

# URINARY INCONTINENCE

Leaking urine while sleeping is a common problem in dogs, especially females, and it is seen occasionally in cats and rabbits. In dogs, it most commonly occurs in spayed females. Female dogs that still have their ovaries have estrogen in their bodies but spayed females have almost none. Estrogen influences the muscle tissues of the urogenital tract, including the sphincter muscles that hold the bladder closed. Without estrogen, muscle tone is not as good so when the dog is sleeping and relaxed urine can leak out.

It's important to check a urine sample for infection whenever urine leakage occurs. If the bladder sphincter muscle is relaxed enough for urine to leak out it's also going to let bacteria in. If other problems exist, such as diabetes, kidney disease or Cushing's disease, those can make the problem worse. Clues to these diseases can be found on urine testing as well.

There are two ways to treat urinary incontinence. The first is with estrogen supplementation. A synthetic estrogen called Incurin, is given daily until the urine leakage improves and then usually every other day after that. Estrogen can suppress bone marrow and lead to anemia, so pets on Incurin are monitored for that. Incurin cannot be used on intact female dogs or in males. It is used in spayed females only.

The second drug is phenylpropanolamine or PPA. This is a type of antihistamine that has effects on smooth muscle tone. Smooth muscles are the kind that work without conscious thought, such as the heart, the muscles that cause the intestines to contract and, in this case, the bladder sphincter muscles. PPA rarely causes drowsiness, the chief side effect of most antihistamines. Instead, it can cause high blood pressure, so we monitor for that.

There are two forms of PPA: regular, which comes in a chewable form and in a liquid as well as in plain tablets or capsules; and sustained release. Some dogs won't respond well to the regular types of PPA but will do well on the sustained-release kind, which also lasts longer and so needs to be given less often.

We usually start spayed female dogs with incontinence on Incurin and males on PPA but if an owner thinks it would be easier to remember to give medication every day than every other day then we can use PPA even in a female dog. If a female dog develops anemia or other side effects on Incurin we would switch to PPA. If PPA causes high blood pressure we can add drugs for that. Occasionally we need to use both Incurin and PPA together. For cats and rabbits with urinary incontinence we use PPA.

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