Continence Basics and Preparation for Certification Test

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Objectives

- Review highlights of continence content for WOC certification examination
- Define urinary and fecal incontinence and related bowel elimination and lower urinary tract symptoms
- Discuss assessment of UI and FI, including the perineal skin
- Outline options for managing FI and UI, as well as bowel elimination symptoms and LUTS
Faculty Disclosures: none

Urinary Incontinence

Definition: complaint of any involuntary leakage of urine\(^1\)
- Clinicians focus on sufficient urine loss to be defined as a problem by person or care provider

UI: complaint of any involuntary leakage

Pathophysiology: Acute/Transient UI

- Associated factors
  - Delirium
  - UTI
  - Medications (diuretics, α-adrenergic blockers, ACE inhibitors)
  - Polyuria (DM, DI, excessive fluid intake)
  - Immobility
  - Stool impaction/ severe constipation


Assessment: Key Elements

❖ History:
  – Onset & Duration of UI:
    “Acute” vs. Chronic

❖ Lower Urinary Tract Symptoms (LUTS)
  – Subjective indicators of health problem that lead patient, partner or provider to seek help (or not)
    ◆ Storage LUTS
    ◆ Voiding LUTS
    ◆ Post Void LUTS

Storage LUTS

  – Daytime Voiding Frequency: report of voiding too frequently
    ◆ Reference range: 8 per 24 hour period or every 2 hours or less often while awake
  – Nocturia: interruption of sleep owing to desire to urinate
    ◆ Reference range: 0-2 episodes considered normal range; ≥3 episodes considered clinically relevant
  – UI: involuntary urine loss
    – Stress (physical exertion)
    – Urge (urgency)
    – Mixed

**Storage LUTS**

- **Physiologic desire to urinate**
  - Few words in English found to articulate normal desire to urinate
  - Usually described as tingling, pressure, sometimes described as ‘uncomfortable’
  - Localized to suprapubic area, urethral meatus or urethral course as it nears skin
  - Tends to emerge and fade into consciousness based on psychological, social, cultural factors


- **Differentiate physiologic desire, urgency and pain-induced desire to urinate**
  - **Urgency**: (classic urgency) sudden and strong desire to urinate that is not easily postponed or deferred
  - **Nociceptive urgency**: burning, cramping pain or pressure that provokes urgency as defensive mechanism to relieve discomfort

Voiding and Post Void LUTS

Voiding LUTS
Slow stream (weak stream or poor FOS)
Intermittent stream (stars & stops >1 time)
Hesitancy (difficulty initiating stream)
Terminal dribble (prolonged end to micturition, when the flow has slowed to a trickle/dribble)

Postvoid LUTS
Postvoid dribbling (involuntary loss of urine immediately person has finished passing urine, for men when leaving the toilet)
Incomplete emptying

Assessment: Key Elements

- Review of Systems (highlights only)
  - Urologic: UTI, stones, tumors, etc.
  - GYN: OB history, menstrual status, prolapse
  - Male Reproductive: prostate problems, stricture
  - GI: bowel elimination patterns, fecal continence
  - Neurological: CNS disorders, disc disease, neurogenic bladder triad (bowel, bladder, sexual dysfunction)

Assessment: Current Medications

- Diuretics: increase urine volume
- Sedatives/ hypnotics/ opioid analgesics/ anxiolytics: detrusor relaxation and diminished awareness of bladder fullness
- Antidepressants/ antipsychotics/ drugs for parkinsonism: anticholinergic effect
- Calcium channel blocker: reduce detrusor contraction strength
- α-Adrenergic agonists (decongestants): increase risk of urinary retention with obstruction, improve SUI
- ACE Inhibitors (“prils”): cough may exacerbate SUI

Assessment: Key Elements

- Physical Examination
  - **General**: mobility, dexterity, cognition, motivation & goals of therapy
  - **Environmental Assessment**: access to toilet, lighting, need for assistive devices, appropriateness of clothing, may time toileting access¹

