

# Understanding Bladder Symptoms in Parkinson's Disease – What You Need to Know

Problems with urination due to bladder dysfunction are common in Parkinson's disease (PD). Studies indicate that up to 80 percent of people with PD experience bladder-related problems at some point in the disease. Bladder symptoms can impact general health, restrict daily activities and social interactions, and worsen quality of life. Understanding the cause of the problem and how to counteract the symptoms can help minimize the effects and improve outlook.

## About the Bladder

Urine is made in the kidneys and stored in the bladder before elimination. Urine flows out from the bladder through the urethra. The bladder is a muscular sac which can hold up to a pint of liquid. As it fills, stretching stimulates the bladder muscle (called the detrusor) to contract. At the same time, rings of muscle surrounding the urethra, called sphincters, relax. This allows urine to flow through the urethra. The brain can control this process by suppressing the contraction of the detrusor, and preventing the relaxation of the sphincter, until it is convenient to urinate.

## Types of Bladder Dysfunction

The most common type of bladder dysfunction in PD is overactive contraction of the detrusor muscle, even when the bladder is not full. This leads to an increased sense of urgency, as well as increased frequency of urination, and nocturia—the need for frequent urination at night. Some people experience urinary incontinence. Incontinence occurs when urine is released involuntarily.

When the activities of the detrusor and sphincter aren't coordinated, it can lead to incomplete elimination of urine and the sensation that the bladder is not completely empty. Incomplete emptying of the bladder can predispose a person to urinary tract infections, so it is important to get

this evaluated. When the sphincter is weak or the brain is unable to suppress sphincter relaxation, a person may experience urine leakage. This is especially common when the abdominal muscles contract, such as when you laugh, cough, or sneeze.

## Other Causes of Bladder Dysfunction in PD

Bladder dysfunction may occur from causes unrelated to PD, including infection, an enlarged prostate in men, and weak pelvic muscles in women. Advancing age increases the risk for bladder dysfunction. The PD disease process may contribute to bladder dysfunction through its effect on the nerve cells that carry messages between the bladder and the brain, or the nerve cells within the brain that process these messages. Bladder dysfunction can also be affected by diet and medications: alcohol and caffeine irritate the bladder, increasing bladder muscle contractions, and some blood pressure medications may relax the sphincters.

## Evaluation of Urinary Problems

Your treatment team may refer you to a urologist, a specialist in bladder problems. The urologist is likely to want you to keep a diary of frequency of urination and urinary symptoms in order to better understand your specific problems. The doctor will ask about medications you are taking, as well as use of alcohol, caffeine, and certain foods that may affect urinary symptoms.

There are several tests that provide important information about the causes of your symptoms. These include taking a urine sample, to look for infection; urine flow tests, to understand the rate and volume of urine flow; and imaging tests to determine residual volume in the bladder after urination. These are all usually performed in the urologist's office.

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## Treatment of Bladder Dysfunction

Your doctor will review your findings and recommend a treatment plan. Treatments may include diet and lifestyle changes, as well as pelvic floor exercises to strengthen muscles involved in controlling urination. A bedside commode can be helpful when a person is trying to get to the bathroom in the middle of the night. Non-pharmacologic aids including absorbent pads may also be recommended. Be sure to inform your healthcare team of any new treatments, especially new medications, as some treatments may impact your PD symptoms.

Medications can be used if necessary. Anti-cholinergic medications are used commonly for overactive bladder and some have specifically been studied in PD. The main concern with this class of medications is the possibility of cognitive side effects. Certain anti-cholinergics have been developed with particular affinity to the cholinergic receptors in the bladder, as opposed to those in the brain, which may reduce, but not eliminate the chance of cognitive side effects. Other anti-cholinergics do not readily cross the blood-brain barrier and therefore might also reduce the chance of cognitive side effects. Beta-3 adrenergic agonists also work to relax an overactive bladder and have been studied in PD. They tend to have a lower risk of cognitive side effects than anti-cholinergic medications.

In certain situations, botulinum toxin injections into the bladder can relax the bladder and allow for more normal urination. A known side effect of this treatment however, is the inability to completely empty the bladder which may cause urinary tract infection as well as the need for self-catheterization. Procedures such as sacral or tibial nerve stimulation may play a role in treating urinary incontinence when lifestyle changes and medications are not effective.

Because an enlarged prostate is such a common contributor to urinary dysfunction in the general population, and often exacerbates the urinary dysfunction in PD, treating an enlarged prostate with medication or a surgical procedure may be very helpful as well.

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