W25: (Committee Activity) Educating our Generalist Colleagues: A Committee Collaboration Lead by the Continence Promotion Committee (Open Session)

Workshop Chair: Tamara Dickinson, United States
08 October 2015 09:00 - 12:00

Start	End	Topic	Speakers
09:00	09:20	Nursing management of urinary and faecal incontinence	Tamara Dickinson
09:20	09:40	Pelvic floor muscle exercises for the generalist provider	Doreen McClurg
09:40	10:00	Skin care in incontinence	Donna Bliss
10:00	10:30	Questions	Donna Bliss Tamara Dickinson Doreen McClurg
10:30	11:00	Break	None
11:00	11:20	Standard terminology	Marcus Drake
11:20	11:40	Management of UTI's in neurogenic patients	Emmanuel Chartier Kastler
11:40	12:00	Questions	Emmanuel Chartier Kastler Tamara Dickinson Marcus Drake

Aims of course/workshop

For those who work in our field, we live and breathe this work every day. Many of generalist urologists, gynaecologists, nurses and physiotherapists lack the in depth knowledge on these topics. This workshop aims to provide pearls of wisdom to take away and educate those in your community.

Learning Objectives

1. Identify educational needs of generalist colleagues

2. Discuss management of special populations

3. Verbalize current standard terminology

Nursing Management of Urinary and Faecal Incontinence

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Incidence and Prevalence of Urinary Incontinence

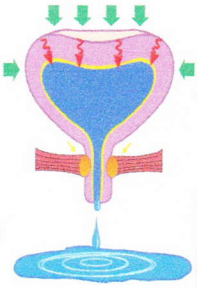
- Significant public health problem
- Is distressing, disabling and affects EVERY aspect of life
- The leading cause of LTC facility placement
- Believed to be under reported because of embarrassment or the belief that there is no effective treatment
- Urinary incontinence is NOT a normal part of aging

Costs of UI

- Annual direct costs in the us are estimated at $16.2 billion
- Such a significant and costly health issue that in 2001 the WHO convened the International Consultation on Incontinence (ICI)
- Participants in this meeting were chosen so that a multidisciplinary group could review the research and evidence to develop guidelines an healthcare policies

Types of Urinary Incontinence

- Urge
  - urine loss accompanied by urgency resulting from abnormal detrusor contractions
- Stress
  - urine loss resulting from sudden increased intra-abdominal pressure (eg, laugh, cough, sneeze)



- Mixed symptoms
  - combination of stress and urge incontinence

Voiding Dysfunction and the Elderly

Transient Causes

- D elirium/confused state
- I nfection
- A trophic Vaginitis/Urethritis
- P harmaceuticals
- P sychological
- E xcessive Urinary Output
- R estricted Mobility
- S tool Impaction

Conservative Therapy Options for Urinary Incontinence

Surgery is not the only treatment!

Behavioral Modifications

- Adequate fluid intake, appropriate fluid intake
- Identification of bladder irritants
- Managing constipation
- Evening fluid restriction and elevating LE to decrease nocturia

Toileting Programs

- Target either restoration or maintenance of bladder function
- Scheduled or timed voiding is a form of habit training
- Prompted voiding reinforces appropriate toileting
- Prompted and scheduled/timed voiding have been found to be helpful in LTC facilities

Bladder Retraining Programs

- Teaches one to resist the sensation of urgency and postpone voiding
- Very effective in the OAB/UUI
- Voiding by the clock alone can be an effective tool for those with obsessive toileting

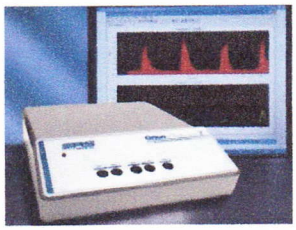
Pelvic Floor Muscle Exercises

- Originally developed by Dr. Arnold Kegel in the 1940's
- Today pelvic muscle training has grown into a complex therapy involving highly specialized and trained nurses incorporating behavioral modification and appropriate use of PFM rehabilitation

Pelvic Muscle Rehabilitation

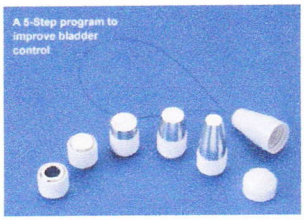
- Uses PME as repetitive and selective voluntary contraction and relaxation of specific PFM
- Can increase the support at the outlet and aids in techniques to suppress urgency
- Improvement persists over time
- Adequate assessment of PFM contraction and isolation is important
- Can use computer assisted biofeedback

Computer Assisted Biofeedback



Techniques

- Squeeze before the cough and sneeze
- Urge suppression
- Functional incontinence may benefit from altering environmental factors



Promoting Bladder Health

Promoting Bladder Health

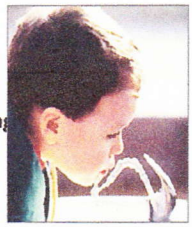
- Drink 6-8 cups of fluid daily, preferably water
- Limit the use of alcohol, caffeine, artificial sweeteners, high sugar, citric/spicy foods
- Maintain weight, good posture and hygiene
- Keeping other medical conditions under control
- Be aware of medications that may lead to incontinence (e.g., diuretics and sedatives)

Promoting Bladder Health

- Learn how to strengthen the pelvic floor muscles by doing pelvic floor exercises
- Work with your health care provider on timed scheduled voiding
- *Avoid constipation by eating a high fiber diet*
- Report changes in bladder habits, frequency, urgency, pain or blood in the urine to your healthcare professional

Promoting Bladder Health

- *Keep a cup for drinking near bathroom and kitchen sinks as reminders to drink*
- Reduce drinking fluids in the evening to decrease nighttime urination



- Drink enough fluid for urine to be clear
- Drink evenly throughout day, not all at once

Don't forget the bowels!

