pads are able to wear regular underwear after a caecostomy tube.

Caecostomy catheters may not be suitable in people who have had previous abdominal procedures.

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