

# INCONTINENCE

CONSULTATION INFORMATION



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# THE URINARY SYSTEM

## Healthy Urinary System

The urinary system is comprised of several muscles, organs, and nerves which collect, store, and release urine. The **kidneys** form urine by filtering waste and extra water from the bloodstream. The urine is carried through the **ureters** to the **bladder**, a hollow muscular organ shaped like a balloon. Located in the pelvis, it is held in place by ligaments attached to other organs and to the pelvic bones. The bladder stores urine until you are ready to empty it. It swells into a round shape when it is full and decreases in size as it empties. A healthy bladder can hold up to 16 ounces (2 cups) of urine comfortably for two to five hours.

The bladder opens into the **urethra**, the tube which allows urine to pass outside the body. **Sphincter muscles**, circular muscles at the end of the urethra, close tightly to keep urine from leaking. Nerves in the bladder signal you when it is time to empty your bladder. The sensation intensifies as the bladder continues to fill and reaches its maximum capacity. When you are ready to urinate, the brain signals the sphincter muscles to relax. At the same time, the brain signals the bladder muscles to tighten, squeezing urine out. Urine can then leave the bladder through the urethra. When these signals occur in the correct order, normal urination occurs.

## What are your concerns?

More than 30 million Americans suffer from overactive bladder (OAB) and urinary incontinence (UI). Fifty percent of women and twenty-five percent of men will experience these medical conditions in their lifetime. Despite their prevalence, most people with these conditions are reluctant to seek medical attention. Often embarrassed and mistakenly believing it is a normal part of aging, they limit their social or recreational activities. In this manner, overactive bladder and incontinence deprive many women and men of their independence and can severely affect their quality of life.

### Urinary Incontinence or UI

Incontinence is the medical term used to describe the condition of not being able to control the flow of urine from your body. There are several types of urinary incontinence.

**Stress Incontinence** – leakage caused by sudden increase in abdominal pressure such as coughing, sneezing, or picking things up

**Urge Incontinence** - a sudden, urgent and uncontrollable need to empty the bladder before you can safely reach a toilet

**Mixed Incontinence** - a combination of the above symptoms

**Overflow Incontinence** - when your bladder cannot completely empty, causing small but uncontrollable leaks of urine

It is very important to determine which type of urinary incontinence is bothersome because the available treatment options are very different.

## **Overactive Bladder or OAB**

Overactive bladder is when the bladder is not as relaxed as it should be. Instead it contracts very frequently. Medical professionals may describe the bladder as “**unstable**” or “**spastic**”. An overactive bladder can be caused by a number of things including tumors, stones, infections, hormone changes, problems of the bladder muscles or nerves, an obstructing prostate or a narrow urethra. An overactive bladder is not normal at any age and is most often treatable. Symptoms of an overactive bladder include:

**Frequency** – an urge to urinate more than eight times a day

**Urgency** – a sudden and strong urge to urinate, often when you touch water or hear water running, giving little or no chance to postpone urination

**Incontinence** (wetting accidents) – an involuntary loss of urine

**Nocturia** – waking to urinate two or more times a night

# **Initial Screening**

## **History and Physical Examination**

Your physician will inquire into your symptoms, past urological and gynecological history, prior surgeries, medical conditions such as diabetes or stroke or other nervous system diseases or conditions, and medications being taken. A physical examination is then performed, frequently with special attention to the pelvic examination, and an evaluation of the nerve function of the pelvis and lower extremities is completed. A pelvic examination will determine if the bladder, rectum, and/or uterus are normal or whether they have "fallen" and to determine if the urethra has significant movement.

## **Urinalysis or Urine Culture**

A clean catch or catheterized urine sample will be collected and analyzed to determine if you have a urinary tract infection, blood, or other abnormality in your urine. If infection is suspected, the urine sample will be sent for culture.

## **Post Void Residual**

This test is performed to see whether any urine remains in you bladder after you have attempted to empty it completely. Measurements may be made by catheterization or ultrasound. A normal post-void residual is less than 100 cc of urine remaining in the bladder.

# Further Evaluation

## Urodynamic Testing

**Urodynamic testing** focuses on your bladder's ability to fill and empty. A **cystometrogram (CMG)** measures how much your bladder can hold, how much pressure builds up inside your bladder as it stores urine, and how full it is when you feel the urge to urinate. Before testing can be started, any possibility of an infection will need to be ruled out.

