

# How to Collect a Urine Sample

## BACKGROUND

There are many important reasons for needing to examine a dog or cat's urine, including detecting bladder infections, diabetes, and many other health problems. Usually the urine sample will be analyzed for concentration, red blood cells, white blood cells, bacteria, crystal content, and sugar (glucose). Additional tests, such as protein or hormone measurements, can be performed as needed.

The way a urine sample is collected determines how it can be used; therefore, a certain collection method may be requested by your veterinarian. The simplest method is by free catch. A free-catch sample is caught midstream while the dog or cat is urinating. This type of sample is commonly acquired at home and then brought to the veterinary hospital. Other methods include cystocentesis and catheterization. During cystocentesis, a sterile needle is introduced painlessly through the abdominal wall and into the bladder to allow urine to be drawn out with a syringe, similar to amniocentesis when fluid is withdrawn from the uterus of a pregnant mother; this is the best way to get urine for culture during infection. With catheterization, a sterile tube (catheter) is passed into the bladder through the urethra (through the vagina or penis).

The purpose of urine collection is to obtain a clean sample and provide it to the veterinarian for testing. Usually, it is ideal to collect the sample from the first urination of the day. This urine has been stored in the bladder overnight and will contain more cells for examination. It is also often easier to collect first thing because it is likely that your pet will need to urinate soon after waking up in the morning.

Sometimes your veterinarian will need a fresh sample, and sometimes samples from several separate urinations made over a few days are best, depending on testing. Be sure that you ask which of these applies for your dog. If you are asked to bring a fresh sample for urinalysis, plan to collect it first thing in the morning on a day when you can take it straight to your veterinarian's office – many of the cells seen in the urine change with time, so fresher is better for routine analysis. On the other hand, if your veterinarian plans to measure something like the amount of protein lost in the urine, he or she will likely prefer to have a sample of urine from 2 to 4 different times over 2 to 3 different days. If this is the case, the older urine samples can be frozen until delivered to your veterinarian's office, usually with one fresh, unfrozen sample from the same day that you make the delivery. Be sure to ask your veterinarian or veterinary technician beforehand to be sure you are handling and storing the sample(s) correctly.

## HOME URINE COLLECTION FROM DOGS

What you will need:

- One or more clean, dry storage containers
- One or more clean, dry collection containers
- Medical examination-type latex gloves to keep your hands clean
- ± A damp paper towel

You may have been provided with a sterile cup for urine sample storage by your veterinarian. That is appropriate for transporting the urine sample to your veterinary hospital, but it may not be the best container for collecting the sample. It helps to think about how your dog urinates. Most females will squat close to the ground, so a shallow wide container like an aluminum pie plate will work well to slide underneath. On the other hand, most males lift their leg and aim for a tree, fire hydrant, or some other structure. For these dogs, a deeper collection container will be better so the urine

won't splash out; something like a plastic disposable margarine tub works very well.

Before taking your dog out in the morning to urinate, have a quick look at her vulva or his prepuce (the skin covering the penis). If there is obvious debris, gently wipe it away with a damp paper towel. There is *no* need to disinfect the area, just wipe off visible debris. You'll probably want to put on gloves before wiping, and before collecting urine. The gloves are just to keep your hands clean and dry.

It is nice but not necessary to have an assistant for this task. One person can hold the leash while the other holds the collection container. If you are doing this by yourself, use a short leash. Stay within a few feet (1 meter) of the dog. If a dog is used to going out to urinate, it may just take some extra time for him/her to eliminate in front of you, and a longer walk is appropriate then. Have the person catching the urine hold the container by the edge in his or her gloved hand. It might help to let the pet see and smell the container ahead of time, to be less distracted by it when it is put to use.

Head outdoors, to an area favored by the dog for normal urination. Let the dog sniff around as normal, while the catcher (you or an assistant) stays close to their rear. When the dog starts to urinate, the catcher will need to be fast, but at the same time will not want to use sudden big movements or noises that might scare the dog into stopping urination. As the dog positions itself, get ready. However, let the first 1 to 2 seconds' worth of urine go by without collection. Your goal is to catch a "midstream" sample. Slide the collection container under a squatting dog from the rear (typical for female dogs), or hold the container out to catch the urine stream in mid-air for a dog that is urinating on a surface (typical for male dogs). You do NOT need to fill the container up. You will only need a sample size of a few ounces (up to 60 mL) at most (don't bother measuring, just guess). As soon as you guess you have enough urine, pull the container away even if the dog is still urinating. In fact, if you wait until the dog is finished, he or she will often ruin the sample by stepping on or tipping over the collection container. Either put a lid on the container, or set it down to avoid spilling while your dog finishes any other morning bathroom business. You don't want to lose your sample after all that work to catch it!

