

Best Friends BULLETIN



Winter 2024

Yesterday was our annual inventory day, where we spend the whole day counting every piece of equipment, can of food, medication and supply item in the hospital. We pull everything that's expired, make sure we have correct expiration dates in the computer, evaluate what products didn't sell well last year and ensure our dollar amounts are correct for our accountant. That means combing through reams of inventory reports to find errors. One year, we had \$10 worth of plastic pipette tips mistakenly valued at \$10,000. Another year, I found that our \$57,000 surgery laser had never been added to our equipment inventory.



One of the most fun things about the changing seasons is updating our exam and waiting room décor. We seem to have an obsession with small felt creatures, which you'll find engaged in all sorts of seasonal activities on our shelves. We hope you'll come see us and our felt animals in 2024, and enjoy a cup of coffee or hot chocolate in our lobby. We can't wait to see you and your pets in the New Year!

Dear Clients & Friends...

Happy New Year to all of you. I hope you all had a happy and healthy holiday season! I think the holidays are often stressful for our pets, as well as ourselves. January lets us reset and start the year off in a good direction. We are trying digital newsletters via e-mail this time around. This is mostly due to the cost of printing and mailing, but also because it's so much quicker. It can take weeks from the time we send the newsletter to the printer and the time they actually get it printed for us. All the newsletters then have to be labeled, bundled and sorted to take to the Grafton post office. Sometimes it then takes another week or two for you to actually receive them.

We wanted to get you some more information about our latest dental coupon offer, which started Jan. 2nd 2024. You can save \$75 during the first three months of the year on a dental cleaning and full-mouth dental radiographs for your pet!

For me, the holidays are usually a flurry of activity around getting everything set for the new year here at Best Friends – a new annual handout or two, new Health Care Plan contracts, training plans for January, end-of-the-year financial reports, plus this newsletter.

We are making changes to our dental and pain management protocols, covered in this newsletter, as well as our pre-visit mailings. I have four new handouts in the final stages, as well as a major upgrade to our bird care folders. We are training several new employees and beginning winter performance evaluations with the rest of the staff.

*Dr. Nan Boss, DVM and the team
at Best Friends Veterinary Center*

Dental Facts to Remember:

- 🦷 Periodontal disease is the number one medical condition in small animal medicine.
- 🦷 Pets who receive dental care live 2 years longer, on average, than pets that don't.
- 🦷 Infected and broken teeth are painful to your pets, just as they would be in a person.

COUPON

\$75 OFF a dental cleaning including dental radiographs.

Valid Through: 3/31/24



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National Pet Dental Health Month

It's that time of year again – February, National Pet Dental Health Month, is fast approaching. As always, this newsletter contains a coupon for dental cleaning performed in February. This year, we are expanding it into January and March, because we can't fit every pet needing dental care into the schedule in February. We always end up extending into January and March anyway, so we decided to include the entire first quarter of the year.

We take pain very seriously at Best Friends. If you have ever had oral pain, you know how distressing and debilitating it can be. An abscessed tooth, dry socket or a cavity, can make your whole face hurt! Our pets are very stoic even when they are painful, and they can't tell us where it hurts.

The Importance of Dental Radiographs

While there are many aspects to high quality oral care for pets, in this article, we want to focus on an indispensable tool we have in the hospital: dental X-rays. You have X-rays performed when you visit the dentist or oral surgeon, and guess what? Your pet should, too! The American Animal Hospital Association's (AAHA) Dental Guidelines strongly recommend that every pet undergoing a dental procedure have dental X-rays performed while under anesthesia.

For years, we have made full mouth dental x-rays optional, but we have made a new year's resolution to include them in every dental procedure in 2024. There are too many hidden problems that we can't see without radiographs. It's not good practice or high-quality medicine to leave them out.

Dental X-rays safeguard against our missing hidden causes of pain in the oral cavity. Overall, dental X-rays ensure your pet goes home happy and with a healthy, comfortable mouth.