First, the nurse will use a catheter to empty your bladder completely. Then a smaller catheter with a pressure-measuring tube called a cystometer will be used to fill your bladder slowly with warm water. Another catheter may be placed in your rectum to record pressure there as well. You will be asked how your bladder feels and when you feel the need to urinate. The volume of water and the bladder pressure will be recorded. Involuntary bladder contractions can be identified. While your bladder is being filled for the CMG, it may suddenly contract and squeeze some water out without warning. The cystometer will record the pressure at the point when the leakage occurred. This reading may provide information about the kind of bladder problem you have. To help the doctor or nurse evaluate your sphincter muscles, you may be asked to cough, strain, exhale while holding your nose and mouth (to apply abdominal pressure to the bladder), or shift positions during the procedure. During a portion of the procedure, a pack or tampon maybe placed in the vagina to help reduce any prolapse that is present.

After the CMG, you will be asked to empty your bladder so that the catheter can measure the pressures required to urinate. This pressure flow study helps to identify bladder outlet obstruction. You will also be given an **electromyography** to determine if your urinary problem is related to nerve damage. This test measures the muscle activity in the urethral sphincter using sensors placed on the skin near the urethra and rectum. Sometimes the sensors are on the urethral or rectal catheter. Muscle activity is recorded on a machine. The patterns of the impulses will show whether the messages sent to the bladder and urethra are coordinated correctly.

You may have mild discomfort for a few hours after these tests. Drinking two 8-ounce glasses of water each hour for two hours should help. Ask your doctor whether you can take a warm bath. If not, you may be able to hold a warm, damp washcloth over the urethral opening to relieve the discomfort. Your doctor will give you an antibiotic to take for one or two days to prevent an infection. If you have signs of infection—including pain, chills, or fever—call your doctor at once.

## Voiding Diary

A voiding diary is an **essential** part of your evaluation. It will allow you to communicate clearly with your physician about the status of your bladder, including how frequently you urinate during the day and at night, how much fluid you drink during the day, and how much urine leakage you experience.

## **Cystoscopy**

Cystoscopy (also called Cysto) is a test that allows your doctor to look at the interior lining of the bladder and urethra, areas which usually do not show up well on x-rays. A cystoscope is a thin lighted viewing instrument that is inserted into the urethra and advanced into the bladder. Your doctor then examines the inside of your bladder for stones, tumors, bleeding, and infection.

Just before the procedure, you will be allowed to empty your bladder. Cystoscopy is usually performed with local anesthesia; a small amount of numbing jelly is placed into your urethra to reduce discomfort. After the anesthetic takes effect, a well-lubricated Cystoscope is inserted into your urethra and slowly advanced into your bladder. If your urethra has a spot that is too narrow to allow the scope to pass, other smaller instruments are inserted first to gradually enlarge the opening.

Once the Cystoscope is inside your bladder, sterile water is instilled through the scope to expand your bladder creating a clear view. The Cystoscope is usually in your bladder for only two or three minutes. You may feel a cool sensation, an uncomfortable fullness, or an urgent need to urinate. Try to relax during the procedure by taking slow, deep breaths. Most people report that this procedure is not nearly as uncomfortable as they had expected.

After the procedure, you may need to urinate frequently, with some burning during and after urination for a day or two. A pinkish tinge to the urine can be common for several days after Cystoscopy. Afterwards, you should drink ample fluids to help minimize the burning and to prevent a urinary tract infection.

### **Call our office if:**

- **Your urine remains red or you see blood clots after you have urinated several times.**
- **You are unable to pass urine 8 hours after the procedure.**
- **You develop a fever, chills, or severe pain in your flank or abdomen after the procedure.**

## **TREATMENT OPTIONS FOR FREQUENCY, URGENCY OR URGE INCONTINENCE**

### **Medications**

Many times overactive bladder and incontinence can be corrected with the help of medication. Medications are often used in conjunction with other therapies such as behavior therapy, physical therapy, and acupuncture.

