



## Clinical assessment, Investigation and Surgical Management of Faecal Incontinence and Functional Constipation

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**F**aecal incontinence and functional constipation are two common clinical problems with both physical and psychological impacts on patients. Good clinical assessment and related investigation can help decision in management of these issues.

Faecal incontinence is defined as involuntary passage of rectal contents through the anal canal with the inability to postpone the evacuation until socially convenient. The main symptoms include the severity (content), duration and frequency of incontinence episodes. It is also important to know patients' obstetric history, previous history of anorectal or spine surgery, or pelvic irradiation. Associated symptoms like urinary incontinence, rectal prolapse and altered bowel habit will also be important to notice. Patients' quality of daily living is very essential in decision making of treatment modality. Wexner score and Faecal Incontinence Quality of Life score (FIQL) are two common score systems to assess the severity of the problem.

A good abdominal and per-rectal examination will give clues of severity of problem. It can help us rule out other diseases like fistula-in-ano. Length and integrity of anal sphincter complex, strength of resting and squeezing anal tone, presence of anal scar are also essential information to know.

Investigations for faecal incontinence will suggest the severity of the problem, assist in management decision and quantify the improvement after treatment. Anorectal manometry, transanal ultrasound and pudendal nerve terminal motor latency (PNTML) are three most important test in faecal incontinence. Anorectal manometry measures anal pressures, rectal sensation and compliance. Transanal ultrasound delineates integrity of anal sphincter complex. PNTML assesses the transmission time within pudendal nerve from site of stimulus to muscle contraction. Any delay in PNTML suggests pudendal neuropathy.



Pudendal Nerve Terminal Motor Latency Measurement



Apart from life style modification, medication and physiotherapy, surgical management is an option for selected group of patients suffering from faecal incontinence. Selection of surgical treatments is dependent on surgical techniques and risks of individual method. Patients' anticipation of surgical outcomes is also very detrimental because efficacy of treatment will usually worsen along time. Sometimes, re-do surgery may be needed to salvage the condition. For example, overlapping anal sphincter repair, one of common surgical treatment for faecal incontinence, will usually bring a great success rate freshly post-operatively. However, surgical outcomes may deteriorate as time passes. Re-do repair is an option to salvage the condition.

If the sphincter is beyond repair or pudendal neuropathy is evident, artificial bowel sphincter (ABS), a newly invented implant to wrap around the original sphincter complex, is an option of treatment. However, it is contraindicated in infected or severely scarred perineal condition. Also, high surgical infection rate may sometimes require surgical removal of implant.

Sacral nerve stimulation (SNS) was firstly used to treat urinary incontinence. Its application nowadays extends to faecal incontinence. At first stage, a peripheral nerve evaluation is used to find out who is responder to treatment. At the later stage, permanent implantation of stimulator is employed. Though the exact mechanism of how SNS works is not fully understood, it is contraindicated in patients with absent function of bilateral pudendal nerve.

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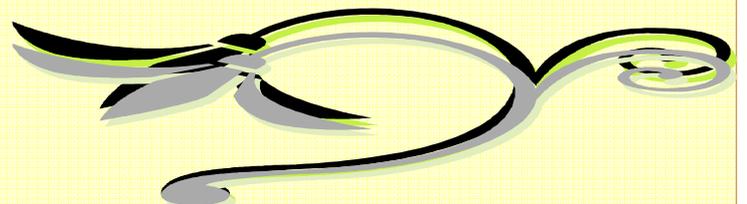
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Injectable implants, radiofrequency are those latest inventions to treat faecal incontinence. Stoma is the last resort in case of refractory conditions.

The usual definition of functional constipation is by Rome III criteria. For us clinician, we need to rule out mechanical cause like colorectal cancer by either lower GI endoscopy or Barium enema. Neurological condition like Hirschsprung's disease should be considered in young adult patients.

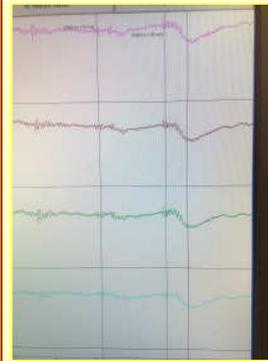
Apart from consistent of stool, frequency and easiness of bowel motion, clinical assessment of functional constipation include age of onset, relevant surgical and medical history, medication used (eg sedatives), amount of diet, fibre and water intake. Bristol stool chart is a easy reference for patients to pick the consistency of their stool passed. Abdominal examination is to look for abdominal distension or palpable mass. Per-rectal examination is to see any anal fissure, increased anal tones, palpable anorectal or pelvic mass, faecal-loaded rectum, and any perineal descent on bearing down.