X-rays can help find and diagnose potential problems a pet may have. Common problems found include:

Periodontal disease (infection of structures around the teeth, including the gums)

Abscessed teeth

Tooth resorption (see page 6 for more info)

Fractured or discolored teeth - recent studies show as many as 49% of pets have fractured teeth! Discoloration means damaged blood supply to the tooth.

Retained root tips after a previous extraction

Missing teeth

Abnormally located teeth

Malformed teeth

Osteomyelitis (bone infection)

Bone lysis (disintegration) due to cancer

Traumatic injury



The ONLY way to accurately evaluate the entire tooth is to take an X-ray. Teeth are a little like icebergs: the part above the gumline we can see, called the crown, is only part of the story. Dogs and cats have long roots (one to three per tooth depending on the type of tooth) below the gumline. It is not uncommon for the crown of a tooth to look normal, yet a dental X-ray reveals a problem hidden below the gums that necessitates treatment, such as extraction or referral to a veterinary dentist.



We see way too many mouths that look like this, with advanced periodontal disease that should have been addressed long before. We can't save the infected teeth in the red box. The bone has been eaten away, leaving the tooth roots exposed. These are major chewing teeth that have to be extracted.



A. This is a radiograph of a cat's lower jaw and teeth. The bone has eroded away due to periodontal disease, leaving 50% of the tooth roots unattached to the bone. When 50% or more of the root-bone connection is lost, the tooth needs to be extracted.

B. This tooth shows a hole forming in the center, where it is invisible to the naked eye. The tooth you can see half of at the left of the photo is dissolving away completely.

C. This is what a normal dental x-ray should look like. We love it when we see your pet's healthy smile inside and out!

Nation Enters Third Year of Historic HPAI Epizootic

By R. Scott Nolen for the AVMA

The largest epizootic of highly pathogenic avian influenza (HPAI) in the nation's history is entering its third year, but there is hope. The U.S. Department of Agriculture (USDA) continues to evaluate several vaccines shown in initial studies to protect chickens against the deadly disease. A vaccine for turkeys is also underway. And researchers are looking into why the most recently circulating strain is one of the most virulent to date.

Since January 2022, multiple HPAI viruses have infected tens of millions of wild birds, commercial poultry flocks, and more than two dozen species of terrestrial and marine mammals worldwide. This bird flu panzootic has also spread across Africa, Asia, the Americas, Australia, Europe and even into Antarctica.

A 2023 report by the Food and Agriculture Organization (FAO) of the United Nations described the HPAI panzootic as unprecedented in terms of its extensive spread and the number of wild birds and mammals affected. "The devastation caused by this virus underscores the need to prevent new strains from establishing in wild birds and causing further waves of infection," the report states.

According to World Animal Health Organisation (WOAH) data collected since 2005, HPAI appears to be seasonal, with spread being lowest in September, beginning to rise in October, and peaking in February.

The main wild species involved in the viral cycle of avian influenza are waterfowl, gulls, and shorebirds; however, this clade of the virus seems to pass easily between different bird species, WOA information states. Direct exposure of farmed birds to wild birds is a likely transmission route.

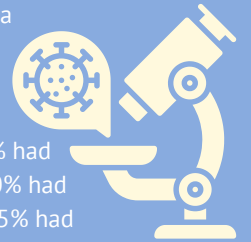
In the United States, HPAI infections have been detected in wild birds in every U.S. state save Hawaii. As of December 11, the virus was confirmed in just over one thousand commercial and backyard poultry flocks in 47 states, affecting over 72 million birds, according to the USDA Animal and Plant Health Inspection Service (APHIS).

Mountain lions, striped skunks, red foxes, and harbor seals have contracted the virus as have several outdoor cats, the agency said.



Tidbits...

Rising temperatures may be expanding insects' geographical territory and leading to higher rates of tick-borne diseases and infections transmitted by mosquitoes among dogs in animal shelters in the US, according to a study in *Parasites & Vectors*. The researchers studied 3,750 dogs from shelters in 19 states, finding more than 10% had heartworm infections, over 8% had Lyme disease bacteria, an additional 10% had other tick-borne infections and almost 5% had more than one disease.



