Female Urinary Incontinence

2019 ACP Utah Scientific Meeting

March 1-2

Yvonne Hsu, MD

Urogynecology LDS Hospital
Comprehensive review

- Urinary incontinence in women: A review
- Emily Lukacz, Yahir Santiago-Lastra, Michael Albo, Linda Brubaker. JAMA. 2017; 318(16): 1592-1604
High Prevalence no matter who you ask

- 50% of all adult women
- 17% in women >20 and 38% in women >60
- 37% of women 30-50
Few women are treated

- Only 25% of affected women seek care
- < half of those receive treatment=
- 12% treatment rate for a condition that affects millions of women
How do you screen?

- During the past 3 months, have you leaked urine (even a small amount)? Yes  No
Intermountain Care Process Model
Incontinence Questionnaire

Today's date: ___________________
Patient name: ___________________ Sex: _______ Date of birth (mm/dd/yy): __________________________
Address: _______________________ City: _______ State: _______ Zip: _______

Part 1. Initial Evaluation: answer the questions in this shaded area the first time you discuss incontinence (urine leaking) with your doctor. (check all that apply)

During the last 3 months, did you leak urine...

- a. When you were doing some physical activity (like coughing, sneezing, lifting, or exercising)?
- b. When you had the urge or feeling that you needed to empty your bladder — but you couldn’t get to the toilet fast enough?
- c. Without physical activity and without a sense of urgency?

During the last 3 months, did you leak urine most often...

- a. When you were doing some physical activity, like coughing, sneezing, lifting, or exercising?
- b. When you had the urge or feeling that you needed to empty your bladder — but you couldn’t get to the toilet fast enough?
- c. Without physical activity and without a sense of urgency?
- d. About equally as often with physical activity as with a sense of urgency?

Part 2. Ongoing Evaluation: answer the questions below every time you discuss urinary incontinence with your doctor. For each question, please CIRCLE the response that best describes your situation. Add any comments in the box below.

How much has urine leakage affected you...

- ability to do household chores (cooking, housecleaning, laundry)?
  - not at all
  - slightly
  - moderately
  - greatly

- physical recreation such as walking, swimming, or other exercise?
  - not at all
  - slightly
  - moderately
  - greatly

- entertainment activities (movies, concerts, etc.)?
  - not at all
  - slightly
  - moderately
  - greatly

- ability to travel by car or less than 30 minutes from home?
  - not at all
  - slightly
  - moderately
  - greatly

- participation in social activities outside your home?
  - not at all
  - slightly
  - moderately
  - greatly

- emotional health (anxiety, depression, etc.)?
  - not at all
  - slightly
  - moderately
  - greatly

Does leakage have you feeling frustrated?

- not at all
- slightly
- moderately
- greatly

Please add any comments below:
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________

Intermountain Healthcare complies with applicable federal civil rights laws and does not discriminate on the basis of race, color, national origin, age, disability, or sex. La provisión de servicios de interpretación gratis. Habla con un empleado para solicitarla.  

INCONTINENCE QUESTIONNAIRE

CPM Algorithm for Urinary Incontinence

- **Medical History**
  - Identify type of Urine loss: stress, urge, mixed
  - Impact of urine loss: lifestyle, self esteem
  - Fluid Intake: amount, type

- **Testing:**
  - Urine dipstick for infection
Stress Urinary Incontinence

Involuntary leakage with effort or exertion such as sneezing, coughing, exercise

Mechanical devices such as incontinence tampons and pessary can be helpful.

Sling procedures remain surgical treatment of choice.
Urge Urinary Incontinence

- Involuntary leakage with urgency—sudden need to urinate. Common triggers: key in door, washing dishes
- Mechanical devices and surgery NOT helpful
- Treated with medications such as anti-cholinergics
Bladder Diary

- Last free clinical test
- 2 to 4 non-consecutive days
- Keep track of fluid intake, voided volume, amount of leakage, activity during leakage
- Provide patient with urine collection device as shown
- RTC 1-2 week to review
# Intake and Voiding Diary

This chart is a record of your fluid intake, voiding and urine leakage. Please bring this diary to your next visit.