Management of Faecal Incontinence

- Use a predictable routine, use the gastrocolic reflex (drinking warm beverages and/or eating a meal, increases muscular activity in the GI tract) to facilitate emptying
- Urge suppression to help
- Probiotics, fiber to help maintain stable stool consistency

Dietary Considerations

- Adequate and appropriate fluid intake
- Appropriate fiber
- Avoiding foods that produce excess gas
- Things to possibly avoid: caffeine, spicy foods, onions, green vegetables, salads, citrus

Resources

- International Foundation for Functional Gastrointestinal Disorders
  www.iffgd.org

Digestive Health Alliance
www.dha.org

Pelvic Organ Prolapse

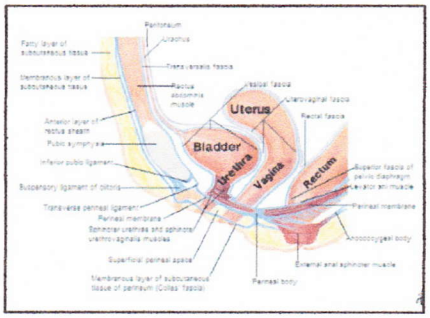
Hernias of the pelvic floor

What you see is the result of the defect, not the cause of it

1 in 9 women will have surgery for pelvic organ prolapse (POP) by the age of 80

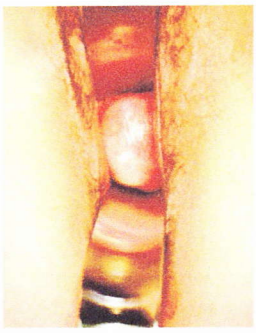
Women over age 60 more likely to seek care for POP than younger women

Muscular Support of the Pelvic Floor



Muscular Support of Pelvic Floor

Cystocele

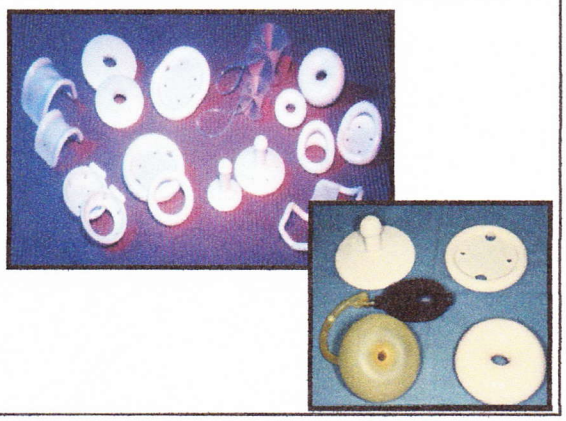


Symptoms

- "Something is falling out"
- Bulge
- Pelvic pressure
- Visible lump
- Excoriation
- Back pain
- Digital decompression of bowel/bladder
- Constipation/fecal incontinence
- Sexual difficulty

Pessary Indications

- **Poor Surgical Candidate**
- **Does not desire surgery**
- **Diagnostic tool**
- **Temporary relief**



Complications

- Difficulty urinating/Constipation
- Some increased vaginal discharge/odor
- Unmasked SUI
- Vaginal ulceration


THE UNIVERSITY OF TEXAS
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Pelvic floor muscle exercises for the generalist provider

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ICS Physiotherapy Committee Chair

nmahp-ru
Improving health through research

Continence is a learned skill!

Development of Urinary Continence

Sufficient strength in the pelvic floor muscles and external urethral sphincter

The development of frontal areas of the brain to appreciate the signals o bladder fullness

Ability to link the inhibition of voiding to voluntary/involuntary contraction of the external urethral sphincter

Types of Urinary Incontinence

Stress urinary incontinence (SUI)

the complaint of involuntary leakage on effort or exertion, or on sneezing or coughing

- **Urgency urinary incontinence (UUI)**

the complaint of involuntary loss of urine associated with urgency
- usually with frequency and nocturia
- is clinically described as: overactive bladder syndrome- OAB - Can be OAB wet or OAB dry

- **Mixed urinary incontinence**

the complaint of involuntary leakage associated with urgency and also with exertion, effort, sneezing or coughing

The Pelvic Floor Muscles

There is no considerable muscle in the body whose form and function are more difficult to understand than those of the levator ani, and about which such nebulous impressions prevail'

Dickinson 1889

The PFM

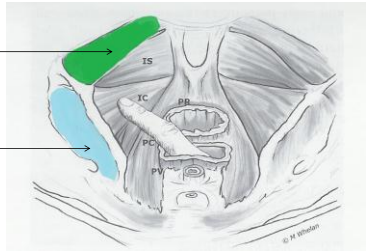
- The pelvic floor muscles are unique, somatically controlled muscles that are active throughout life, 24 hours a day
- They form a dynamic platform which functions like a trampoline at the base of the pelvis to contain the pelvic and abdominal organs, preventing prolapse and assisting in the maintenance of continence
- Type 1 fibres approximately 70%
- Type 2 fibres approximately 30%

Gilpin et al. 1989

Pelvic floor muscles

Piriformis

Obturator internus



History of PFM Exercises

- Chines Taosimm for over 6000 years
- 1936 paper published by Margaret Morris
- 1948 Kegel exercises with a pressure biofeedback perineometer

Functions of the pelvic floor

- Support
  - abdominal and pelvic organs
- Strength / Sphincters
  - occlusion of passages
- Sexual
- Birth [Rotation of baby's head]

PFM Exercises

- Repetitive selective voluntary contraction and relaxation of specific pelvic floor muscles'

Aims to

- Prevent stress urinary incontinence by increasing the power of the pelvic floor muscles
- Control urgency, urge incontinence and control frequency by inducing reflex bladder relaxation

Rationale

- Intentional effective PFM contraction (i.e cranial and forward direction) prior to and during effort or exertion clamps the urethra and increases the urethral pressure – the knack
- Bladder neck receives support from strong, toned PMF thereby limiting its downward movement during effort and exertion thus preventing urine leakage. Intensive strength training may build up the structural support of the pelvis permanently elevating the levator plate to a higher position and enhancing the hypertrophy and stiffness of its connective tissues.