## **Anticholinergics**

Anticholinergics are sold under the following names: Gelnique, Toviaz, Oxytrol patch, Enablex, Vesicare, Sanctura, Detrol LA, Ditropan XL, and Oxybutynin. These medications all work similarly to reduce the frequency and intensity of bladder contractions. They can also increase the bladder capacity. These medications often cause mouth dryness and constipation. Side effects that are much less likely are vision disturbances and confusion. Taking them at bedtime may decrease their side effects. The side effects **usually improve with time**. DO NOT drink excessive amounts of fluid to counteract the dryness and continue a high fiber diet to counteract the constipation.

Suggestions to make the dry mouth more tolerable:

- Rinse your mouth and spit the water out.
- Take small sips of water.
- Suck on sugar free candy.
- Chew gum.
- Try “artificial saliva” (a spray available in many pharmacies).

## **Beta Agonist**

Myrbetriq is currently the only medication in this drug class used to treat overactive bladder. This medication works passively to maintain relaxation of the bladder during the filling phase. It reduces urgency, frequency, and incontinence while increasing the bladder capacity. It does not have side effects of those in the anticholinergic class, but can increase blood pressure so should be monitored in those with hypertension)

## **Imipramine (Tofranil), Amitriptyline (Elavil)**

These medications are considered antidepressants at higher doses. But at low doses, they cause the bladder to relax, while contracting the sphincter and bladder neck. Side effects may include tiredness. It is best to take these medications at bedtime.

## **Hormone Replacement**

After menopause or a hysterectomy, a woman’s body produces less of the hormone estrogen. This drop in estrogen can contribute to changes in the lining the urethra, bladder, and vagina. The result may be vaginal dryness, overactive bladder symptoms, incontinence, or recurrent urinary tract infections. Applying estrogen in the form of a vaginal cream, vaginal tablet, or ring, may help relieve some of these symptoms. (See appendix for application directions.)

# Behavior Therapy/Dietary Modification

## Bladder Retraining

Bladder retraining involves learning to delay urination after you get the urge to go. There are several types of retraining.

You may start by trying to hold off for 10 minutes every time you feel the urge to urinate. Then try increasing the waiting period to 20 minutes. The goal is to lengthen the time between trips to the bathroom.

Bladder retraining may also involve double voiding – urinating, then waiting a few minutes and trying to urinate again. This exercise can help you learn to empty your bladder more completely.

A third type of bladder retraining involves timed voiding. This is going to the toilet according to the clock rather than waiting for the need to go. Following this technique, you go to the toilet on a routine (usually every 2-3 hours).

## Maintain a Healthy Weight

Weight reduction programs for significantly overweight women may help reduce urinary symptoms such as overactive bladder and stress incontinence because of less internal pressure on the bladder.

## Stop Smoking

Nicotine is irritating to the bladder causing urgency and frequency. Additionally, a smoker's repeated and chronic coughing may cause stress incontinence. Smoking cessation may help to decrease both of these symptoms.

## Elimination of Bladder Irritants

Some foods that you eat can decrease the urinary pH and make the urine more acidic. This is likely to increase urinary urgency and frequency by irritating inflamed areas of the bladder and urethra. Foods which are high in arylalkylamines may also irritate the bladder. Removing these foods from your diet may decrease overactive bladder symptoms (see appendix for a dietary guideline for bladders). An additional option is taking an over-the-counter supplement called **Preliief** (see appendix) at mealtime.

## Limit Fluid Intake

Limiting the amount of fluid you drink is important, but DO NOT avoid fluids completely, as this will lead to increased bladder irritation. Drink enough water or other fluids to keep hydrated.

Limit fluid intake to 1,500 cc's (approximately 6 1/4 cups) per day.

Reduce fluid intake after 6 p.m. (or 2-3 hour before bedtime) to decrease nighttime voiding and incontinence.

## Maintain Bowel Regularity

Constipation and impaction can increase pressure on the bladder thereby increasing overactive bladder symptoms and incontinence. Eat more fiber! The best way of adding fiber to the diet is increasing the quantity of fruits and vegetables that are eaten. This means a minimum of five servings of fruits or vegetables every day. For many people, however, the amount of fruits and vegetables that are necessary may be inconveniently large or may not provide adequate relief from constipation. In this case, fiber supplements can be useful. Benefiber, Metamucil, and Citrucel are common over-the-counter supplements which work well.

Additionally the use of an osmotic laxative, Miralax, can be exceptionally helpful. Miralax works by pulling additional water into the digestive tract. It is an over the counter bowel preparation that is safe with very minimal side-effects.

