W19: Special Concerns in Continence Awareness: A Continence Promotion Committee Initiative (Free Workshop)

Workshop Chair: Tamara Dickinson, United States

27 August 2013 09:00 - 12:00

Start	End	Topic	Speakers
09:00	09:20	The History of Advocacy in Continence Awareness	• Barry Cahill
09:20	09:40	A Worldwide Phenomena: Aging and Incontinence	• Diane Newman
09:40	10:00	Incontinence, Enuresis, Dysuria and Encopresis: Could the Pelvic Floor be the link?	• Elisabeth Bakker
10:00	10:20	Continence and Disabled Persons: Where management and quality of life meet	• Tamara Dickinson
10:20	10:30	Discussion	All
10:30	11:00	Break	None
11:00	11:30	The Global Perspective: Continence Awareness and Developing Countries	• Sherif Mourad
11:30	12:00	Discussion	All

Aims of course/workshop

As a Continence Promotion Committee initiative this workshop will focus on continence promotion and awareness related to special populations and their struggle to maintain their health and well-being. It will also address struggles in developing successful programs and the global issues and concerns faced.

Barry Cahill, CEO Continence Foundation of Australia (CFA)

The History of Advocacy in Continence Awareness

Special Concerns in Continence Awareness: A Continence Promotion Committee Initiative

Advocacy

A process by an individual or group aims to influence public-policy and resource allocation decisions within political, economic, and social systems.

Advocacy

Activities that a person or organisation may undertake include:

- media campaigns
- public speaking
- commissioning and publishing research
- submission of position statements
- lobbying
- direct approach to legislators on an a particular issue
- social media

Forms of Advocacy

The approach to advocacy takes various forms:

- social justice advocacy demonstrated through a series of actions as part of a strategy or vision to change the way things are into the way it should be.
- through effective health advocacy strategies (including mass and social media) the CFA advocates and promotes healthcare rights, and
- project initiatives focusing on service availability, safety and quality of care.

Effective Advocacy

- Maintain a focus
- Mission statement
- Guiding principles
- Operational plan

Continence Foundation of Australia

- Established 1989
- National peak body for people affected by incontinence and their carers
- Membership – 1,300

Our main aims are:

- Raise awareness about bladder and bowel health
- Encourage people to seek help
- Educate professionals to diagnose and treat incontinence within their scope of practice

The Bladder Bowel Collaborative

- Managed by the Continence Foundation of Australia (CFA)
- Supported by the Australian Government Department of Health and Ageing (DoHA) under the National Continence Program (NCP)
- Funded from 1 January 2011 to 30 June 2014

The Bladder Bowel Collaborative

Deliverables

- Administration and reporting
- Partnerships and collaboration
- Marketing and communications
- Health promotion
- Information and advice
- Workforce support
- Quality assurance

The Bladder Bowel Collaborative

Partnerships and collaboration

Key stakeholders reflected on BBC steering committee representing

- consumer
- professional
- industry groups

The Bladder Bowel Collaborative

Marketing and Communications

- Annual Marketing and Communications Plan
- National articles program
- Advertising – TV, radio and print
- Bridge – consumer magazine
- Website
- Media monitors

The Bladder Bowel Collaborative

Health promotion

- World Continence Week activity
- Indigenous resource review
- Health Promotion Officers (5 states)
- Conference, expos and consumer and health professional forums

The Bladder Bowel Collaborative

Health promotion

- Special projects
  - ✓ *Pelvic Floor First*
  - ✓ *Schools project (Toilet Tactics Kit)*
  - ✓ *Outreach into Culturally and Linguistically Diverse (CALD) Communities*
  - ✓ *Maternity (2013-2014)*

The Bladder Bowel Collaborative

Information and advice

National Continence Helpline

44% seeking help for continence issue/s and its treatment/management

34% seeking information for financial assistance

12% requesting continence resources

5.8% seeking paediatric help

4% other reasons

The Bladder Bowel Collaborative

National Continence Helpline

The Bladder Bowel Collaborative

Workforce support

- Scholarship program
  - Conference attendance
  - Graduate Certificate courses
  - Accredited training – 1 day (18 per year)

The Bladder Bowel Collaborative

Workforce support (cont)

- *Everybody's Business* (EBB) workshops
- On line education
- Paediatric Continence Education
- Australian Continence Exchange (ACE)
- Australian and New Zealand Continence Journal

The Bladder Bowel Collaborative

TV Community Service announcement

For further information

www.continence.org.au

Thank you

A Worldwide Phenomena: Aging and Incontinence

Diane K. Newman, DNP, ANP-BC, FAAN

Adjunct Associate Professor of Urology in Surgery
Research Investigator Senior, Perelman School of Medicine
Philadelphia, Pennsylvania

Co-Director, Penn Center for Continence and Pelvic Health
Division of Urology, University of Pennsylvania Health System

International Continence Society, Barcelona, August 27, 2013, 9AM-12Noon, Workshop 19