**Instructions:**
1. Choose 4 days (entire 24 hours) to complete this record – they do not have to be in a row. Pick days that will be convenient for you to measure every void.
2. Begin recording when you wake up in the morning, continue for a full 24 hours.
3. Make a separate record for each time you void, leak, or have anything to drink.
4. Measure voids (using cc measurements).
5. Measure fluid intake in ounces.
6. When recording a leak – please indicate the volume using a scale of 1-3 *(1=drops/damp, 2=wet-soaked, 3=bladder emptied), your activity during the leak, and if you had an urge ("yes" or "no").

<table>
<thead>
<tr>
<th>DAY 1</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
<td><strong>Amount Voided (in cc)</strong></td>
</tr>
<tr>
<td>Example</td>
<td></td>
</tr>
<tr>
<td>7:15a</td>
<td>325 cc</td>
</tr>
<tr>
<td>7:45a</td>
<td>2</td>
</tr>
<tr>
<td>8:15a</td>
<td></td>
</tr>
<tr>
<td>10:30a</td>
<td>1</td>
</tr>
</tbody>
</table>
## Bladder Diary Example 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Drink</th>
<th>How much (mls)</th>
<th>Volume of Urine (mls)</th>
<th>How Urgent 0-3</th>
<th>Most urgent</th>
<th>Leakage with Urgency</th>
<th>Leakage with activities</th>
<th>Pad change</th>
</tr>
</thead>
<tbody>
<tr>
<td>0200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0700</td>
<td>Mug coffee</td>
<td>250mls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cough</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0900</td>
<td>Cup orange juice</td>
<td>200mls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td>2 mugs coffee</td>
<td>500mls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1530</td>
<td>Cup of tea</td>
<td>200mls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>jogging</td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1800</td>
<td>Cup of tea</td>
<td>200mls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>Glass of beer</td>
<td>200mls</td>
<td>20mls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2030</td>
<td>Glass of wine</td>
<td>50mls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cough</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Amount</td>
<td>Type</td>
<td>Time</td>
<td>Amount</td>
<td>Time between voids</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>--------</td>
<td>-------</td>
<td>-------</td>
<td>--------</td>
<td>-------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 AM</td>
<td>6 oz</td>
<td>Coffee</td>
<td>8 AM</td>
<td>2 oz</td>
<td>&gt; 30 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6:30 AM</td>
<td>1 oz</td>
<td></td>
<td>8:30 AM</td>
<td>1 oz</td>
<td>30 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 AM</td>
<td>1 oz</td>
<td></td>
<td>9 AM</td>
<td>1 oz</td>
<td>60 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 AM</td>
<td>5 oz</td>
<td></td>
<td>10 AM</td>
<td>4 oz</td>
<td>&gt; 60 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:30 AM</td>
<td>4 oz</td>
<td></td>
<td>11:30 AM</td>
<td>4 oz</td>
<td>&gt; 60 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 PM</td>
<td>2 oz</td>
<td></td>
<td>1 PM</td>
<td>2 oz</td>
<td>40 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:30 PM</td>
<td>3 oz</td>
<td></td>
<td>1:30 PM</td>
<td>3 oz</td>
<td>40 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 PM</td>
<td>3 oz</td>
<td></td>
<td>2 PM</td>
<td>4 oz</td>
<td>&gt; 60 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 PM</td>
<td>4 oz</td>
<td></td>
<td>3 PM</td>
<td>4 oz</td>
<td>&gt; 60 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 PM</td>
<td>6 oz</td>
<td></td>
<td>4 PM</td>
<td>6 oz</td>
<td>90 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 PM</td>
<td>5 oz</td>
<td></td>
<td>5 PM</td>
<td>6 oz</td>
<td>&gt; 120 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5:30 PM</td>
<td>1 oz</td>
<td></td>
<td>5:30 PM</td>
<td>1 oz</td>
<td>&gt; 120 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 PM</td>
<td>12 oz</td>
<td>Milk</td>
<td>6 PM</td>
<td>1 oz</td>
<td>&gt; 120 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 PM</td>
<td>7 oz</td>
<td></td>
<td>7 PM</td>
<td>7 oz</td>
<td>60 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 PM</td>
<td>7 oz</td>
<td></td>
<td>8 PM</td>
<td>7 oz</td>
<td>60 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 PM</td>
<td>7 oz</td>
<td></td>
<td>9 PM</td>
<td>7 oz</td>
<td>&gt; 120 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 PM</td>
<td>1 oz</td>
<td></td>
<td>10 PM</td>
<td>2 oz</td>
<td>&gt; 180 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 PM</td>
<td>2 oz</td>
<td></td>
<td>11 PM</td>
<td>2 oz</td>
<td>&gt; 180 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 AM</td>
<td>2 oz</td>
<td></td>
<td>12 AM</td>
<td>2 oz</td>
<td>&gt; 180 min</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Daily Intake: 48 oz