## Kegel Exercises or Pelvic Floor Rehabilitation

The pelvic floor muscles work in coordination with the bladder to control urination. They sometimes are considered the on/off switch of the bladder. Therefore these muscles need to be properly coordinated in order to have normal bladder control. Just like any other muscles of the body, these muscles can be in 'spasm' or have excessive tone. This provides inappropriate signaling the brain and can be the source of urgency and frequency of urination and pelvic pain. It can also be a source of pain with intercourse and urination.

If this is extreme, the bladder may not empty appropriately. Pelvic floor physical therapy can be used to re-educate and relax these muscles. It is often very successful in reducing urgency, frequency of urination, and decreasing pain. Specially trained physical therapists offered a variety of techniques to provide relief based on symptoms. In order for this type of treatment to be successful, however, it does require a commitment from the patient and can take weeks to months to provide maximal and long-lasting benefit.

Kegel exercises (see appendix) strengthen your urinary sphincter and pelvic floor muscles – the muscles that help control urination. Imagine that you're trying to stop from passing gas. Squeeze the muscles you would use and hold for a count of three. Relax, count to three again, then repeat. The key to success is proper identification of the correct muscles. The majority of women cannot identify the appropriate muscles. The good news is a specially trained physical therapist can teach you techniques to help you identify the right muscles to contract. Typically, six weekly sessions are necessary for maximum improvement. You can do these exercises almost anywhere – while you're driving, watching television, or sitting at your desk at work. However, **do not** practice Kegel exercises while urinating as it can result in dysfunctional urinating and incomplete emptying.



# Percutaneous Tibial Nerve Stimulation (PTNS)

Percutaneous tibial nerve stimulation (PTNS), also referred to as posterior tibial nerve stimulation, is a non-drug, non-surgical option for overactive bladder and the associated symptoms of urinary urgency, urinary frequency and urge incontinence. It is the least invasive forms of neuromodulation used to treat these conditions in both men and women.

During a PTNS treatment, a small, slim needle electrode is inserted near your ankle. The needle electrode is then connected to the battery-powered stimulator. During your 30-minute treatment, mild impulses from the stimulator travel through the needle electrode, along your leg and to the nerves in your pelvis that control bladder function. This process is also referred to as neuromodulation.

Patients often describe a PTNS treatment as having a "tingling" or "pulsating" sensation. The treatment is typically well-tolerated by patients, and can be adjusted to suit patients as well as address any discomfort that they might experience during treatment.

Patients receive an initial series of 12 treatments scheduled about a week apart. If they respond favorably, they will likely need a treatment about once per month to maintain their improvements.

PTNS treatments gently modify the signals to achieve bladder control, it usually takes 5-7 weeks for symptoms to change. However, patients respond at different rates. In a review of about 100 patients who had success with PTNS, symptoms improved anywhere between 2-12 weeks. For about 20% of these patients, the symptoms of urgency and/or urge incontinence didn't improve until after 8 weeks.

There is no way to anticipate who will respond earlier, later or not at all. That's why it is important to receive the 12 recommended treatments before you and your physician evaluate whether this therapy is an appropriate and effective choice for you.

The risks associated with Urgent PC therapy are low. Most common side-effects are temporary and include mild pain or skin inflammation at or near the stimulation site.

(PTNS information taken from <http://www.cogentixmedical.com/patients/products/urgent-pc>)

# OVERACTIVE BLADDER SURGICAL TREATMENT

## Interstim

Interstim therapy uses a small device to send mild electrical impulses to a nerve located within the pelvis just above the tailbone. This nerve, a sacral nerve root, influences the way the bladder and the pelvic floor muscles act in coordination and help to normalize the function of bladder elimination. Often it can also help to regulate the bowels and decrease pain, although the device is not approved for these conditions alone.

First, a small wire, or electrode, is placed through the sacrum using x-rays and is tested to determine the appropriate placement. An extended test phase is then undertaken to determine if this treatment will adequately improve concerning symptoms. If this test phase is successful, the Interstim generator (as small as 1.7" x 2.0" x 0.3"), which resembles a pacemaker, is implanted under the skin in your buttocks.