UUI

- Godec's (1997) observation that a detrusor muscle contraction can b inhibited by a PFM contraction induced by ES. Barrington's micturition centre inhibitory loop clamps the urethra and calms the bladder

Stress urinary incontinence

A contraction of PC elevates the bladder neck into an area of transmitted abdominal pressure, so that closure pressure at the proximal urethra will equal the increased bladder pressure, preventing urine loss.

DeLancey 1986

A sudden rise in intra-abdominal pressure will close the passages, as long as the hammock below remains firm and does not descend

DeLancey 1992

Urgency urinary incontinence

- Perineo-detrusor inhibitory reflex:

a contraction of the PFM inhibits a detrusor contraction → voluntary suppression of micturition

Mahoney et al, 1977

PFM exercise

- There is no evidence base for prescription of PFM exercises. We therefore need to:
- Relate anatomy of the pelvic floor and muscle physiology Develop individualised programme by considering:
  - Specificity
  - Overload
  - Reversibility
  - Maintenance

Changes?

- Initially due to improved understanding
  - recruitment of the correct muscles
- Next due to use of existing under-utilised function
  - improved neuro-muscular co-ordination (Griffin et al., 1994)
- Followed by increase in muscle bulk
  - strong repetitions for bulk (12 weeks+)
  - prolonged at moderate intensity for endurance

Evidence

NICE 2006/2013

Offer a trial of supervised pelvic floor muscle training of at least 3 months' duration as first-line treatment to women with stress or mixed UI. [2006]

- Pelvic floor muscle training programmes should comprise at least 8 contractions performed 3 times per day. [2006]

Cochrane –

- This review found that the existing evidence is insufficient to make any explicit recommendations about the best approach to PFMT, other than women were more likely to report they were improved if they received more attention from a health professional. Based on few data it seemed that PFMT with regular (e.g. weekly) supervision was better than PFMT with little or no supervision (Haysmith)

How, when and who

- Incontinence and pelvic organ prolapse
- Individual or Group
- How often, how long
- Males
- Peri-partum
- Neurological
- The elderly
- Adherence

Feedback/Biofeedback

- Feedback is the return of a fraction of the outcome from a system to its input
- Biofeedback (BF) can be defined as being augmented, concurrent or terminal feedback of biological signals that enables a person to identify and modify a bodily function of which they are usually unaware

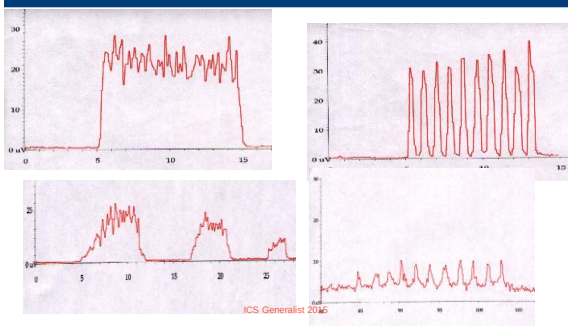
EMG Biofeedback

The recording of muscle bioelectrical activity correlating to motor unit activity Vodusek 1994

Aims to

Improve a specific lower urinary tract dysfunction by increasing patient awareness where the underlying pathophysiology can be monitored and subsequently altered by the patient

sEMG Biofeedback



Intra vaginal NMES

'The application of electrical current to stimulate the pelvic viscera or their nerve supply' Abrams 2002

Aims to

Aid very weak PFMs by increasing proprioception and tonification of PFMs

Facilitate detrusor inhibition by:-

- **Reflex activation of sympathetic inhibitory neurons**
- **Reflex central inhibition of parasympathetic excitatory** Sundin 1974: Lindstrom l983

Verbal Instruction/practical

- Verbal instruction
- Adherence measures
- Virtual reality

Skin Care in Incontinence Teaching Our Generalist Colleagues

Donna Z. Bliss, PhD, RN, FGSA, FAAN

Professor and School of Nursing Foundation
Professor of Nursing Research
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What to teach?

- Definition and Clinical Assessment
  - Manifestations and severity
- Epidemiology
  - Significance, scope, course
  - Etiology, pathophysiology, risk factors
    - Improve understanding
- Prevention and Management
  - Practice guidance

IASD Definition and Etiology

- Skin damage resulting from contact with an irritant(s)(e.g., feces) and inflammation

Different etiology than a pressure ulcer

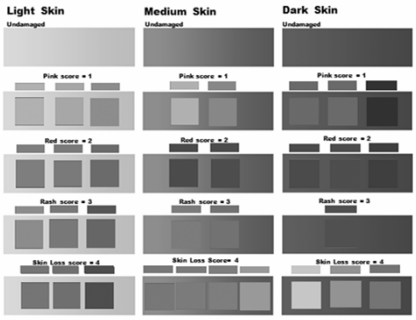
More than moisture

- "Local" Aggravating factors
  - Irritant type
  - Spread of contact
  - Duration of exposure
  - Skin moisture, occlusion
  - Alkaline skin pH
- Baseline skin health: dryness, other skin damage (friction/shear)
- General Health

IASD Clinical Manifestations

- Skin Color Changes
  - Light skin tones: pink or red with purple tones
  - Dark skin tones: lighter or darker than normal pigment, redness, purple tones

IASD-D.2 Tool



IASD Clinical Manifestations

- Diffuse spread, irregular edges
- Superficial skin loss
  - Shiny Surface due to serous exudate
  - Local edema (inflammation)
- Secondary fungal infection

IASD Severity: mild to moderate in most cases

IASD Manifestations/Severity in Community-Dwellers

Sign or Symptom	N (%)
Redness	24 (60%)
Rash	5 (13%)
Skin loss/breakdown	5 (13%)
Bleeding	4 (10%)
Soreness	31 (78%)
Itching	9 (23%)
Burning	6 (15%)

(Bliss et al., Accepted *JWOCN*)