Assessment: Key Elements

Percuss abdomen for urine in bladder

Bladder above umbilicus: ≥ 500ml
Any percussive dullness: ≥ 150 ml

Inspect perineal skin for MASD

- IAD: erythema ± erosion (denudation) of skin when exposed to urine stool
- Follows skin folds and not bony prominences
- Full thickness wound, necrotic tissue = PU

Assessment: Key Elements

- Pelvic examination: woman
  - Urogenital atrophy
  - Vaginal wall prolapse

Pelvic Organ Prolapse: ACOG Grading System

- Grade 1 POP
- Grade 2 POP
- Grade 3 POP
- Grade 4 POP
Assessment: Key Elements

Digital Rectal Examination (DRE)

Evidence of prostate CA

Crude assessment of size, does not evaluate magnitude of obstruction


Urinary Incontinence

- Assess Pelvic Floor Muscle Strength
  - **Absent**: no pressure, no displacement of finger
  - **Weak**: slight pressure on finger, lasts < 1 second, base of finger slightly elevated
  - **Strong**: circumferential pressure, duration > 3 seconds, fingers elevated and move toward posterior vault
Assessment: Routine Studies

- Urinalysis
  - Dipstick:
    - UTI (nitrites & leukocytes)
    - Diabetes mellitus (glucose)
    - Diabetes insipidus/ water intoxication (specific gravity)
    - LUT tumor (blood, RBC)
  - Microscopic examination
    - UTI (WBC & bacteria)
    - LUT (red blood cells)

More Complex Voiding Diary

- Diary must balance simplicity with details needed for clinically relevant assessment

Electronic Voiding Diary: Is there an app for that?

- Electronic diaries have been used for drug trials, typically based on PDA technological base with limited success
- At least one smart phone applications available (iP Voiding Diary by Synappz Medical Apps)
  

Assessment: Additional Studies

- Post void residual volume:
  - Catheterization
    - Obtain as close to urination as possible
    - Inexpensive but invasive & carries 1%-2% risk of UTI
    - Cut point for further inquiry: 150-250ml
**Assessment:**

**Additional Studies**

- Ultrasonic PVR:
  - More expensive but noninvasive with no risk of UTI
  - Reasonable accuracy as compared to cath
  - Equipment easy to learn and use

**Diagnostic Tests**

- Urodynamic Testing
  - Highly selected patients
  - Characterizes UI type
  - Determines cause of urinary retention
  - Value limited in moderate to severe cognitive impairment
Management Options

- Behavioral
  - Fluid & lifestyle alterations
  - Pelvic floor muscle training
- Pharmacologic
  - Antimuscarinics
  - Other agents
- Surgical management

Healthy Bladder Habits

- What healthy bladder habits can be reasonably recommended?
  - Fluid and Dietary Strategies
  - Voiding Habits
  - Constipation Prevention/ Management
  - Weight Control
  - Smoking cessation
  - Pelvic Floor Muscle Exercises

Healthy Bladder Habits?

- **Fluid Intake**
  - Avoid extremes (consumption of high volumes of fluid or fluid restriction)
  - US Food & Science Board RDA for fluids: 30ml/kg/24 hr or ½ oz/lb/day (ambulatory person, moderate climate)
    - Approximately 1.5-2.2 liters in adult women, 1.5-2.3 in adult men; 1.2-2.3 in adults > 70 years of age
    - Children aged 1 to 3 years 1.0 to 1.5 liters
    - Children 4 to 8 years 1.2 to 1.9 liters

1. IOM/ US Food & Science Board: Dietary Reference Intake for Water & Sodium. URL: [http://www.iom.edu/Global/News%20Announcements/~/media/442A08B899F44DF9AAD083D86164C75B.ashx](http://www.iom.edu/Global/News%20Announcements/~/media/442A08B899F44DF9AAD083D86164C75B.ashx)

Healthy Bladder Habits: Fluids

- Existing evidence suggests that
  - ↑ fluid intake to RDA ranges diminishes the risk of recurring UTI¹
  - ↓ fluid intake to RDA among persons who routinely consume higher volumes reduces daytime voiding frequency, nocturia and UI frequency¹,²
  - ↑ fluid intake, (especially water intake) to RDA ranges reduces the risk of urothelial cancers¹,³