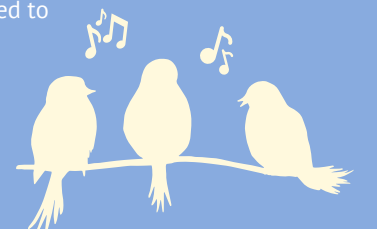
The population of animals in US shelters grew by almost 250,000 animals this year, according to Shelter Animals Count, leaving many operating in crisis mode. Housing insecurity and inflation are driving many surrenders, and shelters are trying to avoid resorting to euthanasia by limiting intakes, keeping dogs in offices and hallways, waiving adoption fees and expanding foster programs, pet food pantries and spay and neuter clinics.



Pulmonic stenosis is increasingly common in French bulldogs, and a procedure being performed at Washington State University's Veterinary Teaching Hospital offers hope for them and other dogs with the congenital heart defect. Two dogs have received a pulmonary valve stent implant at WSU since veterinary cardiologist Kursten Pierce, with North Carolina State University, visited the university to train staff on the procedure.



Male songbirds are constantly singing to exercise their vocal muscles and produce high-quality calls to attract females, according to a study in *Nature Communications*. Researchers ran a series of experiments with zebra finches and discovered that when the birds were prevented from regularly singing, their singing quality declined to juvenile levels, and female birds preferred songs from a male who had been using his vocal muscles daily.



The science of pain management has made huge strides over the past twenty years. Every few years, we have to change our protocols for medications based on the arrival of new drugs and studies about how pain medications affect dogs and cats.

Some of this science affects our pain management protocols for surgical and dental procedures and acute pain, such as from a broken leg or a ruptured (“slipped”) intervertebral disc. Last time we updated our protocols, we started adding a small amount of the anesthetic drug **Ketamine** to every IV fluid bag, as it was found that little “microdoses” of ketamine greatly enhance the effectiveness of opioid drugs such as the hydromorphone we use for both pain and pre-anesthetic sedation. Now we know that adding a little **Dexdomitor** as well enhances the effect of both of these drugs.



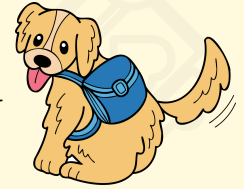
Dexdomitor is a drug we use frequently for both pain and sedation. We use larger doses for sedation and severe pain and tiny ones to make recovery from anesthesia smoother or to augment other pain medications. We’ve recently started using it orally as well as by injection. For dogs that are too aggressive to handle without sedation, this is often safer and easier than an injection.

We have dog owners give other oral anti-anxiety medications ahead of time and then we have them give a squirt of **Dexdomitor** orally when they arrive, while the dog is still outside in the car. They stay quietly in the car for the 30 minutes or so until the **Dexdomitor** kicks in. Then they either walk in under their own power if they are able, or we can carry them in or use a gurney.

When we are done with whatever procedure we are doing, we give them a reversal agent. 10–20 minutes later, they wake up and go home. It takes extra time waiting for each medication to start working, but compared to having to try to get a muzzle on them and wrestle them into submission to inject the **Dexdomitor**, it’s worth the time, and it’s much safer for my team.

Ketamine, an anesthetic agent we’ve been using for 40 years or more, has some new uses as well. It’s now being used in humans for chronic pain syndromes and severe depression. Painful neurological conditions such as spinal cord injury, shingles, phantom limb pain, and chronic regional pain syndromes can respond to as little as one subcutaneous injection a month. It also comes in a nasal spray for people called **Spravato™**.

Studies are underway on an implantable device for dogs called the **Rx Activator™**. The dog wears a small pump in a backpack, so it can receive tiny ketamine doses over time.



We are beginning to use subcutaneous injections of ketamine for chronic pain in dogs as well, though we aren’t sure yet how well it will work. It’s an inexpensive generic drug since it’s been around for so long, so it’s easy to try. We plan to start using it for intervertebral disc disease, bone cancer, severe arthritis, and other chronic, painful conditions.