Throughout this treatment, small incisions are made; one over the sacrum, and a second "pocket incision" in the upper buttock. The Interstim generator fits into this pocket and is positioned where it is comfortable and will not interfere when you twist, bend, or move around. All parts of the system lie beneath the skin. The incisions are stitched closed and covered with a dressing. Potential complications include infection, chronic pain, bleeding, and continued incontinence. For approximately six weeks, you should avoid heavy lifting and rigorous exercise. The overall success of this procedure is approximately 80% effective in greatly improving urgency and urge incontinence symptoms.

## Hydrodistention

Sometimes overactive bladder symptoms are caused by a bladder wall condition called **interstitial cystitis**. A procedure called hydrodistention is done on an out-patient basis with a general anesthetic to check for this condition. During this examination, the cystoscope is used to fill the bladder with water. This stretches the bladder (hydrodistention) and allows your doctor to see the walls of the bladder clearly. Your doctor will look for evidence of interstitial cystitis by identifying glomerulations and ulcers, as well as measure how much fluid your bladder holds. Glomerulations are tiny pinpoint spots of bleeding/bruising in the bladder wall. Ulcers, called Hunner's ulcers, are larger sores where many epithelial cells have been destroyed. The presence of ulcers or glomerulations supports the diagnosis of interstitial cystitis. In some cases, the surgeon may also use the cystoscope to take a biopsy of the bladder wall for further testing. After a full-bladder hydrodistention, you may have some abdominal pain and/or burning following urination. You may require a few hours in the recovery room, but you can go home the same day with pain medication. Although some women have pain in the week following the hydrodistention, 30 percent of women with interstitial cystitis have an improvement in their symptoms. Pain and symptom relief can endure for several months after the procedure. Hydrodistention generally is considered a diagnostic tool, but often may also be used as treatment for women who find that the procedure relieves their symptoms.

## **Botox**

This procedure involves injecting botulinum toxin type A into approximately 30 locations within the bladder. These injections temporarily paralyze bladder muscle fibers thereby decreasing the intensity of bladder contractions. The procedure is performed in the operating room or in the office and takes approximately ten minutes. Potential complications are uncommon and relatively minor. The most common side effects may include infection, burning with urination, bleeding, continued urge incontinence, and potential hypersensitivity reactions. Urinary retention is relatively uncommon, but may require intermittent catheterization or wearing a catheter for a period of time after the procedure. The results should be considered temporary and will wear off over time; however, repeat injections may be beneficial. There are no post-operative restrictions. Overall, this procedure is 80% effective in stopping or greatly improving incontinence but lasts only 4-6 months. There may be an out-of-pocket cost to purchase the vial of Botox.

# **STRESS INCONTINENCE SURGICAL TREATMENT**

## **Periurethral Injections**

Some women with stress incontinence benefit from urethral injections of bulking agents. This procedure involves injecting bulking agents (collagen or synthetics) into the tissue surrounding the urethra which tightens the seal of the sphincter. This outpatient procedure is completed in the operating room or in the office with sedation and takes five minutes. Potential complications are uncommon and relatively minor, the most common being transient urinary retention (<7 days), infection, burning with urination, bleeding, and continued incontinence. There are no post-operative restrictions. Overall, this procedure is 80% effective in stopping or greatly improving stress urinary incontinence but may require two to three treatments and should not be considered permanent.

## **Mid-urethral Sling**

A mid-urethral sling is designed to prevent **stress** urinary incontinence. There is a 90 – 95% success rate with this type of procedure and it maintains approximately 70% success at 10 years. It does require that there is urethral hyper mobility which is determined by physical examination. This sling can be performed alone or in conjunction with other pelvic floor prolapse procedures. If performed alone, it is usually done as an outpatient procedure under general anesthesia. A special mesh tape is placed around the urethra to prevent leakage. This tape is permanent and healing anchors it into place. Most patients can void before they leave the hospital. Occasionally the patient must go home with a catheter for one night. Potential complications are rare and include urinary retention, infection, and damage to the bladder or urethra, urethral or vaginal erosion, chronic pain, bleeding, and continued incontinence. For approximately six weeks, you should avoid sexual intercourse, heavy lifting, and rigorous exercise.