Definitions

Urinary Incontinence (UI): The involuntary loss of urine

Fecal Incontinence (FI): The involuntary loss of solid or liquid stool

Urinary Incontinence

"a widespread global disease and one of the last medical taboos for many people"

World Health Organization

2008: 348 million people worldwide experienced any type of UI

2018: Projected to increase to 423 million

Demographic Imperatives

- Elderly currently comprise 13% of the total US population
- Predicted to reach 20%+ by 2030
- Graying of the baby boom generation
  - 2012 – 10,000 people / day will turn 65+
- Worldwide phenomenon

USA Census Bureau - 2010

International Consultation on Incontinence 2013

Milsom, Altman, Cartwright, Lapitan, Nelson, Sillen, Tikkinen. The Epidemiology of Lower Urinary Tract Symptoms (LUTS), Faecal incontinence (FI) and Pelvic Organ Prolapse (POP). In Abrams P, Cardozo L, Khoury S, Wein A (Eds.): *Incontinence: Proceedings from the 5th International Consultation on Incontinence*. Plymouth UK: Health Publications, 15-107.

Urinary Incontinence

- Large variation in the estimated prevalence of UI even after talking into account differences in definitions, ascertainment techniques and demographic characteristics
  - Women (any UI or at least once last 12 months) 5-69%
  - Men 1-39%
    - Twice as common in women than men

Urinary Incontinence

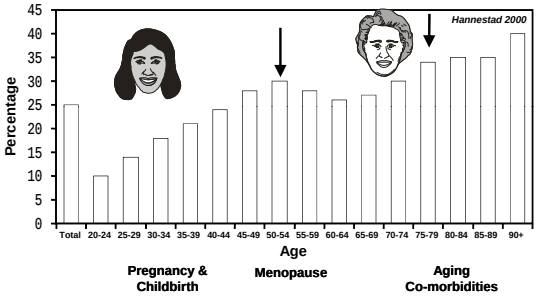
- Recent prospective studies have provided much needed data on the incidence of new UI and the natural history (progression, regression and resolution) of UI
- Data from Twin studies suggests that there is a substantial genetic component to UI, especially stress urinary incontinence (SUI)

Estimated prevalence of UI in middle-aged and older women in the general population

- Range of 30% to 60% (increasing with age)
- Daily UI ranges from 5% to 15%
- Rises to over 15% in women over age 70 who are institutionalized.
- Large variation remains

Prevalence of UI in Community-Dwelling Women by Age

(N=27,936; Norway)

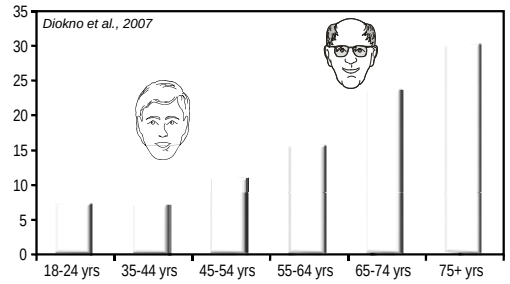


Multiple observational studies

- White, non-Hispanic women have a substantially higher prevalence of stress UI than Black or Asian women
- Not understood

Estimated prevalence of UI in men in the general population

- The epidemiology of UI in men has not been investigated to the same extent as for women.
- UI is at least twice as prevalent in
- women as compared to men.
- Steady increase in prevalence in men with increasing age than for women.

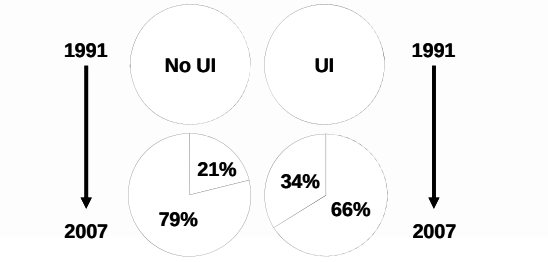


Prevalence of UI in American Men by Age (N=21,590)

A Longitudinal Population-based Survey of Urinary Incontinence, Overactive Bladder, and Other Lower Urinary Tract Symptoms in Women

Anna-Lena Wennberg[a], Ulla Molander[b], Magnus Fall[c], Christer Edlund[c], Ralph Peeker[c], Ian Milsom[a,]*

The incidence and regression of urinary incontinence (UI) in the same women assessed in 1991 and 2007



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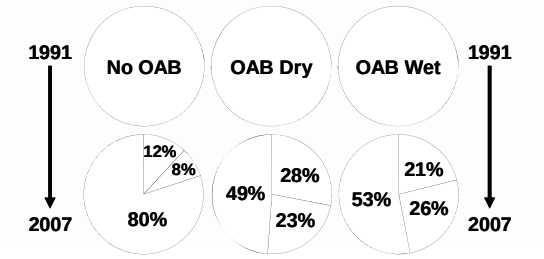
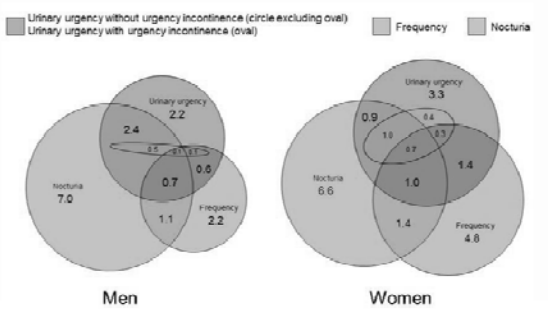
OAB percentage distribution in the same women assessed in 1991 and 2007



Age-standardized prevalence of nocturia, urinary urgency (with or without urgency incontinence) and urinary frequency among Finnish people aged 18–79 years.