IASD Severity

ICU

- **Mild** (pink)
  - 13% of observed time
- **Moderate** (moderate red)
  - 11% of observed time
- **Severe** (red)
  - 4% of observed time
- **Partial tissue loss**
  - 9% of observed time
- **Fungal infection**
  - 3% of observed time

N=39 with IASD

(Bliss et al., *JWOCN*, 2011)

ICU/Acute Care

- **Mild** = 17%
- **Moderate** = 8%
- N=10 with IASD and on skin damage prevention

(Brunner et al., *Urol Nurs*, 2012)

NH

- **Mild** = 69%
- **Moderate** = 22%
- **Severe** = 8%
- N=33 with IASD and on skin damage prevention

(Bliss et al., *OWM* 2006)

IASD Locations

NH

- 73% buttocks
- 70% anal area
- 36% genitals, scrotum, groin or perineum
- 24% thighs
- 9% sacrum

(Bliss et al., *OWM*, 2006)

LTAC

- 34% buttocks
- 32% rectal/anal area
- 28% Scrotum, perineum
- 18% thighs
- 10% abdomen

(Long et al., *JWOCN* 2012)

Community-Living

95% Around anus/between buttocks
13% Outer Buttocks
10% Groin (labia, scrotum, penis)
3% Thighs (inner or outer)

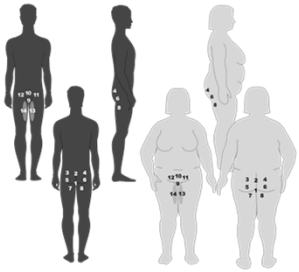
(Bliss et al., Accepted *JWOCN*)

THE INCONTINENCE ASSOCIATED SKIN DAMAGE AND ITS SEVERITY INSTRUMENT (IASD.D.2)

LOCATION
The 14 body locations of IASD (IASD = Incontinence Associated Skin Damage)

1. Perianal skin
2. Crease between buttocks
3. Left upper buttock
4. Right upper buttock
5. Left lower buttock
6. Right lower buttock
7. Left Posterior thigh
8. Right posterior thigh
9. Genitalia (labia/scrotum)
10. Lower abdomen/suprapubic
11. Left Crease between genitalia and thigh
12. Right Crease between genitalia thigh
13. Left inner thigh
14. Right inner thigh

Note: "Left" and "Right" refer to the patient's left and right as shown.



IASD-D.2 Instrument Scoring

- Score all 14 body areas
- Score the worst type of damage in area
- Sum scores
- One final score (0-56)

Name or other identifier		Date
	Note: Left and right refer to the patient's left and right	Scores to be Used 0 = No IASD 1 = Pink skin 2 = Red skin 3 = Rash 4 = Skin loss
	The 14 body locations of IASD	
1	Perianal skin	
2	Crease between buttocks	
3	Left upper buttock	
4	Right upper buttock	
5	Left lower buttock	
6	Right lower buttock	
7	Left Posterior thigh	
8	Right Posterior thigh	
9	Genitalia (labia/scrotum)	
10	Lower abdomen/suprapubic	
11	Left Crease between genitalia and thigh	
12	Right Crease between genitalia and thigh	
13	Left inner thigh	
14	Right inner thigh	
	TOTAL SCORE (Sum of above scores)	

BORDERS OF BODY AREAS of IASD

"Left" and "Right" refer to the patient's left and right

1. **Perianal Skin:** The anus and the skin that extends 1 inch (2.5 cm) away from the anus on all sides; this one inch radius around the anus is approximately the width of the index and middle finger together.
2. **Crease between buttocks:** Area between the right and left buttock where the one buttock is in natural contact with the other; upper and lower ends of crease are where buttocks and thigh begins.
3. **Left upper buttock:** Right and left upper buttocks are separated by the crease between the buttocks. Upper buttock start starts 1 inch (2.5 cm) above the anus, extends upward, ending at the lower back and outward to the left side ending at the side of the back. Left always refers to the patient's left.
4. **Right upper buttock:** Same as the left upper buttock but to the patient's right side.
5. **Left lower buttock:** Right and left lower buttocks are separated by the crease between the buttocks. The lower buttock starts 1 inch (2.5 cm) from the anus, extends downward, ending where the thigh begins. The left lower buttock extends outward to the left side ending at the outer thigh. Left always refers to the patient's left.
6. **Right lower buttock:** Same as left lower buttocks but to the patient's right side.

IASD Course

- Onset : days to 2 weeks
  - Faster in those with greater illness severity
- Time to Healing:
  - 2 weeks+ in those with comorbidity
  - ~1 week in normal adults

IASD Course

Critical care patients

•Time to onset of IASD = 4 d (1-6 d) median (range)

• Time to healing = 11 d (1-19 d)

(Bliss et al., *JWOCN* 2011)

Community-living people

- IASD onset = 14 d (0-38 d) median (range)
- Time to healing = 7 d (3-44 d)

(Bliss et al., Accepted *JWOCN*)

Nursing home residents

Time to onset = 13 d (6 - 42 d) (median) range

Time to healing = 14 d for 41% residents

(Bliss et al., *OWM* 2006)

LTAC

Time to onset = 13.5 d (3-25 d) median (range)

Time to healing = 9 d (2-39 d) for 45%

(Long et al., *JWOCN* 2012)

IASD Prevalence Summary

IASD occurs across clinical settings

- 10%-20% in hospitals (Campbell et al, *Inter Wound J* 2014; Junkin et al., *JWOCN* 2007)
- 20% LTACs (Long et al., *JWOCN* 2012)
- 3%-4% in NH residents on a skin damage prevention program (Bliss et al., *OWM* 2006, Zehrer et al., *OWM* 2004)
- 52% of 188 community-living people with fecal incontinence reported a history of IASD (Rowher et al., *JWOCN* 2012)