There are generally three ways to place these slings. A retropubic approach includes a small vaginal incision and two small puncture incisions low on the abdomen. Additional risks with this approach include bowel perforation and post-operative urgency. A trans-obturator approach utilizes a small vaginal incision and two small puncture incisions high on the inner thighs. There really is no risk of bowl perforation, but temporary thigh pain may be a rare complication. The most recent development includes the use of single incision slings. There is only one small vaginal incision made. Although this is a highly successful procedure, it is unclear if the long-term success rates will be as high as other types of mid-urethral slings. All of these approaches are successful and are often performed based on surgeon preference.

## Appendix A

### Fingertip Application Method for Estrogen Vaginal Cream

Wash your hands with soap and water. Dry thoroughly.

Squeeze out enough cream from the tube to cover 1/2 of your index finger.

Locate the vaginal opening. Immediately above the vagina is the urethra (a small opening where urine is eliminated from your body). The urethra may not be as easily identified as the vagina because the opening is much smaller; however, use the diagram to determine its approximate location.

Carefully spread the cream onto the external vaginal/urethral area. As the cream is spread, some may be gently inserted into the vagina; however, it is not necessary to push the cream high into your vagina.

This instruction sheet is provided to help your practitioner explain his/her preferred method for applying vaginal estrogen cream. Your doctor or nurse will likely use this sheet to assist in their patient education activities. Please note that this information is not intended to replace your practitioner's instructions; always follow your doctor's *specific* directions regarding the use of any prescription medication.

## Appendix B

### Bladder Diet

Some healthcare professionals believe that dietary changes may be able to alter urinary symptoms in patients with irritated voiding symptoms, urgency-frequency symptoms, urethral syndrome, and interstitial cystitis. It is quite logical that foods that decrease the urinary pH and make the urine more acidic are very likely to increase urinary urgency and frequency by irritating inflamed areas of the bladder and urethra and/or sensitizing stretch receptors. Food which are high in arylalkylamines may also irritate the bladder. In addition, patients may have specific food allergies which may also cause increased urinary symptoms. Removing these foods from a patient's diet may alter normal values of some metabolites and petrochemical transmitters in patients with these syndromes but not in normal control. For patients interested in dietary alterations, we recommend that you try to avoid all of the following acidic foods whenever possible. These include:

All alcoholic beverages	Coffee	Pepper
Apple juice	Cranberries	Pineapple
Apples	Grapes	Plums
Ascorbic acid	Guava	Strawberries
Cantaloupes	Lemons	Tea
Carbonated beverages	Lemon juice	Tomatoes
Chili	Lime	Vinegar
Citrus fruits	Nectarines	Oranges
Peaches		

In addition, foods that are high in arylalkylamines (tyrosine, tyramine, tryptophan, aspartate, and phenylalanine) should potentially be avoided. These include:

Avocados	Corned Beef	Prunes
Bananas	Cranberries	Raisins
Beer	Fava beans	Rye bread
Brewer's yeast	Lima beans	Saccharin
Canned figs	Marmite	Sour cream
Champagne	Mayonnaise	Soy cream
Cheeses	Nutrasweet	Soy sauce
Chicken livers	Nuts	Vitamins B & C
Chocolate	Onions	Wines
Corned beef	Pickled herring	Yogurt
	Pineapple	

If any of your symptoms are improved by avoiding these foods and substances, you will begin to feel better within a few weeks. If you are feeling better, you may begin to challenge your system by adding some of these foods back and see if any of them specifically irritate you. Alternatively, you could just try to observe which of these foods do irritate your bladder to begin with. Perhaps the most significant bladder irritants are alcohol, beverages with caffeine, and carbonated beverages. Drinking plenty of water may help to increase your urinary pH and dilute out any of the effects of these specific irritants. This can also be used when dietary indiscretions lead directly to increased symptoms. In addition, in situations where bladder symptoms are dramatically increased, one might deliberately try to increase urinary pH by using bicarbonate "slush". A dilute solution of Bicarbonate of Soda may be made by mixing 1 teaspoon of baking soda with 16 ounces of water and drinking this, followed immediately by 8 ounces of plain water, three times an hour for the next 2-4 hours. This could be repeated 2 or 3 times a day. However, be careful about using baking soda if you are prone to salt retention or if you have high blood pressure.

**ALTERNATIVE FOODS:** Apricots, papayas, pears, and watermelons are low acid fruits, which may be substituted for the fruits listed in the charts. Coffee drinkers may substitute Kava or other low acid instant drinks, such as Postum. Tea drinkers can substitute non-citrus herbal or sun brewed teas, which are better tolerated by patients with these bladder symptoms.