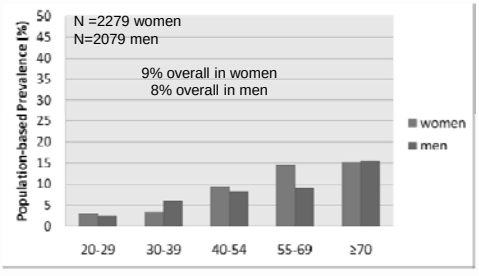


Tikkinen, Tammela, Rissanen, Valpas, Huhtala, Auvinen. Is the prevalence of overactive bladder overestimated? A population-based study in Finland. PLoS ONE 2007; Feb 7;2:e195.

Fecal Incontinence: Prevalence

- FI Prevalence
  - 1 in 10 adults
  - 1 in 6 older adults
  - Less common than urinary incontinence
    - More common in women than men until the later decades in life
- Nursing home prevalence of FI is ~50%
  - 76% with incontinence have dual incontinence (urine and fecal incontinence)
  - 97% with FI have UI

FI Prevalence Among US Women and Men: NHANES 2005-2006



Whitehead et al, Gastroenterol 2009

FI Prevalence in Other Countries

- Korea – 15.5%
  - FI in previous 3 months
  - Convenience-based survey, adult senior centers
  - N=981, avg age 73.6 years, no gender differences
- New Zealand – 12.6%
  - Monthly liquid/solid stool
  - N=2000, avg age 51.6
- Canada – 4%
  - Any FI in past year
  - N=8917, adults 65 years and older

Joh et al, 2010, Sharma et al, 2011, AlAmeel, 2010

Enuresis, Dysuria, Encopresis….could the pelvic floor be the link?

Els Bakker [PT, PhD], An Bael [MD, PhD]
HE L de Vinci- IES Parnasse-Deux Alice – Unité de Recherche - Bruxelles
ZNA Paola Kinderziekenhuis - Antwerpen

INTRODUCTION

An efficient control on urinary and bowel system in humans means equilibrium between the two important phases of each system: storage and emptying. This implicates integration of sphincter function and a correct interpretation of the sensorial information from the bladder and the bowel leading to social acceptable responses by "automatic" and voluntary procedures. The whole process requires perfect co-ordination of smooth- and striated muscles of the outflow region of the little pelvis, including the pelvic floor muscles (PFM), and is regulated by complex neural control systems at the different levels of our central nervous system. Since the last 10 years we find many publications on the activity of the brain in normal storage and emptying, and especially on the specific brain areas involved at each step in adults. [Fowler, Griffiths, de Groat. The neural control of micturition. Nat revue neuroscience 2008:9:453-66]. Unfortunately still very little has been published of this process in children, but it is well-known that this integration is part of a learning process in children. First the child has to learn a correct interpretation of bladder and bowel fullness, and then he has to control the moment of emptying at a social acceptable time. He will postpone bladder and bowel movements by contracting the PFM.

A contraction of PFM will counteract bladder overactivity (OAB), increase urethral closure pressure, increase the ano-rectal angle and the tonus of the anal sphincter. It will therefore often be used by children to avoid leakages, or postpone toilet visit and can lead to non-relaxing PFM. Relaxation at the other hand is necessary to allow normal emptying of the bladder and the bowel: non- or insufficient relaxing of the PFM will lead to a hypertonic PF, who in turn will lead to weak or intermittent urine flow, and incapacity to empty correctly the bladder or the bowel leading to post mictional residu and constipation.
Whether PFM dysfunctions are leading to non-neurological bladder and bowel dysfunctions (NNBSD) or the inverse is until yet not clear but it is well accepted that NNBSD plays an important role in urological and bowel symptoms, leading to symptoms as urinary and/or faecal incontinence, frequency, urge or reduced autonomy for bowel movements and recurrent urinary infections. [Hoebeke 1996]
The PFM can be activated by 3 distinct pathways: the somatic motor system (voluntary command and axial movements), the emotional motor system (anticipatory postural adjustments and behaviour) and by direct projections on the Nucleus of Onuff from the Pontine Micturitin Center. It is important during our therapy to realise that the incapacity to relax might be due to an automatic response of the PFM to

1. Postural perturbations (musculo-squeletal dysfunctions of the thoraco-abdomino-lombo-pelvic region, inadequate toilet-sitting,….) [Bakker 2008],
2. Changes in intra-abdominal pressure during the emptying phase (straining)
3. Activation through the Pontine Micturition Center, etc.