IASD Incidence Summary

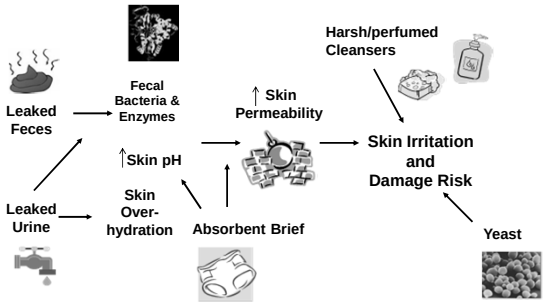
Incidence

- 7.6% of 132 LTAC admissions (Long et al., *JWOCN* 2012)
- 3.4% of 981 NH residents on skin damage prevention program (Bliss et al., *OWM* 2006, *JWOCN* 2007)
- 41% of 98 community-living people with FI
  - 42% of the total days that skin was assessed

(Bliss et al., Accepted *JWOCN*)

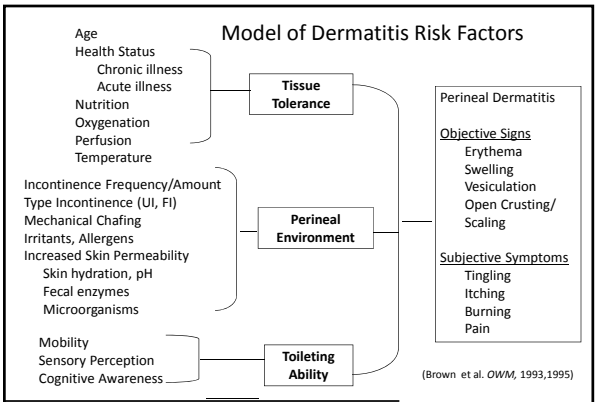
IASD is preventable and curable but potentially recurrent

Risk Factors and Pathophysiology IASD



(Gray et al., *JWOCN* 2012; Berg, *Pediatrics*, 1986; Faria et al., *OWM* 1996 Yosipovitch & Maibach, *Cosmetics Toiletries*, 1996)

Model of Dermatitis Risk Factors



(Brown et al. *OWM*, 1993,1995)

Risk Factors: Time to IASD in ICU Patients with FI

Risk Factor	Relative Risk (95% confidence interval)	p-value
APACHE II score	1.06 (.98, 1.13)	.13
Perfusion[1]		
on vasoactive drugs and mode of mean arterial pressure (MAP) ≥ 70	1.2 (.34 - 4.2)	.79
no vasoactive drugs and MAP < 70	1.1 (.42 - 2.7)	.90
on vasoactive drugs and MAP < 70	1.8 (.79 - 4.2)	.16
Fecal Incontinence[2]		
stool was incontinent and formed	1.02 (.50 - 2.1)	.96
stool was incontinent and loose or liquid	1.5 (1.01 - 2.2)	.04
Diminished cognitive awareness	1.13 (1.007 - 1.3)	.04

Reference levels for regression analysis: [1]no vasoactive drugs and mode of MAP ≥ 70; [2]continent stool; Bliss et al., *JWOCN* 2011

IASD Risk Factors in Community Dwellers

- IASD incidence associated with
- Greater fecal incontinence severity score
  - The fecal incontinence severity score for subjects that developed IASD was 1.2 higher than those who never had IASD (β (seβ)) = 1.2 (0.34), p < .001)
- No difference in IASD
  - By gender, age, or presence of urinary/dual incontinence
    - IASD incidence in men vs women (12% vs 40%, p =.35)
    - Older (≥ 65 years) vs younger subjects (40% vs 37% p =.61)
    - In dual incontinence vs. fecal incontinence only (55% vs 62%, p = .48)

Bliss et al. Accepted JWOCN)

IASD Risk Factors in Community Dwellers

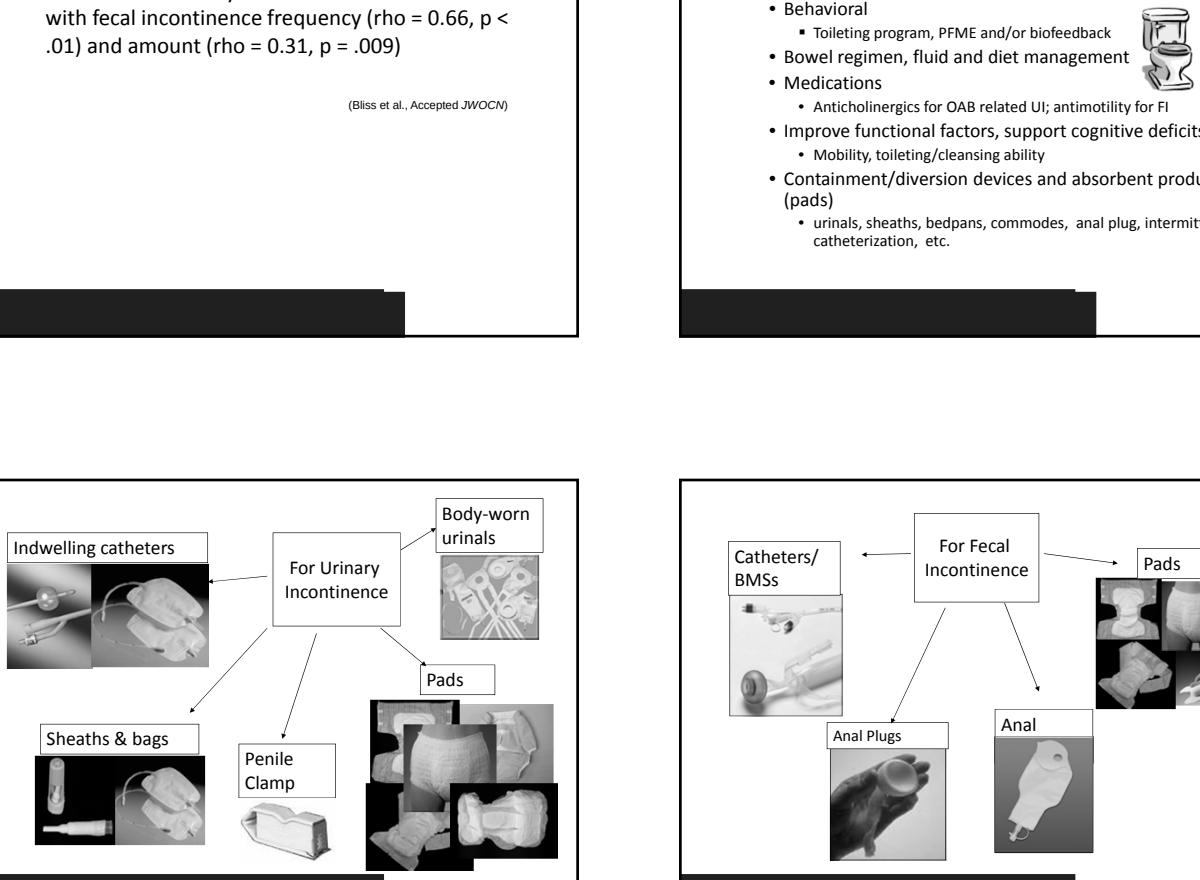
- The number of body areas with IASD was associated with fecal incontinence frequency (rho = 0.66, p < .01) and amount (rho = 0.31, p = .009)