Some people find these dietary manipulations useful. They are quite difficult to follow and may be difficult to maintain over a long period of time, but should give people some degree of benefit. This is not meant as a sole treatment for your urinary problem, and we will probably use this in conjunction with other therapies. However, there is no doubt that increasing the urinary pH by avoiding some of these foods, drinking plain water, or increasing the urinary pH with bicarbonate of soda will help to reduce urinary symptoms to some degree.

## **Appendix C**

# **Kegel Exercises**

Kegel exercises are recommended for both women and men who experience any degree of urinary leakage. They are designed to strengthen the muscles around the bladder and bladder opening. By exercising these muscles, you may improve your symptoms.

It is important that you perform the exercises correctly to gain the maximum benefits from them. Remember, exercise takes time to strengthen the muscles. If the exercises are done correctly, you should start noticing less leakage after 4-6 weeks of consistent daily exercise and even a larger difference after three months.

### **Finding the Pelvic Muscles**

Tighten your rectum as if you are trying to control passing gas or pinching off a stool. Do not tense the muscles of your legs, buttocks or abdomen, and do not hold your breath. You can also imagine you are stopping the flow of urine. When men tighten the muscles, the penis will move up and down. If you are unsure you are using the proper muscles, or if your symptoms do not improve, ask your physical, nurse, or therapist to help you identify the muscles.

### **How to Do the Kegel Exercises**

- Exercise is best done after emptying your bladder.
- Tighten the muscles and hold for 3 to 5 seconds. As your muscles get stronger, you should be able to tighten them for 10 seconds or longer.
- Relax for 3 to 5 seconds or for as long as you tightened the muscles.
- Breathe normally.
- Do 5-7 exercises at a time, 3 times a day. Increase up to 15 exercises at a time, 3 times a day.

### **When to Exercise the Muscles**

The Kegel exercises can be done anywhere or anytime - sitting, lying, or standing. People around you will not even know you are doing them. Just develop a routine so you remember to exercise every day. Do these exercises when you have an incontinent episode. For example, if you are experiencing urine leakage on the way to the restroom, stop and exercise your pelvic muscles until the leakage passes, then continue to walk to the bathroom. If you leak urine when you cough, tighten the muscles quickly when you cough.

## **Appendix D**

### **Prelief Q & A**

#### **What is Prelief?**

Prelief is a safe, effective over-the-counter product that removes the acid irritant from foods and beverages. Prelief helps prevent the discomfort of food-caused heartburn and other food acid problems before they happen. In addition, each Prelief tablet delivers 6.4% of your calcium RDI, with uniquely absorbable calcium - far more available than from calcium carbonate. The calcium in Prelief is as readily available as the calcium in milk.

#### **Why is reducing the acid in food necessary?**

Many people are highly sensitive to food acid. For some, food acid can cause heartburn. In many cases of acid discomfort, the problem lies with obvious or unsuspected food acid. Removing the acid irritant from the food will allow most people to stay comfortable.

#### **How is Prelief different from the acid blockers?**

Prelief is the only acid fighter that is designed to take irritating acids out of the foods you eat, while leaving your protective stomach acid untouched. This is important because stomach acid is essential to both your digestion and your body's defense mechanism against bacteria; stomach acid is actually a first stop in the body's germ-defense system.

#### **How do you use Prelief tablets?**

Take two tablets with each meal, snack, or beverage. Two tablets are usually sufficient to remove acid, but more can be taken if needed.

#### **How do you use Prelief powder?**

The recommended use is 1/4 teaspoon of powder to each serving of food or beverage. More can be used if needed.

#### **Where can I purchase Prelief?**

Prelief is available in the antacid section of leading supermarkets, pharmacies, and discount stores. If you do not see Prelief on the shelf, ask the store manager - not the pharmacist. The store manager stocks and orders the over-the-counter products and will locate it for you.

#### **What is the Prelief hotline?**

The Prelief hotline is the toll-free number that provides you with product information, mail order service and the names of stores that carry Prelief. The Prelief toll-free hotline, 1-800-994-4711, is available weekdays from 9:00 a.m. to 5:00 p.m., EST.