

This term refers to bladder disorders due to nerve damage, commonly involving the spine: in spinal cord injury or chronic spinal conditions including arachnoiditis.

There are 3 main types of neurogenic bladder problem:

1) **Spastic bladder** : if the communication between the VRC and the brain is disrupted by spinal cord damage, then the bladder will be emptied automatically by a reflex process.

This causes dribbling, frequency (the urge to urinate more often than usual) and/or incontinence. Another version of this is an **irritated or unstable bladder**, which may tell the brain that it is necessary to empty the bladder when it is only partly full.

This may lead to frequent trips to the toilet, passing only small volumes of urine each time. If the bladder muscle (detrusor) is overactive, you may experience sudden urge to void and fail to get to the toilet, resulting in incontinence.

2) **Flaccid bladder**: this is when the bladder is 'lazy' and fails to empty; messages of bladder fullness are no longer perceived and the bladder overfills, which leads to stretching and weakness of the bladder muscle.

This tends to cause overflow and overflow incontinence, with some frequency, urgency as well as dribbling or hesitancy.

There is considerable risk of infection as urine can overflow or be sent back up (reflux) towards the kidneys, which might cause damage in the longer term.

3) **Dyssynergic bladder:** also known as '*conflicting bladder*', as the bladder and sphincter no longer function in conjunction with each other, their actions being uncoordinated.

The bladder may contract to empty, but the sphincter also contracts to retain the urine, or both the bladder and sphincter are relaxed. This type of problem can be seen in combination with either of the first 2 types.

Symptoms include urgency followed by hesitancy, dribbling or incontinence. One of the important problems with dyssynergia is that if the bladder contracts but the sphincter fails to open to allow the bladder to empty, then there may be urine reflux back up towards the kidneys.

### **Spinal cord injury:**

The level of injury will affect the type of bladder problem. This may also apply to patients with non-traumatic spinal problems such as arachnoiditis.

If the level of spinal abnormality is above T12, a spastic or reflex bladder occurs.

Below T12/L1, a flaccid or non-reflex bladder occurs: there may be loss of sensation, so that the bladder becomes overfull and distended. This may also cause urine to reflux up the ureters towards the kidneys. To avoid such problems, it is important to ensure that not more than about 400cc of urine collect.