Causes of functional constipation can be colonic inertia, pelvic outlet obstruction, or a combination of both. Blood test for renal function, calcium level, thyroid function and sugar is mandatory to rule out correctable causes. Anorectal manometry, colonic transit study, defecating proctogram and electromyogram (EMG) are usual investigations for assessment of functional constipation.

Anorectal manometry is used to look for high resting anal pressure, poor rectal sensation and absent recto-anal inhibitory reflex (RAIR). RAIR is a physiological relaxation of internal anal sphincter upon sudden distension of rectum. Absent RAIR may indicate Hirschsprung's disease, Chaga disease of rectum or previous ano-rectal surgery that damages the reflex arc. Colonic transit study is to diagnose constipation due to slow colonic transit. In simple method, patients are asked to ingest a capsule containing multiple radioopaque markers and X-ray will be taken on day 5. If less than 20% markers are inside bowel, normal transit time is diagnosed. In segmental method, patients are asked to ingest one capsule for three consecutive days and segmental transit time of each part of large bowel can be calculated according to a specific formula. Defecating proctogram is used to assess suspected pelvic outlet obstruction. It is used to assess ano-rectal angles, observe pelvic descent on straining, look for structural abnormalities like sigmoidocele, rectocele, rectoanal intussusception. EMG is measured through skin electrodes around perianal region. It is an adjunct to assess for anismus to look for paradoxical electrical activity during pushing maneuver during anorectal manometry test.



*Anorectal Manometry Measurement*



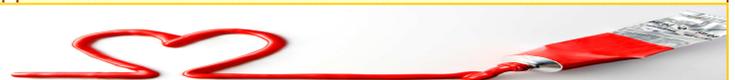
*AIR noticed after balloon inflation*



*Defecating proctogram showing rectocele*

Apart from medical treatment and physiotherapy, role of surgery is reserved to correct any anatomical defects such as rectocele, third degree sigmoidocele. For slow transit constipation, total colectomy should only be applied to selected group of patients who failed non-operative management. Antegrade colonic enema is another treatment of choice for slow transit constipation. Paradoxical puborectalis syndrome describes condition of failure in relaxing puborectalis muscle during evacuation. This condition is best treated with physiotherapy first while botulinum toxin injection is another feasible treatment option. SNS is employed as treatment modality of idiopathic constipation though exact mechanism again is not well known. Stoma is again the last resort for some refractory conditions.

Surgical treatment for faecal incontinence and functional constipation should only be considered if non-operative treatments fail. Correct identification of pathology can guide our treatment options to achieve better outcomes. Detailed interviews with both patients and their relatives are of greatest importance before embarking on any surgical treatment. Patients' expectation should be fully assessed and risk of surgical treatment should be explained clearly in order to obtain optimal treatment outcomes.



# Natural Remedy for Childhood Constipation

By Yvonne Kwok, RN, Department of Surgery, QEH

Constipation is one of the most common bowel disorders affecting children. Childhood constipation is generally attributed to a low fiber diet and insufficient fluid intake. Thus it is important to maintain adequate intake of fiber and fluid every day as their synergistic effect is a natural remedy to prevent and relieve childhood constipation. Dietary fiber keeps the stool soft and bulky by trapping water in the colon resulting in shortening of stool transit time due to improvement of peristalsis. Dietary fiber is classified into soluble and insoluble fibers which are only found in plant foods like fruits, vegetables, grains, nuts and legumes. Soluble fiber dissolves in water but insoluble fiber does not. Most foods contain a mixture of soluble and insoluble fibers with variable fiber content.

## How much daily fiber and fluid do children need?

For children, the American Health Foundation recommends daily intake of fiber is their age in years plus 5 grams. For instance, a 6-year-old child needs 11 grams of fiber per day. It is not difficult to figure out how much daily fiber a child needs. In addition, the quantity of fiber in foods can be derived from the nutrition label found on food packages. Fluid is an indispensable buddy of fiber for keeping the stool soft and bulky but fiber without enough fluid may cause constipation. Thus it is also important to make sure the children have adequate fluid intake. According to the Holliday-Segar method, the recommended daily fluid a child needs is dependent on the body weight. The following table shows the fluid requirement for a child based on Holliday-Segar method.