We therefore need to have a global approach during our reeducation, and to consider not only the PFM of the child!

Although the functional link between the urinary and ano-rectal systems is well established, which implicates the necessity to consider the two systems together, we will now for better understanding start to analyse each isolated item, keeping in mind that we have to restore the global function.

LOWER URINARY TRACT DYSFUNCTIONS

The infant bladder has for a long time been accepted to be overactive and to empty automatically at regular intervals through simple spinal reflexes and without any control of higher centres [Bauer *et al.* 1980, Hjalmas 1988]. Development was believed to be a maturational process, normally functional at the age of 4 years [Doleys 1982]. It was only in 1999 that several authors pointed out spinal micturition pathways which were influenced by behaviour and/or arousal and dyssynergic voiding patterns with incomplete emptying in infants. They concluded that voiding with incomplete co-ordination between detrusor contraction and sphincter relaxation could be normal [Sillén 1999]. This more complex mechanism has since been confirmed by other urodynamic studies [Gladh 2000], revealing the presence of a more complex mechanism during voiding than has generally been thought. Spinal micturition pathways, involving a complex integration of neural pathways at both peripheral and central levels, are influenced by behaviour and/or arousal: e.g. micturition never occurs during quiet sleep: there is a cortical arousal in response to full bladder even in new-born infants [Wille 1994, Neveus 1999].

Normal function of the LUT requires

1. bladder filling with little or no changes in pressure
2. desire to void,
3. postponement of the voiding,
4. initiation of the voiding by sphincter relaxation and reflex detrusor contraction,
5. continuous detrusor contraction that leads to complete bladder emptying within in a normal time span, and in absence of obstruction.

Consequently functional pathophysiology can be divided into abnormalities during filling or during emptying phases, though dysfunction can occur during both simultaneously. Symptoms of these dysfunctions are urgency, incontinence, urinary tract infections, and can occur during day and/or nighttime.

1.1. Bladder filling phase

1.1.1.Detrusor overactivity

The first descriptions of non-neurological detrusor dysfunctions in patients with severe disease date from 1915 [Beer]. He described disharmony between sphincter and detrusor and postulated it was caused by an occult neurological disorder. Further reports on this condition did not appear until 1973, when Hinman described a small group with uncoordinated micturition, and recurrent Urinary Tract Infection (UTI) without neurological or obstructive diseases. It was thought to be a behavioural disorder. Its reversal by biofeedback and hypnosis gave an argument in favour of the behavioural nature.

Different terminology has since been used in the pathophysiology of filling: uninhibited bladder, infantile bladder, irritable bladder, spastic bladder, reflex bladder. In the ICS standardisation of the terminology of lower urinary tract dysfunction [1976,1977] the term "detrusor instability", adopted as first used by Bates in 1970, was reserved for an involuntary phasic detrusor contraction of any pressure during the filling phase while the patient is trying to inhibit micturition. In patients with relevant neuropathy this was called

"detrusor hyperreflexia". In 2002 the ICS standardisation and terminology has introduced the term "overactive bladder" (OAB), defined as a urodynamic observation characterised by involuntarily detrusor contractions during the filling phase which may be spontaneous or provoked, and can be qualified according to the cause in neurogenic- or idiopathic detrusor overactivity.

In 1980 Bauer defined abnormal filling patterns, based on urodynamic investigations in a large study of affected children. He grouped the disorders into:
1. primarily unstable bladders (small capacity, hypertonic bladders, detrusor hyperreflexia)
2. Infrequent voiding associated with large capacity hypo- or acontractile bladder.
3. Psychological non-neuropathic bladder

Clinically OAB is characterised by **urgency** (formerly urge syndrome or urgency syndrome). Urgency defined as the complaint of a sudden compelling desire to pass urine, which is difficult or impossible to defer in absence of a proven infection or other obvious pathology [Abrams 2002]. This condition may lead to urge- incontinence, which is the complaint of involuntary leakage accompanied by or immediately preceded by urgency [van Gool 1989, van Gool and de Jonge 1989].
The overactive detrusor contractions are countered by PFM contractions to minimise wetting and to postpone imminent voiding. This will "overtrain" the PFM, who will cause functional outlet obstruction due to urethral and PFM overactivity (see dysfunctional voiding). The dysfunctional voiding will, in turn, maintain the filling phase dysfunction of the detrusor [Hoebeke 1996].
If children wet in spite of PFM contractions, they may even add external compression to the urethra, such as sitting on the point of a chair, pushing the heel against the urethra. [Vincent 1966]. The habit of countering every urge to void inevitably leads to postponement of defaecation (see associated symptoms).

Urge incontinence usually peaks in the afternoon, and may have a nocturnal component, which may or may not wake the child. Night-time wetting in a child with urge is not categorised as enuresis but as incontinence: the wetting at night is caused by the same dysfunction as its daytime's counterpart.