Sometimes, dogs are scared by your attempt to collect urine. Usually, by letting them sniff the container and you making quick but smooth quiet movements, they will get used to it and be OK with the procedure. Every now and then, there is a dog that just won't allow this kind of collection. Don't worry, your veterinarian can get urine one of the other ways. Just don't let them urinate on the way in to the veterinary hospital!

Once you are back home with the sample, you might need to transfer it to another container. If there is already a tight-fitting lid (like a margarine tub), you can just put the entire tub in a ziplock-type plastic bag. Otherwise, pour the sample into something that does have a lid – it might be a container supplied by your veterinarian or one you have found on your own. Samples for urinalysis should go straight to your veterinarian's office within an hour or two. On the other hand, if your veterinarian has asked for several samples, it may be appropriate to freeze them. You can either freeze each storage container separately, or to save freezer space you can combine the samples into one container. If you combine samples, be sure to add about the same volume from each time – you don't want most of the sample to be from one urine attempt with only a tiny bit from 2 or 3 other trips outside. As an example, you might

freeze about an ounce (30 mL) of urine on day 1, and on day 2 add another ounce (30 mL) to the same container, then place it immediately back in the freezer after the addition (don't thaw the day 1 sample out). Either way, be sure to seal the samples well in a ziplock type bag before freezing to keep your freezer clean. And don't forget either that your veterinarian will probably want one fresh, unfrozen sample the day of sample delivery.

## HOME URINE COLLECTION FROM CATS

Collection of a free-catch sample from a cat at home begins with cleaning and emptying the litter box, without refilling it. Replace the normal litter with dust-free silica "litter pearls," which are clear plastic beads. These beads might be supplied by your veterinarian

or can often be purchased from larger pet supply stores or online. Scatter the bottom of the pan with 1-2 cups (125-250 mL) of the beads. This provides something for the cat to push around in the box but prevents absorption of the urine. Pour whatever urine has not been absorbed into a storage container. Some cats are very particular and will not tolerate a change in litter. With these cats, it may be easiest to have the veterinarian collect a sample via cystocentesis (see above).

## AFTERWARDS

After dropping the sample off at the veterinary hospital, you can expect most results to be available in 36 hours or less; exceptions are urinary hormone assays, which require several days.

## FREQUENTLY ASKED QUESTIONS

*I collected a sample, but it has hair/leaves/snow in it. Is that a problem?*

In general, free-catch samples must be free from debris or contamination from the environment. It is a matter of degree, so if you are concerned about contamination of the sample, be sure to describe the nature of the contamination to the veterinary technician when you drop the sample off.

*How am I supposed to keep my pet from urinating so I can try to collect a sample at home?*

Attempt to collect a sample first thing in the morning. With dogs, it may be helpful to keep them inside overnight, and plan to collect urine during an on-leash walk in the morning. With cats, you can attempt to collect urine at home by changing the litter as described above. Alternatively, restrict your cat from using a litter box, and plan to take him to the veterinary hospital in the morning for cystocentesis. Do not put a towel in the carrier or anything else your cat could consider as a substrate for urinating on. Finally, if your cat's bladder is empty in the morning or if your cat urinates while on the way to the hospital, you may have to leave your cat at the hospital for several hours to wait for his bladder to fill again so the staff can acquire a sample there.

*My pet is leaking urine all the time. What do I do?*

In such circumstances, there is often very little urine stored in the bladder so a pet cannot void a normal volume of urine at one time. This makes collection at home difficult, and your speed at catching the urine can help. Still, even with the best of efforts, the volumes of urine may be so small as to be impossible to collect. In this

instance, collecting a sample off the floor may be the only means of collection. This is most easily done in the veterinary hospital where syringes are available to collect samples in this way. A urine sample that is collected off the floor is imperfect, but it can still yield important information.

*The urine sample is mixed with feces/stool as well. Is that a problem?*

Unfortunately, yes, because urine is much cleaner than feces. Fecal contamination can interfere with results. If there is obvious mixing of urine and feces in a litter box, for example, then you should discard that sample and begin again.

*I have several cats. How do I make sure I have a sample from one cat in particular?*

If the cat in question uses only one litter box, and no other cats use that litter box, the process described above (with plastic litter beads) can be carried out. Otherwise, the urine sample should be drawn from your cat at the veterinary hospital via cystocentesis (see above).

*I don't like the idea of collecting urine, or I am having trouble doing it. Can't my veterinarian collect the sample?*

The simple answer is yes. Just let the veterinarian know that this is your preference. Be sure that if you are bringing your pet to have urine collected, don't let him or her urinate before coming in! Take your dog quickly into the clinic on a leash without pausing, or keep your cat away from the litter box for several hours before your trip in.

Practice Stamp or Name & Address

Also available in Spanish.