## Holiday -Segar Method

Body weight (kg)	Baseline daily fluid requirement for a healthy child
0-10 kg	100 ml/kg
11-20 kg	1000 ml + 50 x (BW - 10) ml
Over 20 kg	1500 ml + 20 x (BW - 20) ml

However, the fluid intake requirement may adjust depending on the level of activity, the climate, the fluid content in foods and the child's health condition. For instance, children should drink additional fluid in case of hot weather, doing heavy prolonged exercise, fever, vomiting or diarrhea.

## Tips to satisfy daily requirement of fiber and fluid

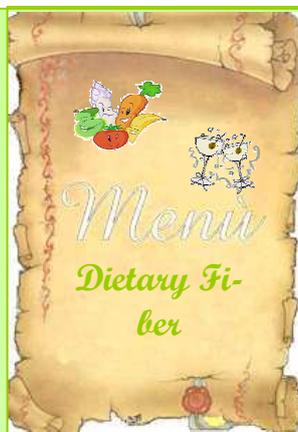
Nowadays, children tend to have a high fat but low fiber diet. Many also display aversive attitudes towards vegetables and fruits. Besides, they usually drink less fluid than their daily requirements. As a result, parents get in a fret when their children reject vegetables and fluid, and hence force them to take more fiber and fluid which in turn may cause more antipathy. To stop this viscous cycle, here are some valuable tips to encourage children to enjoy fiber-rich foods and drinking fluid.

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If the children are hustled off to school, a high fiber breakfast can be prepared in a simple way. For instance, whole wheat bread toast, vegetable sandwich or fruit cereal are the choices. Snacking between main meals is essential to maintain the vitality of children. Fruits, whole grains, vegetables and nuts are the great sources of palatable snacks such as graham crackers with a spread of marmalade, strawberry milkshakes, raw carrots or celery, banana muffins or yoghurt with kiwi fruit and pistachio. Dry fruit is not recommended due to its high sugar content. Constipating foods such as dairy products like milk and cheese or greasy foods should be taken appropriately.

In general, plant foods requiring longer time to chew are rich in fiber such as kale, broccoli and whole wheat bread. Whole grain foods are high in fiber because of their unrefined property but children may not accept their gritty texture. A mixture of regular and whole grain foods is a feasible way to neutralize the unpleasant taste such as put a pinch of brown rice in white rice or use half whole-wheat and half refined flour to make the dough when baking breads. A tasty way to get plenty of fiber and fluid is to make legume or vegetable soup such as tomato, cauliflower, artichokes, pea or pumpkin soup.





The most fibrous part of the plants is skin, hence it is better to leave the edible skins on fruits, gourds, legumes and vegetables but wash them thoroughly before eating. Children are more likely to spit out too hard or large foods like fruit peel or stalk of vegetable due to lack of molar for chewing and grinding food properly. Therefore, foods should be cut to the appropriate size for the age of children. They also dislike the bitter taste of some vegetables, gourds or fruits. Spices and seasoning such as ginger, coriander, peppercorn, chicken powder and sesame oil can effectively dispel the unsavory taste. The trick of making children appreciate foods and drinks and eat them all up is to involve them in making the dishes and make foods or drinks look much more delicious. Adding some colorful vegetables or fruits with little funny pictures to the dishes and using different cooking methods such as braising, baking, grilling, sautéing are the practical ways to increase the appetite of children. Sprinkling a bit of different colored flavor such as coca powder or caramel on top of drinks is attractive. Another easy way to encourage children to devour their meals is using tableware with their favorite patterns and prints.

The most recommended drink is water but children always prefer sugary beverages over water due to its tasteless. Adding honey or a few slices of fruit like lemons, limes or strawberry to the water may make children gulp down the flavored water. It is a good practice to keep a bottle of water nearby and drink it slowly throughout the day. Fruits like orange, pear and watermelon are good choices for making juice, try to drink the juice and eat the pulp as well. Milk is a common drink for children but excessive milk may cause constipation. Soy milk is a substitute if children drink a lot of milk. Children should not rely on drinks with caffeine like coffee, tea or coke for hydration due to its diuretic effect. In addition, avoidance of drinking fluid in the late evening is unnecessary but children should visit the toilet before bed.

In conclusion, a high fiber diet combined by plenty of fluids is a natural laxative to prevent and relieve childhood constipation. However, it is not easy to satisfy the daily requirement of dietary fiber and fluid because most children are picky eaters. While it is fundamental to include fruits, vegetables, nuts, legumes and whole grain foods in their daily meals to promote gut motility, creativity is equally important to promote their appetites for fiber and fluid. Foods and drinks with diversified color, savory smell and delectable taste can greatly arouse the appetite of children.