The exact causes of the development of OAB in children are yet unclear. It has been believed that the uninhibited bladder contractions are exclusively a consequence of a retardation of the maturation of the reticulospinal cords and the inhibition centres in the cerebral cortex. Studies in large populations of children show involuntary detrusor contractions during provocative cystometry, being one of the most common elements of NNBSD. [Mayo 1990, Breugelmans 1992].In 1989 Goldraich however noticed that the balance between bladder and sphincter is very vulnerable as long as the child has not acquired the ability to suppress the detrusor contractions. Hellström suggested considering dysfunctional voiding as normal with a risk of NNBSD developing during the transition to bladder control [Hellström 2000]. This concept might explain the success reported with training and behavioural programmes for dysfunctional voiding associated with recurrent UTI and/or daytime wetting. [Hoebeke 1996, De Paepe 1998].

1.1.2. Abnormal bladder sensation

Bladder sensation may be increased (an early desire to void at low volume), reduced (diminished sensation during bladder filling) or absent. Bladder sensation is difficult to evaluate in children, and can only be used in toilet trained cooperative children. It can be judged by three defined points noted during cystometry and evaluated in relation to bladder

volume at that moment, but no differences between two groups with and without MNE could be established [Wyndaele 1993].

1.1.3. Incompetent urethral closing mechanism

Very exceptional in children without neurological diseases, and therefore not discussed in this paper

1.2. Bladder emptying phase

1.2.1. Dysfunctional voiding

Overactivity of the PFM and the external urethral sphincte (EUS) used continuously as emergency brake to prevent leakage's, leads to hypertonic PFM. In consequence the most important problem in these children is their inability to relax PFM during the mictions, leading to dysfunctional voiding. Different patterns of dysfunctional voiding have been described, all with PFM overactivity during voiding as common denominator. The patterns range from staccato voiding, to fractionated voiding to hypo- or acontractile bladder (formerly lazy bladder) with incomplete pathogenesis of these disorders easy to understand [van Gool 1996].

- Staccato voiding occurs in case the urethral sphincter no longer relaxes completely. During voiding a staccato pattern may be observed. This rhythmic voiding pattern is caused by periodic bursts of pelvic floor activity during voiding; resulting in dips in the urine flow rate coinciding with high detrusor pressure. The PFM contractions are triggered by a flow rate above a certain threshold. As soon as this contraction has reduced the flow rate, the pelvic floor relaxes again and the flow rate regains the threshold. Flow time is prolonged and emptying may not be complete, increasing the child's risk for developing UTI.
- Fractionated voiding is characterised by incomplete and infrequent voiding, with micturition in several separate fractions, due to voluntary or automatically induced contractions of the PFM, and possibly caused by augmented pressure of the abdomen.

1.2.2. Detrusor underactivity

Detrusor underactivity, the hypo- or acontractile bladder is defined as a contraction of reduced strength and/or duration, resulting in prolonged bladder emptying and/or failure to achieve complete bladder emptying. The most extreme form is an acontractile detrusor. This pattern in children was recognised in 1962 by Luca.
A comprehensible mechanism of this would be the voluntary, repeated postponement of the voiding, which can also lead to chronic overactivity of the pelvic floor, with overdistension of the bladder and loss of perception of bladder filling. Gradually the bladder will lose its capacity to contract and these children will have incomplete voiding on abdominal pressure, raise in IAP triggering automatic PFM contractions. The voiding consists of several detrusor contractions, each with his own flow. Abdominal pressure is often used to shorten the flow time. Wetting in these cases is usually secondary to overflow incontinence.
However, the fact that children with hypo- or acontactile bladders usually tend to be younger than those with OAB and/or dysfunctional voiding defavorizes this hypothesis.

BEDWETTING

Nighttime wetting is a very bothersome condition for children and parents. A study in 4332 children aged from 10-14 years showed clearly that night-time wetting is the most important reason to ask for professional help, where daytime wetting tends to be kept in the dark [Bakker et al]

In most of the cases nighttime wetting (nocturanal enuresis (NE) is associated with functional problems and will then be referred to as non-monosymptomatic NE. Only Monosymptomatic NE (MNE) is defined as nighttime wetting without any functional disorder, and concerns a minority of all bedwetting children [Bakker 2002]. Is seems logical to restore first the normal bladder and bowel function during daytime, before trying to solve the nighttime symptoms [Kalo and Bella 1996].

BOWEL DYSFUNCTIONS

Functional constipation, with or without soiling represents a common problem in children with urge syndrome. The high pelvic floor tone present in urge syndrome and in dysfunctional voiding, as a result of defence against urine-loss, might contribute to the occurrence of constipation [Dohil 1994, Wan 1995, Blethyn 1995, , Loening-Baucke 1997, De Paepe 2000]. Whether constipation or OAB come first is not clear until yet.

