



## Urinary Incontinence in Dogs



I hope you enjoyed the articles on FLUTD in cats. The next couple of articles look at urinary incontinence in dogs.



Urinary incontinence is the loss of voluntary control of urination.

This means the dog is neither intending to urinate, nor is aware it is doing so. It can vary in presentation and severity, and your dog may just drip small amounts of urine throughout the day, or he/she may pass a large amount in one go. You may only see your dog licking at the vulva or penis ('urine scald' or 'urine burn' is a common complication of urinary incontinence), or notice that their bed seems wet in the morning. It is important to note that urinary incontinence is not the same as increased frequency of urination, and dogs which urinate when scared or excited are not truly incontinent.

In this article, we will cover the causes of urinary incontinence in dogs; in the next article, we will cover its investigation and treatment.

### Causes of Urinary Incontinence

I have described below a number of causes of urinary incontinence in dogs. However, as you will see, not all of these cause a true incontinence, and the **apparent** leaking of urine may be secondary to an underlying disease. As you will appreciate, it is very important that we work out whether we are dealing with a true incontinence, or not.

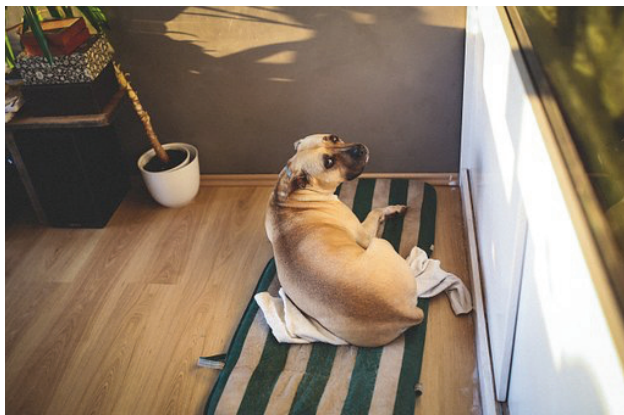
#### **Congenital problems (from birth):**

The most common congenital defect leading to incontinence are ectopic ureters. This is where the ureters (the tubes which carry urine from the kidneys to the bladder) do not enter the bladder as they should do, but connect directly with the urethra or vagina. This means urine never enters the bladder, so the puppy is unable to store it. The puppy will be unable to urinate normally, and will continuously drip. Some puppies only have one ectopic ureter, so urine can enter the bladder from the normal ureter, but the dog will still continuously drip urine due to the one abnormal ureter. Ectopic ureters are more common in female puppies, especially in certain breeds such as the husky and labrador.



### **Urethral sphincter mechanism incompetence (USMI) or hormone-responsive incontinence ('hormonal incontinence'):**

USMI is the most common cause of urinary incontinence in dogs, but is seen far more frequently in spayed females. Incontinence usually, but not always, develops 3-4 years after spaying.



The urethral sphincter is a muscular 'ring', composed of two muscles and located within the urethra, just next to the bladder. Contraction of the urethral sphincter prevents the release of urine from the bladder.

Exactly why USMI develops remains unclear, but it is thought to be due to a decline in oestrogen levels. This leads to a reduction in the number of special receptors, called 'adrenergic alpha-receptors', within the

urethral sphincter. When chemicals released by the body stimulate these receptors, the urethral sphincter closes. The role of oestrogen in USMI is why it is sometimes called hormone-responsive incontinence or 'hormonal incontinence'.

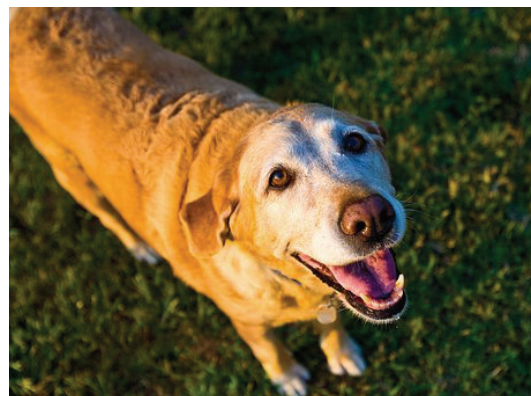
Older dogs may also suffer weakening of the urethral sphincter muscles as part of an age-related, generalised muscle weakening. They are likely to show other signs of muscle weakness, such as an inability to fully stand up, or being slow in getting up.

### **Urinary tract infection and cystitis (inflammation of the bladder):**

Urinary tract infections and cystitis do not cause a true incontinence, as your dog will usually know he or she is urinating. However, they can lead to an increased urge to urinate so the dog will urinate in inappropriate places or go more frequently. It is very easy to confuse 'urge' incontinence with a true incontinence. If the infection/inflammation has been present for some time, the bladder may become scarred and be unable to fully expand. This can lead to a true incontinence.

### **Bladder and urethral stones, or tumours:**

Stones or tumours can lead to 'overflow' incontinence, which is where the bladder becomes so full, there is nowhere for the urine to go, so it leaks out. This can occur when stones or tumours lead to a partial blockage of the urinary tract. The partial block prevents the bladder emptying properly, until it reaches a point that urine is forced around the blockage. Although you will not necessarily see your dog straining to urinate, if you do, it is very important that you bring them to the vet as soon as possible - blockages of the urinary tract are fatal if not treated quickly.



**Brain or nerve damage:**

Damage to the brain, spinal cord or nerves directly controlling the bladder/urethra can all lead to urinary incontinence. Intervertebral disk disease, degenerative disorders of the spinal cord, and trauma are common causes of spinal cord or nerve damage. The dog may be unable to feel that the bladder contains urine, be unable to contract the sphincter muscle, or both. There are usually other neurological signs in these cases.

**Prostatic or vaginal disease:**

As with urinary tract infections, prostatic or vaginal disease can lead to an increased urge to urinate. In addition, prostatic disease can lead to a partial obstruction of the urethra and cause 'overflow' incontinence.

**Detrusor urethral dyssynergia (DUD) or 'functional obstruction':**

This is a very complex disease, but it is likely to be more common than initially thought. It is one reason why some dogs, especially males, do not respond to treatment for USMI. DUD is technically an 'overflow' incontinence and is caused by lack of coordination of the muscles of the bladder and urethra. When the bladder muscles contract to expel urine, the urethral muscles should relax to allow urine to pass. In DUD, this does not happen, so the dog is unable to fully empty their bladder. Again, you will not necessarily see your dog strain to urinate.

**Diseases and medications, which cause excessive urine production:**

Diseases that cause excessive urine production, such as diabetes or Cushing's disease, do not result in a true incontinence. However, excessive urine production, which leads to excessive drinking, means the dog is unable to hold urine for very long, so it starts leaking out. The dog will, in most cases, know it is leaking but cannot help it.



Medications which cause increased urine production and excessive drinking can have the same effect. Steroids and phenobarbitone (used to treat epilepsy) are classic examples of this.

If you have any questions about the causes of urinary incontinence in dogs, or you feel your dog may be incontinent, please get in touch. In the next article, we shall go over the investigation and treatment of hormonal incontinence in dogs.