Healthy Bladder Habits: Bladder Irritants

- Strongest evidence associates caffeine intake ≥ 450mg/day with increased risk for urgency and urge incontinence in adult women\(^1\)
- Expert opinion associates other bladder irritants with symptom exacerbations in persons with overactive Bladder and Urinary Incontinence\(^2\)
- Evidence about caffeine reduction and its impact on UI frequency or severity is especially sparse\(^3\)
- Sparse evidence suggests that reducing caffeine intake may reduce LUTS: urgency and voiding frequency\(^4\)


Voiding Habits

- Void on a regular basis
  - (≤ 8 /24 hours or ≥ 2 hours while awake)
  - Attend to the desire to void
  - Lack of job control associated with higher likelihood of LUTS in employed Chinese women (i.e.: toilet access at work)\(^1\)
  - Position matters: hovering behaviors have been associated with pelvic floor muscle contraction, interrupted stream and incomplete bladder emptying\(^2,3\)

Healthy Bladder Habits:
Prevention/Management Constipation

- Constipation has been associated with urinary incontinence, vesicoureteral reflux, and urinary tract infections in children\(^1\,^2\).
- Successful resolution of constipation has been associated with resolution of UI, UTI and low grade reflux in children.
- Expert opinion suggests that constipation/impaction and rectal distension impair healthy bladder function; however, urodynamic studies of 20 children with LUTS with or without constipation revealed variable results of rectal distension; stimulating bladder emptying in some while impairing emptying in others.


Healthy Bladder Habits:
Prevent or Manage Constipation

- Fluid
- Fiber
- Recreational exercise
- Stool softeners, laxatives

- Multiple “recipes” available online\(^1\)
  - 1 cup unprocessed wheat bran, 1 cup applesauce and ½ cup prune juice and refrigerate.
  - Take 2 Tablespoons q day with water or juice, allow 1 week for bowel movements to become soft and regular.
  - Increase by 1-2 Tablespoon per week, up to 8 Tablespoons.

1. URL: [http://www.waisman.wisc.edu/~rowley/sh-kids/recipes.html](http://www.waisman.wisc.edu/~rowley/sh-kids/recipes.html)
Healthy Bladder Habits: Weight Control

- Epidemiologic evidence strongly suggests that obesity is an independent risk factor for urinary incontinence1,2
  - 20%-70% increase in urinary incontinence risk with every 5 unit increase in Body Mass Index (BMI)
  - Incidence of urinary incontinence over 5-10 year period rose 30% to 60%
  - Risk of stress urinary incontinence may be greater than urge incontinence or overactive bladder
  - Even moderate weight loss has been shown to reduce frequency and severity of incontinence


Healthy Bladder Habits: Smoking Cessation

- Abundant evidence links smoking and bladder cancer risk1,2
  - Smokers have 2-3 time risk for bladder cancer when compared to non-smokers
  - Risk influenced by smoking duration, number of cigarettes smoked per day, total exposure (pack-years)
- Smoking associated with greater likelihood of lower urinary tract symptoms in population based sample of 3143 men3
- Smoking found to ↑ risk for urgency in 1059 older women and men4

Managing UI

- Containment Devices: vital role in transient management such as acute or critical care setting; they do not a substitute for a reasonable assessment and individualized treatment plan
  - Feminine hygiene pads or household products not designed for urine containment and perform poorly
  - Disposable versus reusable
  - Fit device to volume (severity) of incontinence & presence or absence of fecal incontinence

Incontinence Management: Absorbent Products

- Underpad for Bed or Chair: Blue pads
  - Inexpensive
  - Protect bed linen, but, offer inadequate absorbency for major UI accidents; surface not designed to reduce friction
  - Do not prevent wet back (fluid return)
Incontinence Management: Absorbent Products