Total Daily Output: 51 oz

- How many times did you urinate in 24 hours? __15__
- Number and type of pads used during the day: __4__ and at night: __2__

1 = Few Drops
2 = Soaked pad
3 = Soaked pad + under wear
4 = Soaked clothing
Behavioral and Lifestyle Modification

- Low risk and limited expense
- Works for either subtype of incontinence: either stress or urge incontinence.
Weight loss

- 47% reduction in incontinence episodes in overweight and obese women with even modest weight loss.
Avoid the myth of 8 x 8oz Water intake

- Many women can drink less than 60 oz/day - let thirst be guide.
- Up to 20% of fluid intake is from foods.
- A healthy 24 hour urine output is 40-50 oz. A normal voided volume is between 6-8 oz.
- Frequent intake of small amounts 4-5 oz/hr up to 67 oz (2 Liter) a day.
  - Avoid large episodic intake: ie 36 oz in 1 drink
Avoid bladder irritants

- Caffeine
- Artificial Sweeteners- aspartame, saccharine
- Citric juices and acidic drinks such as carbonated beverages
- Alcohol
Timed voids

- Use the diary to determine initial voiding interval
- Void on schedule during awake hours to avoid being caught off guard.
- Slowly extend time in between voids: i.e. 15 minutes every week.
Freeze and squeeze

- Stop and stay still
- Squeeze pelvic floor muscles quickly 3-5 times then repeat
- Repeat as needed until urge subsides
Pelvic Floor Muscle Exercises and Bladder Training

If you are experiencing urinary leakage, pelvic floor muscle exercises (Kegels) and bladder training are two things you can do to help control your urinary symptoms.

Pelvic Floor Muscle Exercises
Learning how to strengthen the pelvic floor muscles can help reduce or stop urinary leakage. Pelvic floor muscle exercises (PFME) are most helpful for women with mild to moderate urinary leakage. Women with severe urinary leakage often need more than exercises to improve.

Like any other form of exercise, it is important to do PFME correctly and regularly. Unfortunately, because pelvic muscles are hidden from view, it is hard to know if you are doing them correctly. To be sure that you are working the right muscles:

- Imagine you are going to pass gas and squeeze the muscles that would prevent that gas from escaping from your rectum. Exercising the muscles around the rectum will also strengthen those around the vagina and urethra.
- Use a hand mirror to look at your vaginal opening and the perineum (the space between the vagina and rectum). You should see the perineum lift up when you contract your pelvic muscles.
- While lying or sitting, place one finger inside your vagina. Squeeze as if you were trying to stop urine from coming out. You should feel your finger lift and squish. If you are correctly contracting your pelvic muscles,
  - No one should be able to tell you are doing PFME.
  - If you are visibly moving, you are not using the right muscles.
  - You should not be contracting the gluteus ("buttocks") or thigh muscles.

Keep your stomach and back muscles relaxed as you work these pelvic muscles. And do not squeeze your legs together or hold your breath while doing the exercises. Try this routine:

1. Start by pulling in and holding a pelvic muscle squeeze for 5 seconds then relax for an equal amount of time (3 seconds).
2. Do this for 10 repetitions three times a day.
3. Try to hold for 1 second longer each week until you are holding for a 10 second squeeze.
4. Remember to re- and breathe between contractions. Relaxing can be as important as squeezing.
5. At the beginning or do the exercises while lying down. As you get stronger, do the exercises while sitting or standing.

If you are not sure that you are doing the exercises correctly, ask your medical provider at a pelvic exam to check if your squeeze is working the right muscles. Or ask for a referral to a physical therapist who specializes in pelvic floor muscle rehabilitation. The physical therapist will also check your body and abdominal strength, your gait and your posture. These all affect how your pelvic muscles work.

