

# Female Urinary Incontinence

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# 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

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ophone is off; you can press its hotkey or click its icon to turn it on.

# Incontinence Questionnaire

Today's date: \_\_\_\_\_

Patient name: \_\_\_\_\_ Sex: \_\_\_\_\_ Date of birth (mm/dd/yyyy): \_\_\_\_\_

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.

**During the last 3 months, did you leak urine...**  
(check all that apply)

- ☐ 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*...** (check only one)

- ☐ 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 your....**

**...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 bus more 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 (nervousness, 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

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## INCONTINENCE QUESTIONNAIRE

SOURCES: This questionnaire is adapted with permission from two sources: Brown JS, Bradley CS, Subak LL, et al; Diagnostic Aspects of Incontinence Study (DAISy) Research Group. The sensitivity and specificity of a simple test to distinguish between urge and stress urinary incontinence. *Ann Intern Med.* 2006;144(10):715-723. Uebersax JS, Wyman JF, Shumaker S, A., McClish D, K., Fanci J, A., & the Continence Program for Women Research Group. (1995). Patient and Provider Publications. CPM038a - 04/11

# 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

## Stress Urinary Incontinence

Voices for PFD

AUGS

Stress urinary incontinence (SUI) is loss of urine that occurs at the same time as physical exertion. Activities like sneezing, coughing, or exercise increase the pressure or "stress" on the bladder. This pushes urine out of the body.

### About SUI

SUI affects one in three women over 45 years old. Women most commonly develop SUI from changes that happen in pregnancy or childbirth which weaken the support to the urethra. Chronic coughing, constipation, obesity, aging, smoking, or extreme weight lifting can also cause SUI. Genetics may also play a role.

The bladder walls are made of muscles. As urine flows into the bladder, the walls expand to make room for more fluid, like a water balloon. Sudden pressure caused by activity or "stress" unintentionally pushes urine through the urethra, the tube that carries urine out of the body.

Some women leak occasionally, for example, only with intense exercise, heavy coughing, or when their bladder is very full. Others leak with activities such as walking or laughing. Women may limit physical and social activities to avoid SUI. There is no need to do this—talk to your medical provider about treatments that can make you dry.

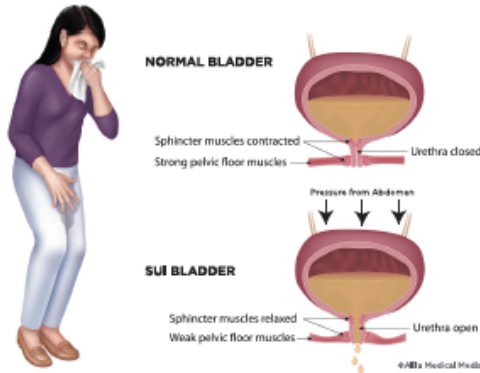
### Diagnosis

There are different kinds of urine leakage. To diagnose your problem, you will be asked questions about when and how often you leak urine. A physical exam will help identify other conditions that influence the bladder, such as pelvic organ prolapse. As part of the exam, you will be asked to cough or strain with a full bladder to see if you leak.

Additional tests might include:

- Urine analysis to check for a urinary tract infection and blood in your urine.
- Ultrasound to assess how much urine remains in your bladder after urinating.
- Urodynamics to provide information on your bladder and urethra.

You may be asked to complete a bladder diary. This requires you to record what, how much, and how often you drink. You also measure the amount you urinate. This will help your provider learn more about your bladder symptoms.



### LEARN THE TERMS

**Stress urinary incontinence (SUI):** Urine leakage with physical activity such as laughing, sneezing, lifting, or exercise.

**Urinary urgency incontinence (UUI):** Urinary leakage that occurs with the sudden, strong desire to pass urine.

**Pelvic organ prolapse (POP):** Dropping of the pelvic organs, such as the bladder, uterus and rectum, caused by a loss of vaginal support.

**Urethra:** Tube from the bladder to the outside of the body that urine passes through during urination.

**Mid-urethral sling:** Placement of synthetic mesh in a strap-like fashion under the urethra to treat the symptoms of SUI.

**Urethral suspension (Burch suspension):** Suspension of the bladder with stitches placed near the urethra to treat SUI.

**Urodynamics:** A group of tests performed in the office using a machine to evaluate how well your bladder fills and empties.

- 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

## Overactive Bladder

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Overactive bladder (OAB) is a complex condition affecting about 15 percent of women across all ages. It can be costly, embarrassing and result in avoiding social activities for fear of leakage. Age increases the risk for OAB as do some bladder conditions (infection, bladder stones, or abnormal growths). For some women, the cause is unknown.

### The Overactive Bladder

Women with OAB feel a sudden urge to urinate, sometimes followed by leaking. Some women leak on the way to the bathroom, or while they are pulling down their clothes. Sometimes the whole bladder empties. It is common to feel the frequent urge to go even though your bladder isn't full.