- **Optimal Underpad**
  - Absorbent core that absorbs moisture and effluent throughout entire surface
  - Surface has low friction coefficient to minimize mechanical skin damage with movement
  - Core and cover-stock prevent wet-back or fluid return

Managing UI

- **Inserts** (liners, shields)
- Plastic backed pads in underclothing
- Adhesive strip or held in place via close fitting underwear or stretch mesh
- Mild to moderate UI, poor for double incontinence
Managing UI Under F315

- Containment briefs
  - Moderate to heavy UI
  - Best suited for double (urinary & fecal) incontinence

External Containment Devices

- No adequate device for women
- Collection device fits around all or part of penile shaft
- Attach to leg bag or other reservoir
- Leg straps can be a problem
Managing UI

- Pelvic Floor Muscle Rehabilitation: 3 essential elements
  - Biofeedback to identify, contract and relax the pelvic floor muscle
  - Muscle training
  - Neuromuscular reeducation: teach the knack, urge suppression, PFM relaxation for voiding efficiency, etc.

PFM: Muscle Training

- Identify pelvic floor muscles
- Begin graded program, start with 5/day and progress to 25-35 per day
- Squeeze pelvic floor muscles and count slowly to 10 (about 10 seconds)
- Relax completely for at least 10 seconds
**PFM Neuromuscular Reeducation: The Knack**

- **Knack**: a learned skill of contracting the striated muscles of the urethra and levator ani at the moment of expected leakage
- Used to prevent or reduce stress UI episodes

Miller JM et al. JAGS 1998; 46(&): 870.

**PFM Neuromuscular Reeducation: Urge Suppression**

- Be Still
- The Urge Grows
- Peaks
- Subcedes
- Wait
- Walk to Bathroom
- Self Reinforcement
- Squeeze Quickly (x5)
- Stops

**Managing UI:**
Scheduled Toileting, Prompted Toileting

- Patient education
- Scheduled voiding regimen
- Urge control strategies
- Self-monitoring
- Reinforcement


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**Antimuscarinics:**
Multiple Drugs in This Category

- **Popular Antimuscarinics**
  - Oxybutynin (M₂ & M₃)
  - Tolterodine (M₂ & M₃)
  - Fesoterodine (M₂ & M₃)
  - Trospium (M₂ & M₃)
  - Solifenacin (M₂ & M₃)
  - Darifenacin (M₃)

- **Older antimuscarinics**
  - Propantheline
  - Hyoscyamine
Managing OAB/ Urge UI: Current Class of Antimuscarinic Drugs

- Tolterodine tartrate
  - Detrol IR (2 mg)
  - Detrol LA (4 mg)
- Fesoterodine fumarate
  - Toviaz (4,8 mg)
- Oxybutynin chloride
  - Ditropan IR (5-15 mg)
  - Ditropan XL (5-15 mg)
  - Oxytrol (TD patch) (1 twice weekly)
  - Gelnique (TD gel) (1 pkg daily)
- Trospium chloride
  - Sanctura IR (20 mg)
  - Sanctura XR (60 mg)
- Solifenacin succinate
  - VESIcare (5, 10 mg)
- Darifenacin HCl
  - Enablex (7.5, 15 mg)

Antimuscarinics: Adverse Side Effects

- Dry mouth
- Flushing
- Heat intolerance
- GI effects (constipation)
- Drowsiness
- Short term memory impairment, behavioral changes in children, nightmares

Red as a beet
Dry as a bone
Blind as a bat
Mad as a hatter
Hot as a hare
Why all the side effects?

**BRAIN**
- Dizziness
- Somnolence
- Impaired Memory & Cognition

**Iris/Ciliary Body** = Blurred Vision
**Lacrimal Gland** = Dry Eyes
**Salivary Glands** = Dry Mouth
**Heart** = Tachycardia (torsade de pointes)
**Stomach** = Dyspepsia
**Colon** = Constipation
**Detrusor** = Urinary retention

*Answer: Muscarinic receptors found throughout the body*

Adapted from Abrams P, Wein AJ. The Overactive Bladder: Widespread and Treatable Condition. Erik Sparre Medical AB; 1998.