Soiling is defined as the involuntary seepage of loose stool resulting in staining of underwear. Encopresis is the involuntary loss of formed, semi-formed or liquid stool into the child's underwear in the presence of idiopathic (functional) constipation in a child after the age of 4 years, occurring on a regular basis without any organic cause. The difference between encopresis and soiling is the amount of faeces lost [Loening-Baucke 1991]
For a variety of reasons the toilet training process itself can be a primary cause of stool-withholding behaviour and constipation: for e.g. children using regular toilets with dangling legs rather than a potty [Issenman 1999, Christophersen 1991]. Additionally the toddler in training may withhold stools as response to excessive parental pressure. Institutionalised day care settings may also lead to constipation and primary encopresis by inadequate information between caregivers and parents: both parties may incorrectly assume that the child defecates only at home or only at the centre [Brazelton 1999]. It is highly significant that a majority of children who do not attain social bowel continence have a history of constipation beginning at toilet training age [Issenman 1999].
Another hypothesis for the development of constipation is the habit to counter every urge to void with voluntary pelvic floor contractions leading to inappropriate postponement of defaecation, leading to constipation and soiling [Renson 2000].
This explains the link between constipation, OAB and UTI described as by O'Regan in 1985 [O'Regan 1985, 1986], and confirmed by Romanczuk and Korczawski in 1993, who revealed a high percentage of LUT-problems in hospitalised children for chronic constipation. Koff proposed in 1998 the concept of "dysfunctional eliminating syndrome", covering both urinary and bowel dysfunction

2.1.Bowel filling phase : Abnormal sensation
The overtraining of pelvic floor muscles to withhold stool, causes faecal impaction, causing pain during the defaecation, leading to a paradoxal contraction of the sphincter and incomplete emptying of the bowel [Loening-Baucke 1982]. This leads to chronic distension, decreased ano-rectal sensibility, more faecal impaction, more pain and finally involuntary stool loss. Indeed, infants and toddlers with constipation usually have a history of infrequent, hard and painful bowel movements, often accompanied by screaming and stool-holding manoeuvres [Loening-Baucke 1987].

2.2.Bowel emptying phase

High tension of the PFM can cause a paradoxal contraction of the muscles, which is defined as the contraction of the puborectalis muscle or/and the external anal sphincter (EAS) during defecation [Wasserman 1964, Wald 1986, Keren 1988]. Indeed high PF tone creates 3 functional obstacles, situated at either the recto-rectal angle, and/or the ano-rectal angle an/or EAS.
This "reflex"contraction of the PFM can also be in answer to anal pain, or fear for pain, caused by hard stools or anal injuries. This may lead to postponement of the next defecation and thus to delay of eliminating stool.
Another reason for triggering automatic PFM might be a bad toilet position, creating disequilibria with postural perturbation, triggering automatic contractions of the PFM [Smith 2008].

THERAPY

Although medication with anticholinergics for OAB, antibiotics for treatment or prophylaxis for UTI or laxatives for treatment of concomitant constipation are still very popular, pelvic floor therapy has gained a lot of attention during the last years. This therapy, used in the rehabilitation of dysfunctional bladder and bowel, is a combination of cognitive, behavioural and physical therapy methods. The programs are based on careful evaluation of bladder and bowel function. The aim of this training is to normalise the whole voiding and defecation pattern and prevent further functional disturbances. Function should be viewed as an integrated concept, from the filling to the emptying phase.
In the table beyond you will find a proposition for a systematic approach for urinary (left colomn) and faecal (right colomn) dysfunctions.

Explanation and demystification

The first step is a dialogue between the child and the therapist, about normal bladder/bowel function. It is important to get the child interested in its own condition. An essential part of this is to explain, using all images which can help.

Diaries

[Hellström 1987,1992, Hoebeke 2011].

Voiding and drinking diary: to promote a normal bladder work schedule, a bladder regime is often applied. This implies voluntary initiation of voiding on predetermined times with 1-3 hours intervals, and without previous urge, in order to practise voluntary control over the bladder. Another goal is to regain a normal rhythm of bladder emptying. Frequency/volume charts are filled in by the child, scheduled to follow the daily life of the child. Children with urge start with shorter intervals, gradually increasing them as soon as the urgency attacks disappear. Children with a hypo- or acontractile bladder have to learn to decrease the intervals

The defecation diary is used to teach the child to deal consciously with his bowel problem. These charts are used to teach the child how to obtain an appropriate liquid intake and a regular toilet visit. The schedule is adapted after evaluation at every consultation.

Relaxation of Pelvic Floor Muscles

[Hoebeke 1996, McKenna 1999, Herndon 2001, De Paepe 1998, Hoebeke 2011]

In children pelvic floor muscles almost never fail as emergency brake, except sometimes during imperative urge, or during uncontrolled laughing. However the most common problem occurs in children when they are unable to relax the pelvic floor during voiding. In some cases instructions and practise can remedy this problem, but in the more severe cases the treatment should focus specifically on the pelvic floor. Several programs exist with pelvic floor exercises and perception practice, tailored to suit children A prospective evaluation reported a success rate of more than 80% in 42 girls with a history of recurrent UTI and urodynamically documented bladder sphincter dysfunction. The studies describe physiotherapy exercises in an excellent way and show definite improvement of signs and symptoms. Controlled studies on physiotherapy alone are still missing, as programs described are always compound packages of pelvic floor exercises, biofeedback and behavioural therapy.