(Bliss et al., Accepted *JWOCN*)

IASD Prevention and Management

1) Prevent/Reduce/Manage Incontinence

- Behavioral
  - Toileting program, PFME and/or biofeedback
- Bowel regimen, fluid and diet management
- Medications
  - Anticholinergics for OAB related UI; antimotility for FI
- Improve functional factors, support cognitive deficits
  - Mobility, toileting/cleansing ability
- Containment/diversion devices and absorbent products (pads)
  - urinals, sheaths, bedpans, commodes, anal plug, intermittent catheterization, etc.



(Cottenden et al., 2013, In *Incontinence* 5th ed. The Netherlands: ICUD-EAU Publishers)

(Cottenden et al., 2013, In *Incontinence* 5th ed. The Netherlands: ICUD-EAU Publishers)

Prevention and Treatment of IASD

Features of Absorbent Products

- Size and fit selection
- High absorbency
  - Keep feces away from skin
- Low leakage
- Maintain acidity of skin pH
- Breathable materials
- Odor control
- Don't interfere with skin protectants
- Body worn vs. pads option

(Cottenden et al. In *Incontinence* by Abrams et al. (Eds), 2013; Bliss et al. *JWOCN* 2011; Beguin et al. *BMC Geriatrics*, 2010; Sugama et al., *BMC Geriatrics* 2012; Rees & Pagnamenta, Primary Health Care 2010; Zehrer et al., *OWM*, 2005; Continence Products Advisor http://www.continenceproductadvisor.org/)

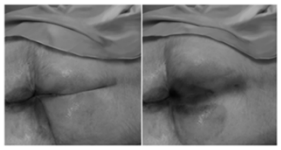
IASD Prevention and Management: Skin Care

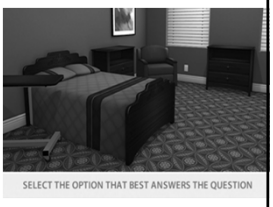
- Timely cleansing of soiling
  - Cleansers that maintain normal acidic pH of skin
  - Soap & water not recommended
  - Gentle cleansing, soft cloth
- Apply moisturizer (emollient +/-humectant) esp. on dry skin
- Apply protectant to skin areas that might come into contact with urine or feces
- Use defined skin care regimen routinely

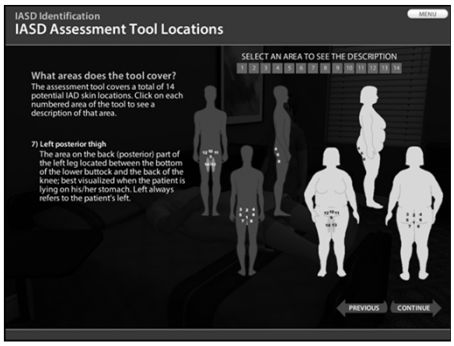
Reviews Supporting Recommendations for IASD Prevention and Management

- Le Lievre *Br J Comm Nurs*, 2001
- Gray *JWOCN*, 2004
- Ersser et al. *Internat J Nurs Studies*, 2005
- Gray et al. *JWOCN*, 2007
- Rees & Pagnamenta *Nurs Times*, 2009
- Beeckman et al. *J Adv Nurs*, 2009
- Nix & Haugen *Drugs &* Aging, 2010
- Gray *Am J Clin Dermatol*, 2010
- Beeckman et al. *Skin* 2010
- Beeckman et al. *Nurs Times*, 2010
- Voegeli *Br J Nurs*, 2010
- Black et al. *JWOCN*, 2011
- Langemo et al. *Adv Skin Wound Care*, 2011
- Gray et al. *JWOCN*, 2012
- Doughty et al. JWOCN 2012
- Zulkowski *Adv Skin Wound care*, 2012
- Bardsley *Nurs Stand*, 2013
- Kottner et al. *Br J Derm*, 2013

IASD Educational Simulation Game

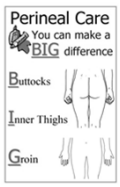






IASD Nursing Staff Education

- Education Reinforcement and Follow-up
  - Reminders, monitoring, positive reinforcement of regimen use
    (Bliss et al., *JWOCN* 2007, OWM, 2006)
- Empowerment of staff
  - Opportunity for advancement, knowledge gain, access to resources, rewards, decision-making, policy influence) (Barry et al., *Gerontol* 2005)



Current Recommendations Summary

- Learn to assess Dark Skin
- Manage incontinence and prevent IASD
  - Devices/absorbent products
- To prevent/treat IASD
  - Use defined skin care regimen
  - Timely, gentle cleansing (not soap & water)
    - Maintain normal acidic skin pH
  - Apply moisturizer (emollient +/- humectant)
  - Apply skin protectant
    - Use anti-fungal as needed
- Educate/consult to staff