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What about the male patient with OAB & BPH?

- Traditionally concerns related to combination therapy focused on risk of creating acute urinary retention in men with BPH and BOO
- Significant and growing body of research supports combination therapy is feasible (safe) and more effective than monotherapy; studies below used tolterodine ± tamsulosin
- Single limitation: men with decompensated detrusor function
**What about use of antimuscarinics in older persons and frail elders?**

- Anticholinergics associated with ↑ risk for cognitive impairment and impaired performance of MMSE\(^1,2\)
  - Existing evidence suggests no apparent adverse cognitive SE with short-term use in the reasonably healthy older person\(^3,4\)
  - Epidemiologic studies suggest that long-term use (>4 years) in community dwelling elders is associated with impaired verbal fluency in women; reduced memory and executive function in men; and ↑ likelihood of dementia in both genders

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**Is prolonged administration of antimuscarinics in frail elders safe?**

- Oxybutynin specifically mentioned as “unsuitable for the elderly” in latest version of the Beers’ criteria\(^1\)
- Cholinesterase reuptake inhibitors (CEI) widely used for treatment of Alzheimer’s disease (AD); however, concomitant use of CEI and antimuscarinics associated with decline in functional status in nursing home residents newly diagnosed with AD\(^2\)
- Although mixed, existing evidence suggests avoiding antimuscarinics in frail elderly or use of the drug with extreme caution

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Antimuscarinics and OAB: Local HRT vs Antimuscarinics

- RCT compared voiding frequency in 59 women allocated to oxybutynin IR 5 mg twice daily or ultra-low dose estradiol ring
  - Drug group mean ↓ of 3.0 voids/day; estradiol ring ↓ voids 4.5 day (p=NS)
  - Both has statistically significant improvements in UDI and IIQ
  - No statistically significant difference between groups


β-3 agonists: New drug class for OAB

- Mirabegron (Myrbetriq) sole agent approved for use in USA as of Spring 2013\(^1\); single German based Phase III trials for solabegron published in 2012\(^2\)
  - Granted IND by US FDA for OAB June 2012
  - Dosage: 25-50 mg once daily in US; dosage up to 100 mg approved by EMEA
  - Swallow whole, do not crush or chew
  - Metabolized primarily via CYP2D6 pathway
  - Some prolongation compared to placebo on QTcI interval at 4-5 hours post-dose was 3.7 msec (upper boundary of 95% CI was 5.1msec)

1. Mirabegron Prescribing insert: [http://www.myrbetriqhcp.com/Content/pdfs/Myrbetriq_WPI.pdf](http://www.myrbetriqhcp.com/Content/pdfs/Myrbetriq_WPI.pdf)
**Mirabegron: Reported SE During Phase III Trials**

- Hypertension: 7.5% - 11.3%*
- Dry mouth: < 3%
- UTI: 2.7%-3.7%
- Headache: 2.0%-2.7%
- Nasopharyngitis: 2.5%-3.4%


* Mean maximum ↑ in systolic/diastolic blood pressure 3.5 and 1.5 mmHg over placebo

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**OAB: Pharmacologic Target 3**

**Botulinum Toxin A**

- Injected into bladder under endoscopic guidance at multiple sites
- Usual dose 200-300 IU


**Pivotal Trial for Botulinum Toxin A: Adverse Side Effects (Treatment Cycle 1)**

- UTI 56%- 64%
- Urinary Retention 20%- 32%
- Hematuria 6% - 8%
- Dysuria 2% - 6%
- Constipation 1% - 6%

Neuromodulation for Urge UI/OAB:
Posterior Tibial Nerve Stimulation

- How is the electrical simulation delivered?
  - Acupuncture needle placed adjacent to the posterior tibial nerve at the ankle
  - Stimulation for 30 minutes; maximum tolerable voltage encouraged while remaining below pain threshold
  - Weekly sessions for 12 weeks recommended