Made of muscle, the bladder walls hold urine. As urine flows into the bladder, the walls expand to make room for more fluid, like a water balloon. The muscles that surround your urethra, the tube you urinate from, tighten to hold in urine while the bladder muscle relaxes.

When you urinate, your brain signals the urethra and pelvic floor muscles to relax. The bladder muscle squeezes, pushing the urine out of the body. Typically, women urinate four to seven times per day and one time at night.

In women with OAB, the bladder muscle is overactive and squeezes too often. These bladder spasms make it feel like you need to urinate often and quickly, even if there isn't much urine in your bladder.

NORMAL BLADDER



OVERACTIVE BLADDER



The muscle that lines the bladder, called the detrusor muscle, squeezes down too often and too powerfully. This causes urine to come out at the wrong times. Common things that bring this on are hearing running water, putting your key in the door at home, or seeing the toilet.

### Diagnosis

It can feel embarrassing to have these bladder issues. You are not alone. As a first step to taking back your life, talk to your medical provider or bladder specialist, like a urogynecologist or urologist. Discuss when and how often you leak urine. A physical exam helps identify other conditions that influence the bladder, such as prolapse.

Additional tests might include:

- Urine analysis to check for a urinary tract infection and blood in your urine.
- Ultrasound to assess how much urine remains in your bladder after urinating.
- Urodynamics to provide information on your bladder and urethra.

### LEARN THE TERMS

**Urinary urgency ("gotta go right now"):** Sudden, strong desire to pass urine, which is very difficult to defer.

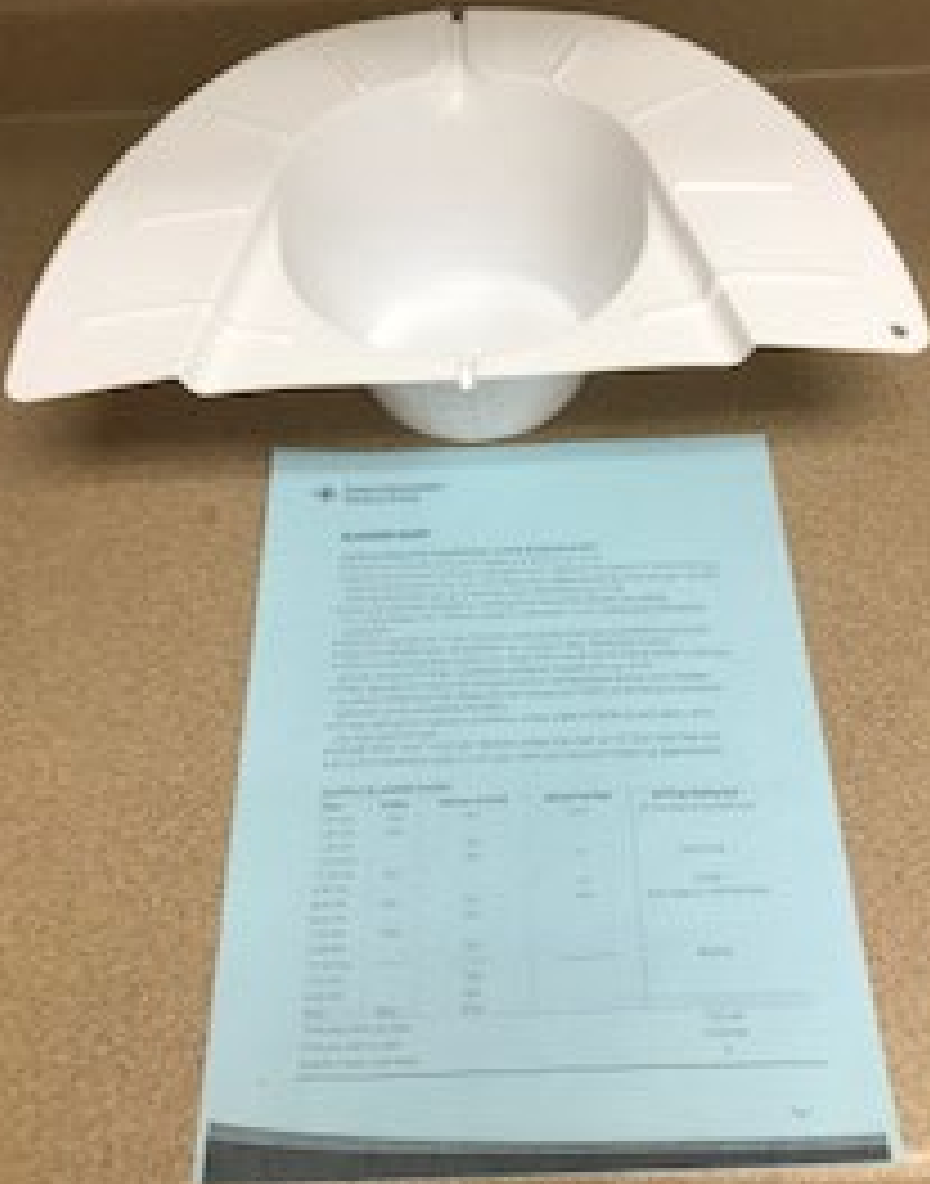
**Urinary frequency ("gotta go often"):** Urinating eight or more times per day.