Standard Terminology
Marcus Drake

- What does "LUTS" mean?
- How are individual LUTS defined?
- Using the terms precisely

Neurourology and Urodynamics

Developing Evidence-Based Standards for Diagnosis and Management of Lower Urinary Tract or Pelvic Floor Dysfunction

Peter F.W.M. Rosier, Dirk de Ridder, Jane Meijlink, Ralph Webb, Kristene Whitmore, and Marcus J. Drake*
International Continence Society Standardization Steering Committee, UK

More storage problems…

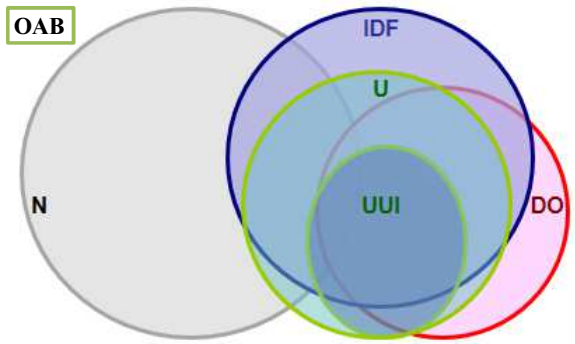
- OAB; urgency, with or without incontinence, usually with frequency and nocturia
  - Exclude causes of similar symptoms
- Detrusor overactivity; bladder contractions during the storage phase which may be spontaneous or provoked
- Neurogenic; OAB/DO where there is a relevant neurological condition

Essential terminology

The micturition cycle
- Storage phase
- Voiding phase

LUTS
- Storage LUTS
- Voiding and post voiding LUTS

International Continence Society *Standardisation Committee*
Abrams et al. 2002; "standardisation of terminology of lower urinary tract function"



IDF; increased daytime frequency, U; Urgency, N; Nocturia, UUI; urgency urinary incontinence, DO; detrusor overactivity

Drake M. Campbell Walsh Urology, 11th Edition

Key terms in **storage LUTS**

- *Urgency:* a sudden compelling desire to pass urine which is difficult to defer
- *Increased daytime frequency:* the complaint by a patient who considers that he/she voids too often by day
- *Nocturia:* the complaint that the individual has to wake at night 1 or more times to void

Storage LUTS; Nocturia

- Complaint that the individual has to wake at night one or more times to void, each void is preceded and followed by sleep
- The void when you get up in the morning…

…does not count as nocturia, but the urine passed is part of the nocturnal urine production

- If they don't get back to sleep; "nocturnal frequency"

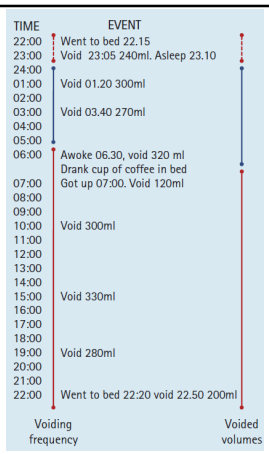
Don't confuse urine production with LUTS

Global polyuria; production of more than 2.8L of urine in 24 hours in a 70kg adult

- Nocturnal polyuria (NP) is present when an increased proportion of the urine output is produced at night (usually while in bed)
  - NP; nocturnal urine volume >20-30% of total 24 hour urine volume (age dependent)
  - Most common figure used is 33%

Key terms for **voiding LUTS**

- Slow stream: Reduced urine flow
- Intermittent stream: flow stops and starts one or more times during micturition
- Hesitancy: Difficulty in initiating voiding
- Straining: Muscular effort to start or maintain voiding
- Terminal dribble: prolonged final part of micturition



Nocturia *twice*
Nocturnal frequency *twice*

Global polyuria *no-*
(depending on body weight)

Nocturnal polyuria *yes*

Voiding failure

- Mechanisms causing voiding/ post mict LUTS
  - Bladder outlet obstruction (BOO)
  - Detrusor underactivity (DUA)
- ***BOO*** is characterised by increased detrusor pressure and reduced urine flow rate.
- ***DUA;*** contraction of reduced strength and/or duration, resulting in prolonged bladder emptying and/or a failure to achieve complete bladder emptying within a normal time span.

Storage failure; Urinary incontinence (UI)

Complaint of any involuntary leakage of urine

- Stress UI: leakage on effort or exertion, or on sneezing or coughing
- Urgency UI: leakage accompanied by or immediately preceded by urgency
- Mixed UI: leakage associated with urgency and also exertion, effort, sneezing or coughing
- Mixed incontinence; urinary & faecal incont.

- BPE- Benign prostate enlargement (outward growth felt on DRE)
- BPO- Benign prostate obstruction (inward growth leading to low flow rate despite high bladder pressure)
- BPH- hyperplasia seen on microscopy

The Underactive Bladder: A New Clinical Concept?

Christopher R. Chapple[a,], Nadir I. Osman[a], Lori Birder[b], Gommert A. van Koeveringe[c], Matthias Oelke[d], Victor W. Nitti[e], Marcus J. Drake[f], Osamu Yamaguchi[g], Paul Abrams[f], Philip P. Smith[h]*

"The underactive bladder is a symptom complex suggestive of detrusor underactivity and is usually characterized by prolonged urination time with or without a sensation of incomplete bladder emptying, usually with hesitancy, reduced sensation on filling, and a slow stream"

Post micturition LUTS

- Post micturition dribble
- Feeling of incomplete emptying

Management of UTI's in neurogenic patients

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Objectives

- Overview of the general discussion about urinary infection in the neuropath
  - Urinary contamination
  - definition
- How to deal with the main clinical situation
  - Self catheterisation
  - Urinary diversion
- Is urinary infection a infectious proble or a neurourolgoical problem?