LEARN THE TERMS
Pelvic floor muscle exercises (Kegels): Exercises that strengthen the muscles of the pelvic floor. Kegel is a specific exercise of the pelvic muscles to improve and even prevent urinary and bowel leakage.
Bladder training: Behavioral therapy that helps you wait longer between bathroom trips, so that you are in the bathroom when it’s convenient rather than when you feel that sudden urge to go.
Pelvic floor muscles: The bowl-shaped muscles in the pelvis that support the vagina, bladder, and rectum.
Urethra: Tube from the bladder to the outside of the body that urine passes through during urination.
Overactive bladder (OAB): Urinary urgency, especially with frequency and nocturia, and sometimes with urinary incontinence. This occurs without an infection or other health problem.
Constipation: Having a bowel movement fewer than three times a week, along with straining to produce a hard bowel movement.
Lifestyle and Behavioral Changes
Improving Urinary Urgency, Frequency and Urgency Incontinence

Manage your Fluid Intake: There is no scientific evidence that states we need eight 8-ounce glasses (64 oz.) of fluid every day. Remember, what goes in must come out! Many women, unless you exercise heavily or work in hot conditions can drink less than 44 oz. per day. In 2004, the Institute of Medicine reported that most people meet their daily hydration needs by letting their thirst be their guide. You must also remember that we get additional fluids from our diets in the form of soups, stews, fruits, etc. It has been shown that we get as much as 20% of our daily fluids from our diet. If you are used to drinking large amounts of fluids every day and you are bothered by how frequently you need to go to the bathroom, these suggestions may help you:

- Don’t carry a water bottle or large container of fluid around with you
- Use a smaller glass or cup
- Take small sips of fluids instead of large gulps
- If your mouth is dry, try sugar-free gum or candy

Try spreading out fluids during the day instead of drinking large amounts at one time. This is especially important before leaving the house. If you find yourself voiding more than 2 times per night, you should limit your fluid intake after dinner.

Avoid Fluids that can be Bladder Irritants: Some chemicals in our beverages can behave as diuretics and bladder irritants. If you are sensitive to these chemicals, they may cause you to make large amounts of urine. Some of the more common irritants include:

- Caffeine - Try to stop or at least reduce your caffeinated beverages like coffee, tea, and cola to see if your bladder control improves. If you drink a lot of caffeine, you should taper down slowly to avoid a caffeine withdrawal headache.
- Artificial Sweeteners - Beverages that contain artificial sweeteners like saccharin or aspartame can also be bladder irritants. Diet Pepsi, Mountain Dew or Coke then would be especially problematic because of the artificial sweetener and the caffeine.
- Citrus juices - Some people find that the juices like orange or grapefruit juice can irritate their bladder. Although there are no scientific studies to prove this, the best thing to do is to stop the suspected irritant for a week or two and see if it makes a difference.

Weight Loss: Being overweight puts extra pressure on your bladder. Weight loss will relieve some of that pressure and will help you regain your bladder control.

Visit a Schedule: Sometimes, the message that the bladder is full comes without warning and often too late. In these cases, women find that they lose urine on the way to the bathroom. There isn’t enough time between the
Medications

- No FDA-approved meds for SUI
- Urge incontinence:
  - Anticholinergics
    - Side effects: dry mouth and constipation
    - Moderate improvement
    - High discontinuation:
      - <50% at 6 months; <36% at 1 year
      - Use extended release over immediate release to minimize side effects
  - B-3 agonist (Mirabegron)
    - Side effect: Increasing hypertension
    - Synergistic effects with anticholinergics in women who fail monotherapy
Vaginal estrogen in Post-menopause

- Creams, tablets, rings
- Modest improvement in urinary incontinence
- No evidence of systemic estrogen for treatment of incontinence
  - May actually worsen symptoms
Vaginal devices

- Poise Impressa tampons
When to refer

- Failed prior surgical management
- Bothersome stress incontinence desiring surgical management
Resources

- https://www.voicesforpfd.org/

- Yvonne Hsu
  Female Pelvic Medicine and Reconstructive Surgery
  Avenues Specialty Care
  801-408-7500