Surgical Management:
Stress UI

- Suburethral injections
  - GAX collagen
  - Silicone beads
  - Autologous fat
- Injected under endoscopic guidance; outpatient procedure
- Durability limited

**Surgical Management: Stress UI**

- Suburethral slings
  - Fascial (↓ popularity)
- Synthetic materials
  - Tension-free vaginal tape (TVT): passes under the mid-urethra, then under pubic bone bilaterally to exit skin over the pubic bone
  - Transobturator tape (TOT): passes under the mid-urethra, then through the obturator membrane bilaterally to exit the skin of the groin through needle incisions
  - Minimally invasive, outpatient procedures; currently predominate

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**Managing Urge UI: Surgery**

- Interstim Device
- Surgically implanted device
- Lead implanted into S3 sacral foramen to stimulate sacral nerve root
- Screening with percutaneous device recommended

Fecal Incontinence and Bowel Elimination Disorders

Defecation Disorders and FI: A Brief Overview

- **Definitions**
  - **Diarrhea**: broad term usually applied to frequent passage of liquid stools, most critical element appears to be consistency and not frequency¹
  - **Constipation**: change in normal fecal elimination characterized by decreased frequency, passage of hard/dry stools, often with straining²
  - **Obstructive defecation disorders**: difficulty passing stool and constipation in the presence or obstructed rectal vault outlet²

Defecation Disorders and FI: A Brief Overview

- **Definitions**
  - **Irritable bowel syndrome**: chronic, recurrent characterized by abdominal pain, bloating and distension, characterized by constipation predominance, diarrhea predominance or a cyclical pattern of constipation followed by diarrhea as so forth
  - **Fecal Incontinence**: involuntary passage of solid or liquid stool, some include involuntary passage of gas from the bowels

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Epidemiology: Fecal Incontinence

- **Community dwelling elder adults**: ≈ 11%-15%\(^1\) (estimate range excludes flatus incontinence only)
  - Adults with Spina bifida: 34%\(^2\)
  - Adult women with pelvic organ prolapse: 28%\(^3\)

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Factors Critical to Fecal Continence

- Normal Peristalsis
- Sensory awareness of presence of stool in rectal vault and perception of stool consistency (solid, liquid, gaseous)
- Adequate capacity and compliance of rectal vault
- Normal sphincter (and PFM) function

Defecation Physiology

- Colon
  - 1.2-1.5 meters; 8 sections
  - Cecum & ileocecal valve, efflux from small to large; prevents reflux
  - Ascending, transverse (major role in storage & mixing contents)
  - Descending & sigmoid: primarily conduits for delivery to rectum
Defecation Physiology

- **Rectum**: 15cm; receives content from sigmoid (S shaped) distal loop
- **Anal canal**: 3cm, dentate line samples liquid, solid, gaseous
- **Anal sphincters**: internal (smooth mm) and external (skeletal mm)

Defecation Physiology

- **Formation of stool**
  - Combination of motility, absorption and excretion or retention of contents in fecal stream
  - Colon absorbs 1-2 liters/day, up to 5 or 6 with dehydration, affected by diet and intrinsic factors
  - Motility in colon can be very rapid, rectocolonic reflex moves bolus into rectum over a period of seconds to minutes and triggers urge to defecate, usually following a meal; this reflex can be postponed by contraction of external anal sphincter and PFM
Fecal Incontinence

- Causative Factors
  - High volume liquid stool overwhelming continence mechanisms
  - Neurologic lesions compromising critical elements of fecal continence
  - Trauma affecting PF, anal sphincter mechanism or afferent pathways (most common cause is obstetric)
  - Acute or chronic rectal vault inflammation compromising capacity and possibly compliance of bowel wall

Fecal Incontinence: Assessment

- Bowel elimination habits
  - Frequency
  - Volume
  - Stool consistent (recommend use of Bristol Stool Chart)
  - Continent and involuntary stools
  - Past/present use of laxatives suppositories
Fecal Incontinence: Assessment

- **Anorectal Examination**
  - Sensory awareness
  - PM/ anal sphincter tone, ability to identify contract and relax anal sphincter
  - Presence of stool in vault