**Sponsorship Application for  
the 42nd Annual Meeting of the International Continence Society  
(Beijing, China, October 15-19, 2012)**

The Hong Kong Continence Society will sponsor maximum 15 members to attend the captioned meeting. Each sponsor will be HK\$6,000 for passive participation or HK\$8,000 for active participation (i.e. having a paper accepted for presentation).

The application is now opened to all members with at least 2 recent consecutive years of membership (i.e. 2011 & 2012 memberships). If you are interested to attend the meeting, you are welcome to apply for the sponsorship by filling in the application form and e-mail to Ms. M.C. Lam at [lammc@ha.org.hk](mailto:lammc@ha.org.hk) or mail to the following address:

Ms. M.C. Lam, Honorary Secretary, Hong Kong Continence Society

N.O. Department of Geriatrics, TWGHs Fung Yiu King Hospital, 9 Sandy Bay Road, Pokfulam, H.K.

Deadline of application: 31 July 2012.

***Selection Criteria for Sponsorship:***

*Applicant must be current member of the society with at least 2 recent consecutive years of membership*

*(i.e. 2010 & 2011 memberships).*

*Seniority of membership (number of years as HKCS member).*

*Participation in the conference (e.g. paper presentation, moderator, etc.)*

*Contribution to the Hong Kong Continence Society.*

*Relevance of the professional expertise of the applicant.*

*Contribution to continence care in Hong Kong.*

Applicant will be notified the result by end of August. The sponsorship is normally reimbursed to the successful applicants after the meeting with the provision of Attendance Certificate. Successful applicants cannot accept other source of sponsorship for the same meeting. Successful applicants who are HA staff should approach their cluster HRD for the HA rules & regulations on accepting external sponsor.

**Announcement**



**ALERT!**

<p><b>1. Male Urinary Incontinence: Anatomy, physiology and pathology of the anorectal and the male urinary tract and surgical interventions for male urinary incontinence</b> Dr. John Fenn</p>	<p>Consultant Urologist (Private)</p>
<p><b>2. Faecal Incontinence: Anatomy, physiology and pathology of faecal incontinence; Investigation and management of constipation and faecal incontinence</b> Dr. Luk, Lai Yin</p>	<p>Associate Consultant, QEH</p>
<p><b>3. The Geriatric Approach for Urinary Incontinence</b> Dr. Tong Bing Chung</p>	<p>Senior Medical Officer, PMH</p>
<p><b>4. Occupational Therapy for Urinary Incontinence</b> Ms. Peggy Hui</p>	<p>Occupational Therapist, UCH</p>
<p><b>5. Paediatric Incontinence: Epidemiology of urinary incontinence in Children; Nocturnal enuresis; ICCS classification</b> Dr. Michael Leung</p>	<p>Consultant, Paediatric Surgery, QEH</p>
<p><b>6. Nursing Management: Nursing assessment and mgt of incontinence in children</b> Ms. Ng Wai Hing</p>	<p>RN, QEH</p>
<p><b><u>Female Incontinence and Pelvic Organ Prolapse (POP)</u></b></p>	
<p><b>7. Surgical Treatment on Stress Urinary Incontinence and POP</b> Dr. Cecilia Cheon</p>	<p>Consultant, Dept of O &amp; G, QEH</p>
<p><b>8. Nursing Management on Stress Urinary Incontinence and POP</b> Ms. Anny Tong</p>	<p>APN, Dept of O &amp; G, QEH</p>
<p><b><u>Investigations and Nursing Management</u></b></p>	
<p><b>9. Investigations of Urinary Incontinence: Application of Bladder Scan and other nursing assessment; Urodynamic Study</b> Ms. Chan Sau Kuen</p>	<p>NC (Continence Care), UCH</p>
<p><b>10. Nursing Interventions in Urinary Incontinence: Bladder training; Intermittent Catheterization; Skin care</b> Ms. Lam Mo Ching</p>	<p>NO, FYKH</p>
<p><b><u>Physical Therapy in Incontinence</u></b></p>	
<p><b>11. Pelvic Floor Rehabilitation for Incontinence</b> Ms. Mary Leung</p>	<p>Physiotherapist, KWH</p>
<p><b>12. Functional Rehabilitation for Incontinence</b> Ms. Regina Leung</p>	<p>Physiotherapist, KWH</p>

## **2nd Certificate Course in Assessment and Management of Incontinence 2012**

**ALERT!**

**ALERT!**

**Attention!**

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**ALERT!**

**ALERT!**



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2012



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