UTI in neurogenic patients

- Probably first or second cause of death in the SCI population
  - Soden et al (2000). Spinal Cord; De Vivo (1993) Arch Phys Med
- First cause of rehospitalization : 43% for tetraplegic patients
  - Vaidyanathan S. Spinal cord, 1998,36:838-46

UTI in neurogenic patients

- 80 % were treated for symptomatic UTI five years after injury
  - Biering-sorensen et al (1999). Scand Urol Nephrol 33: 157-161
- 34 % of patients with SCI suffered of pyelonephritis after 29 yrs of follow-up
  - Ku 2005 Urol Res
- Few data in MS patients but primary discharge diagnosis in MS older than 65 yrs
  - Fleming ST (1994) J Clin Epidemiol

Definition of UTI: Which criteria?

- Various biological and clinical criteria used in the litterature
- Symptoms are not specific (leakage, dysuria, chills, spasticity, autonomic dysreflexia….)
- Asymptomatic Bacteriuria is frequent in this population
- No consensus on the criteria in the litterature

Prevention and Management of Urinary Tract Infections in Paralyzed Persons Agency for Health Care Policy and Research 1999

Population are not comparable

- Disease
- Sex, age
- Type of voiding management
  - from indwelling caths, CIC, to reflex micturition
- Association to immunosuppressive drugs (MS patients)
- Risk for upper urinary tract
- Acute SCI vs non acute SCI patients
- Bladder management

And …

- High number of patients with multidrug resistant bacterial isolated in this population
- 33% of species isolated from 766 samples. More frequent in young male patients with condoms and indwelling catheters
  - WAITES KB Arch Phys Med 2000

Management of bacteriuria

- **Very strong consensus for not treating patients with bacteriuria without symptoms**
  - very high level of asymptomatic bacteriuria
  - Bakke 1997 BJU Waites 1993 Arch Phys Med
- **Except for invasive urologic procedures such as urodynamics, cystoscopy**
  - Esclarin de Ruz 2000 J Urol, Darouiche J Hosp Infec 1994
- No consensus for MS patients under immunosuppressive drugs except for medicolegal issues

A innovative multidisciplinary concept

Journal of Antimicrobial Chemotherapy
doi:10.1093/jac/dkl010

JAC

Prevention of urinary tract infection in spinal cord-injured patients: safety and efficacy of a weekly oral cyclic antibiotic (WOCA) programme with a 2 year follow-up—an observational prospective study

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Received 17 August 2005; returned 20 September 2005; revised 13 December 2005; accepted 27 December 2005

Inclusion criteria

Patients >18 years old
Spinal cord injury with controlled neurological bladder activity
Self-clean intermittent catheterization (5/day)
Frequent UTI

⇓

At inclusion

Complete medical history, including allergy
Hospitalization (number, length)
UTI (severity, number, type)
Antibiotic therapy (number, length, type)
Analysis of weekly urine sample culture for 6 weeks
Testing for MDR bacteria in anal and urine samples

⇓

Antibiotic cycling choice

According to allergy and antimicrobial susceptibility
2 antibiotics (A, B): a heavy dose once weekly
Week A: antibiotic A
Week B: antibiotic B
Trimethoprim/sulfamethoxazole (TMP) 320–1600 mg or
Cefixime (CFX) 400 mg or
Fosfomycin tromethamol (FSF) 6000 mg or
Nitrofurantoin (NTT) 300 mg or
Amoxicillin (AMX) 3000 mg
Gram-negative bacteria: TMP or CFX or NTF or FSF
Gram-positive bacteria: FSF or AMX

⇓

Follow-up under WOCA

Clinical: efficiency, UTI, hospitalization, antibiotic courses, allergy and tolerance.
Bacteriological: urine sample culture, modification of ecology, MDR bacteria.

⇓

WOCA unchanged or modified

Results

Variables	Before WOCA	Under WOCA	p
UTI /year/person	9.4	1.8	0.0002
Severe UTI /year/person	0.74	0.31	0.04
Hospitalization /year/person	0.23	0.09	0.0012
Broad spectrum ATB	77 %	12 %	0.0001
MDR colonized patients	6 / 38	2 / 38	

Ideal treatment goals of symptomatic UTI

- Better treatment of symptoms
- Lower rate of relapse
- Lower rate of reinfection
- And lower rate of resistance

Antibiotic therapy for patients with symptomatic infections

- Criteria for treatment remain unclear
- Few interventionnal studies
- Duration of treatment
  - One study 3 vs 14 days ciprofloxacin 250 mgr BID
  - Better biological relapse and symptomatic relapse at Week 6 with 14 days
  - But reinfection rate with another species is the same in the two groups (Dow G CID 2004)
  - 14 days of norfloxacin induced 16% of resistance Waites KB 1991 Urology
- But what about 5, 7, 10 days and with other antibiotics ?
- Recommandations for non neurogenic 3 = 7 days for symptoms longer duration is better for bacteriological cure Cochrane Data base 2006

Antibiotic treatment for symptomatic UTI

- Unclear strategy symptomatic UTI, prostatitis and pyelonephritis
- Duration of treatment undefined clearly
- Diagnosis of acute prostatitis vs pyelonephritis remains uncertain (K Everaert Spinal Cord 1998) in case of fever despite the value of PSA
- But information and algorythm of treatment is clearly requested for patients and GP because
  - A lot of variation even in the same country Bycroft NeuroUrol 2004
  - Information may reduce UTI in the population of SCI patients Cardenas J Spinal Cord Med 2004
  - Urological follow up is crucial in ensuring that adequate bladder drainage is achieved avoiding indwelling catheters

Key messages

- Voiding management and bladder control are key points for urinary tract prevention in neurogenic patients
- Presence of bacteriuria does not mean infection:
  - Definition has to take into account general symptoms and presence/absence of general signs of infection (fever?)
- If a treatment has to be used, WOCA or similar program have to be promoted
- As a GP practice, strong efforts have to be made to promote a well balanced information on this topic

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Notes