- **Abdominal examination**
  - Dilated bowel loops

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**Fecal Incontinence: Assessment**

- **Additional Testing**
  - Motility studies for constipation refractory to first line interventions
  - Anorectal ultrasound for sphincter “mapping”
  - Anorectal manometry for evaluation of anal sphincter tone and internal (smooth mm) sphincter
  - Defecography for problems with eliminating soft stool
Bowel Management

- **Initial Interventions**
  - Eliminate impaction and normalize stool consistency to soft and formed (cleansing enema; laxative use)
  - Diarrhea: identify & correct causative factors, administer bulking and antimotility agents
  - Constipation: fluid + fiber + recreational activities/exercise; administer stool softener-stimulant combination
  - Modulate defecation behavior: respond promptly to signal to defecate, correct positioning, breathing techniques

Fecal Incontinence: Containment Devices

- **Anal Pouch**
  - Uses pouching technology to contain stool
  - Appropriate for liquid stool
  - Adherence, stool seepage, undermining are ongoing challenges
**Bowel Management**

- ‘Rectal Catheter’ or Nasal Trumpet
  - Use larger indwelling urethral catheter or nasal trumpet for containment of stool
  - Case series & studies generally positive; safety & efficacy not documented
  - “Off-label” use of products


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**Bowel Management**

- Flexi-Seal Fecal Management System
  - Containment system for liquid or semi-liquid stool
  - Silicone components; retention via inflatable retention balloon; inflated with 45ml saline, collection bag holds about 1 liter
  - Intended for ≤ 29 days of use
  - Seepage of small amount fecal effluent around tube expected
**Bowel Management**

- **Zassi Bowel Management System**
  - Retention balloon designed to promote insertion and retention
  - Collapsible segment to preserve sphincter closure
  - Large bore drainage tubing connects to 3 liter drainage bag
  - Ports for irrigating drainage tubing, inflating retention cuff and liquifying solid stool

**Bowel Management Systems**

- **Dignicare**
  - Retention balloon
  - Internal irrigation device
  - Ball valve device
  - Similar indications to other systems
Bowel Management

- Promote effective bowel elimination
  - Pay attention to gastroenteric reflex
  - Establish regular schedule
  - Remember normal variability (once a day is not golden rule)
  - Use mild stimulant such as caffeine as needed
  - Counsel regarding position/posture

Stimulated Defecation

- Indications: patient unable to sense rectal filling and/or control anal sphincter
- Goal: regular, scheduled defecation to prevent spontaneous (unscheduled) ones
- Interventions
  - Establish schedule
  - Use peristaltic stimulate to deliver stool to rectum (digital stimulation, suppository, mini-enema, tap water enema with retention balloon)

**FI: Management**

- PFM dysfunction or mildly diminished sensory awareness may respond to pelvic PFMT/ PMR\(^1\) (weak evidence only)
- Biofeedback directed PFMT/ PMR may benefit patient with functional obstructive defecation\(^1\) disorder (weak evidence only)
- Electrical stimulation of anal sphincter/ PFM may benefit women with obstetric related trauma\(^2\) (weak evidence only)


**FI: Management**

- **Surgical Options**
  - Segmental resection for patient with chronic inertia
  - ACE procedure (frequent need for revision, about 50% experience significant improvement)\(^1\)
  - Colostomy

Examination Resources:

Online Resources
- Provides content and items per major topic
  - General Principles of Assessment (FI & UI): 38 items
  - Differentiate and manage UI types: 28 items
  - Types of Bowel dysfunction: 8 items

WOCNCB: Study Resources

Textbooks
WOCNCB: Study Resources Indwelling Catheter Management/CAUTI

- Diana Parker; Laurie Callan; Judith Harwood; Donna Thompson; Marilyn-Lu Webb; Mary Wilde; Margaret Willson; Clinical Practice Continence Subcommittee. Catheter-Associated Urinary Tract Infections: Fact Sheet.

WOCNCB: Study Resources: Bowel/Fecal Management Systems