Biofeedback

[Hellström 1987, Jerkins 1987, van Gool 1992, Kjolseth 1993, Hoebeke 1996, Vijverberg 1997, Combs 1998, De Paepe 1998 and 2000, 2001, de Jong 2007].

Implies perception of filling phase or emptying phase. This is achieved through monitoring of these activites, in a way which is easy to follow by the child. The feedback loop enables the child to influence the process, provided cognitive capacities are developed normally. Numerous studies reported on the efficacy of this treatment in children

Flow patterns will teach the child how to relax the pelvic floor during the voiding. The child sits on a toilet with a flow transducer, watching flow curve and EMG on-line on a computer display, trying to empty completely in one relaxed voiding.

Inflatable **Balloons** are used to learn correct perception and emptying

Neuromodulation

[Van Laecke et all 2012; Gladh 2001; Hoebeke 2001; Hagstrom 2009]

Transcutaneous and percutaneous neuromodulation delivered over either the sacral, anogenital or peroneal region of the ankle, has proven a useful adjunctive treatment in children with bladder overactivity. Intravesically stimulation can potentially improve detrusor contractility and enhance bladder emptying. Recent studies indicate its effectiveness in children with severe dysfunctional elimination syndrome refractory to maximum medical treatment.

Clearly neuromodulation in children warrants larger, controlled and randomized studies, including studies about its use as first-line intervention and in children with combined bladder and bowel dysfunction.

Reported changes on bladder function with neuromodulation include: significantly increased bladder capacity, decreased severity of urgency, improved continence, and decreased frequency of urinary tract infection. Significant improvement in urodynamic parameters of bladder compliance, number of involuntary contractions, and bladder volume at first detrusor contraction have also been noted.

Level of evidence: 4
Grade of recommendation D

Rules for application at home

[De Paepe 1998, Hoebeke 2011]

After evaluation of fluid intake and eating habits, rules for a fixed intake are made, including reminders, designed for use between the visits to the hospital. Information and rules for application at home can be used:

- every time that I feel that my bladder wants to pee, I go immediately to the toilet
- during voiding I keep my stomach asleep, I don not strain but count , sing or whistle
- after voiding I don not run away from the toilet immediately, but I count quietly up to five before wiping off
- Every time I go to the toilet I look if my pants are still dry. If they are wet I have to change them.

Drink water, pay attention to your diet (a lot of fibres, vegetables and fruit)
sit 3 times a day on the toilet after each meal and I always pay attention to posture on the toilet and think of the relaxation exercises of the pelvic floor during straining

Toilet Posture

[Wennergren 1991, Khen-Dunlop 2006, Hoebeke 2011]

Children are advised to void sitting down on the toilet, with a small bench to support their feet. Thighs have to be spread; the back has to be hold straight, and tilted slightly forward.

A proper toilet posture for defaecation implies that the legs are spread and the feet supported, the knees should be higher than the hips. The back is slightly bent forward, which is the optimal position to reach perfect relaxation of the pelvic floor during straining. In children who can not reach the floor with their feet a small bench or support is placed under the feet.