**Nocturia:** Need to urinate one or more times during sleeping hours.

**Urinary urgency incontinence (UUI):** Urinary leakage that occurs with the sudden, strong desire to pass urine.

**Overactive bladder:** Urinary urgency, usually with frequency and nocturia, and sometimes with urinary urgency incontinence. This occurs without an infection or other health problem.

- 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

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

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").

[illegible]

# Bladder Diary Example 1

Date	Drink		Urine		Leakage		
	Type	How much (mls)	Volume of Urine (mls)	How Urgent 0-3 3= most urgent	Leakage with Urgency	Leakage with activities	Pad change
0200			150mls		Y		
0700	Mug coffee	250mls	250mls				
0800			60mls			cough	P
0900	Cup orange juice	200mls				sneeze	
1000			100mls				
1200	2 mugs coffee	500mls					
1400			300mls		Y		
1530	Cup of tea	200mls				jogging	P
1600			100mls				
1800	Cup of tea	200mls					
1900			100mls		Y		
2000	Glass of beer	200mls	20mls				
2030	Glass of wine	50mls				cough	



# Bladder Diary Example 2

Bladder/Voiding Diary

Intake/Fluids			Urinated in the toilet			Accidental leakage of Urine				
Time	Amount	Type	Time	Amount (yes/no)	Time between Voids	Time	Amount	Urge	Activity	
8 AM	16 oz	coffee	8 AM	6 oz	30 30 60 90	8 AM	2	✓	Walking to BR	
			8:30 AM	1 oz						
			9 AM	1 oz			9 AM	1	✓	Sitting at desk
			10 AM	5 oz						
			11:30	4 oz						
NOON	8 oz	coffee				12:30 PM	1	✓	Walking to BR	
	6 oz	water								
			1 PM	2 oz	40					
			1:30 PM	3 oz	30					
			3 PM	4 oz	90					
			5 PM	6 oz	120	5 PM	2	✓	Walking to BR	
6 PM	12 oz	milk								
			7 PM	4 oz	120	7 PM	1	✓	Walking to BR	
8 PM	6 oz	tea	8 PM	7 oz	60					
			9 PM	1 oz	60					
			11 PM	2 oz	120	11 PM	2	✓	Walking to BR	
			2 AM	2 oz	180					
			5 AM	3 oz	180					
Total Daily Intake 48 oz			Total Daily Output 51 oz			1= Few Drops 2= Soaked pad 3= Soaked pad + underwear 4= Soaked clothing				
How many times did you urinate in 24 hours? 15										
Number and type of pads used during the day 4 and at night 2										

# 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

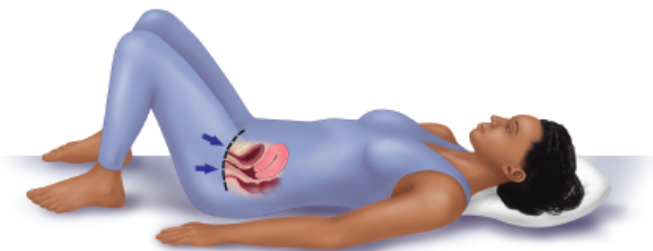
- ▶ Stop and stay still
- ▶ Squeeze pelvic floor muscles quickly 3-5 times then repeat
- ▶ Repeat as needed until urge subsides

# Pelvic Floor Muscle Exercises and Bladder Training

Voices **for** PFD



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 urine leakage. Pelvic floor muscle exercises (PFME) are most helpful for women with mild to moderate urine leakage. Women with severe urine 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 under the bladder.

- 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 lifted and squeezed 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 (“butt”) or thigh muscles.

Keep your stomach and back muscles relaxed as you work those 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 3 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 rest and breathe between contractions. Relaxing can be as important as squeezing.
5. At the beginning, 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 back 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. Regular daily exercising of the pelvic muscles can improve and even prevent urinary and bowel leakage.

**Bladder training:** Behavior therapy that helps you wait longer between bathroom trips, so that you go to 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, usually with frequency and nocturia, and sometimes with urinary urgency 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 Urge Incontinence

**Manage your Fluid Intake:** There is no scientific evidence that states we need eight 8 oz. 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 64 oz. per day. In 2004, the Institutes 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 gulp
- 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 get up to void more than 2 times per night, you should limit your drinking 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 or may aggravate bladder spasms resulting in a more frequent need to urinate. Some common bladder 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 aspartame or saccharin can also be a bladder irritant. 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 juices like orange or grapefruit juice can also 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.

**Void on 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  
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