

ACCES for Pet Health

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The Importance of Compliance**By Dr. Beth Davidow, DVM DACVECC**

My 19 month old son was recently sick and sent home with antibiotics. The excellent doctor who saw him really emphasized how important it was that he received not most of his antibiotics, but **ALL** of the antibiotics at the right time and for the entire course. It was a good thing that he really drilled the importance of this into us because it turns out my son is tougher than most cats to medicate. We put a checklist on the refrigerator and I counted down the days until we were done because it was a battle three times a day to get the supposedly good tasting liquid into him.

Each day I gave him the medication, I thought about the very sick animals I send home, sometimes not with one medication but 4 or 5 medications. Cats with liver disease often go home with antibiotics, anti-nausea medications, as well as medications to specifically help their liver. I wonder how many owners give up at some point because of the difficulty in getting these medications into their animals. I wonder if I do as well as the astute pediatrician we saw to really emphasize that the difference between recovery and not is often whether owners can get these medications into their pets.

So why is giving ALL the doses of antibiotics so important? It is both to make sure the infection is completely cleared and to make sure antibiotic resistance does not develop. Antibiotics kill bacteria by reaching a certain concentration in the area of the infection. For most types of commonly used antibiotics, the importance in how they kill the bacteria is in maintaining that concentration in the infected area all the time. Right after you take a drug like cephalexin or amoxicillin, the concentration is very high. Over the next 8 hours, the concentration falls. The next dose is due at the time calculated to make sure the antibiotic concentration stays above that needed to keep killing bacteria (the minimum inhibitory concentration or MIC).

When you miss a dose or give a dose late, the concentration falls close to or below the MIC and some bacteria can grow again, making it harder to get on top of the infection. Also when the concentration falls, mutant bacteria that have some resistance are more likely to grow, which increases the risk that the antibiotic might fail.

So why do you need to give the whole course? Often both people and animals feel much better after only 2-3 days of antibiotics. The problem is that the bacteria are now at a lower level but are usually not completely gone. If the antibiotics are stopped too early, the bacteria that grow back are again more likely to be mutated and to be now resistant to the original antibiotic used. This lack of complete follow through with treatment is one reason for the multi-drug resistant forms of



Be sure to follow your veterinarian's instructions regarding medications for your pet.

tuberculosis that now exist.

Now that we've discussed why giving the whole course of antibiotics and not skipping doses is so important, we'll discuss in the next posting some ways to try to be successful in accomplishing this with your pets.

Posted by **Christina Ryan** at November 30, 2008 12:00 a.m.

· [Return to The Importance of Compliance](#)