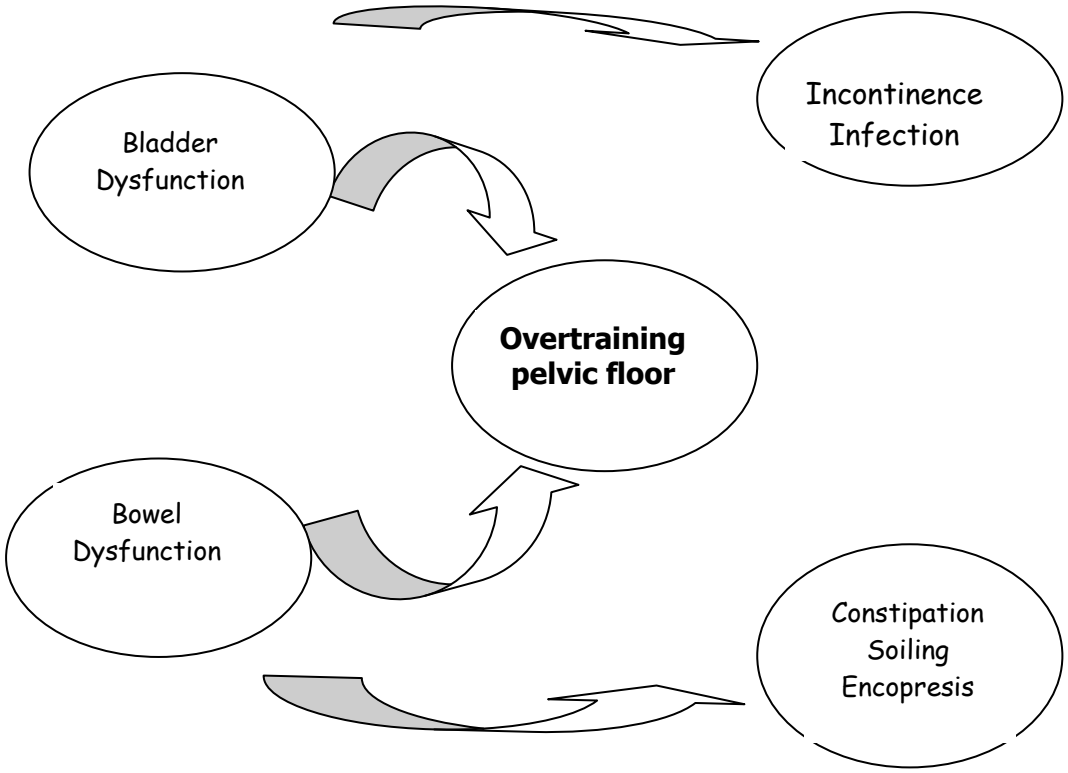
Conclusion

The association between bladder and bowel dysfunction has been described in many reports, but the exact pathophysiology remains unclear, although the anatomical proximity of bladder and bowel, and the identical innervations of the urethra and the anal sphincter, make it tempting to conceptualise that dysfunction can occur in both systems simultaneously. Until yet the exact starting point of the dysfunctions is not established, probably it can start from different stations at the time.

It therefore is very important to consider global storage and emptying functions of the small pelvis and to treat both at the time. Many authors report resolution of urinary symptoms in treating constipation, and vice versa [Neumann 1973, O'Reagan 1986, De Paepe 2000]. Actually the tendency is to first treat bowel problems, before the urinary symptoms.

Standardisation and definitions are used in this article as approved by the International Children's Continence Society (ICCS) in 1998, adapted to the new terminology 2002 of the ICS (International Continence Society).

Figure 1: Pathophysiology of combined bladder and bowel dysfunction [De Paepe et al 2000]



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Continence & Disabled Persons:

Where management & quality of life meet

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Quality of Life

your personal satisfaction (or dissatisfaction) with the cultural or intellectual conditions under which you live (as distinct from material comfort)

wordnetweb.princeton.edu/perl/webwn

Neurologic Disorders

* Can affect every aspect of a person's life
* Can be distressing, disabling and affects social, psychological, occupational, domestic, physical and sexual life
* Urinary incontinence alone can be equally as disabling but when coupled with a neurologic diagnosis, much thought must go into the planning of bladder management

Important Aspects

* First and foremost, preservation of the upper tracts
* Acceptable and adaptable for that patient's situation
* Adequate preservation of quality of life

Other Goals of Management

* Control of UTI's
* Adequate storage at low pressures
* Adequate emptying at low pressures
* Adequate control

Wein, 2002

Therapy to Facilitate Storage

* Pharmacologic Therapy
* Neuromodulation
* Augmentation cystoplasty
* Botulinum toxin
* Non-surgical periurethral bulking
* Surgical procedures (sling, AUS)

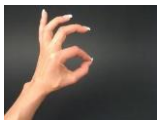
Therapy to Facilitate Emptying

- Bladder Related-external compression, neuromodulation
- Outlet Related-address anatomic obstruction
- Miscellaneous-CIC, continuous drainage, diversion

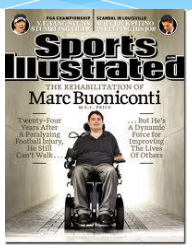
Clean Intermittent Catheterization

- Still the "gold standard" for management of incomplete emptying in the neurogenic population
- What if someone isn't able to catheterize themselves?
- How does it affect QOL when a caregiver must perform this procedure for someone numerous times a day?
- Does bladder management really affect QOL?

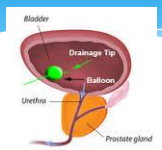
With hands like these?

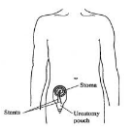


Independence and Control?



Other Options





The Global Perspective: Continence Awareness and Developing Countries

Sherif Mourad, MD

Pelvic organ prolapse and urinary and faecal incontinence are significant problems in developing countries. Access to health care to manage these conditions is often limited, and women usually have to live with the consequences for the rest of their lives.

Women with urinary or fecal incontinence show depression, anxiety, and abnormal levels of situational life stresses. It is likely that psychological changes are related to the symptom and related disability and distress than to specific urogynecologic conditions. Feeling of insecurity, anger, apathy, dependence, guilt, indignity, feeling of abandonment, shame, embarrassment, depression and denial are also common. Women feel loss of self-confidence and self-esteem.

It is widely accepted that urinary and fecal incontinence is under-recognized and under-treated. Fewer than half of people with incontinence in the community consult their healthcare providers about the problem. The reasons for this include embarrassment, availability of absorbent products, low expectations of benefit from treatment, and lack of information regarding options for treatment.

The sufferer has various stresses including physical, psychological and socio-economic. Many of these women feel intimidated to attend a hospital and are also vulnerable and this leads to psychological trauma.

Notes