Chronic pain is different from acute pain and, in fact, is an entire disease process in and of itself. Even when the original source of pain is removed, the chronic pain may not resolve. 15–47% of human patients who undergo hip or knee replacement surgery continue to feel pain in the operated-on joint. Pain can be disabling to people or pets, even after a technically successful, uncomplicated procedure, and it’s the same for other animals.

Arthritis and cancer are two processes that can lead to severe, unremitting pain that worsens over time.



Dogs can reach bone-on-bone grinding in their joints relatively quickly, as they have only 1-1.5 mm of cartilage lining their joints, compared with 4-5 mm in humans.

Speaking of arthritis, we are making some changes to our pain protocols for that as well. For years, we have been adding **Gabapentin** to our treatment plan for arthritis in dogs once they got bad enough that supplements and NSAID drugs, such as carprofen, were no longer enough to keep the dog comfortable. That recommendation has changed. **Gabapentin** has not been proven to be effective for this particular use in dogs, though it works well in cats for arthritis and for anxiety, neurologic pain, and soft tissue pain in dogs and cats. **Gabapentin** works well for pain from tissue damage, too.

Instead of **Gabapentin**, we will be switching to **Amantadine** for our second-line arthritis drug. We have been using **Amantadine** as a third-tier drug for arthritis and a first-tier one for neurologic pain, but it is moving up the ranks for arthritis treatment. **Amantadine** is inexpensive and it only needs to be administered twice a day, whereas **Gabapentin** should be given every 8 hours in dogs for the best effect.



Gabapentin needs to be started 7–10 days prior to surgery to be an effective drug for immediate postoperative pain. **Amantadine** takes even longer to start working, 4–6 weeks, so it's not a good drug for acute pain conditions. Arthritis is chronic, though, so we have time to let it take effect. While we are waiting for it to do that, we can experiment with a **Ketamine** injection, CBD, or additional supplements. We can also use therapy lasers and **Assisi Loop** treatments.

NV-01 (for dogs) & NV-02 (for cats): These consist of a monthly injection antibodies that bind with a chemical messenger called nerve growth factor or NGF, which is important in osteoarthritis. They are administered in the form of a monthly injection.

The feline NV-02 drug, **Frunevetmab**, has been developed by Zoetis and is sold under the name **Solensia™**. A 3-month study showed that 77% of cat owners noticed signs of improvement in their cat's pain, improving their mobility, comfort, and well-being. It is safe for use in cats with stage 1 and 2 chronic kidney disease (CKD), which is reassuring. Most older cats with arthritis are also in some stage of CKD.



The dog version, **Betinvetmab**, also made by Zoetis, is called **Librela™**. **Librela** just became available in the fall of 2023.



Laser therapy is a drug-free and surgery-free way to reduce pain for pets and people. It can be used virtually anywhere there is pain, swelling, or inflammation.

Most people are still not aware of a newer device for pain called the **Assisi Loop™**. The **Assisi Loop** (seen in the picture to the right) is a device we use to deliver pulsed electromagnetic wave therapy to areas of the body where there is pain or inflammation. The device sets up a microcurrent, a trickle of electromagnetic energy that stimulates cells to help speed healing.

It has no side effects because it's not a pharmaceutical, and it's non-invasive. It is used for:

- Orthopedic injuries
- Degenerative disorders
- Neurological problems
- Post-surgical pain and swelling
- Inflammatory conditions
- Wound care



Another change we are making is to our recommendations for omega-3 fatty acids, commonly found in fish oil. We have been recommending a dose of 75 mg/kg of combined EPA and DHA. The new recommendation for dogs with significant arthritis is 150 mg/kg or more.

If you read the label on a pet fish oil supplement, the dosage recommended will be only around 35 mg/kg. So our usual dose is twice what it says on the label for pet supplements, and now we are prescribing four times the label dose. This can be very expensive for large dogs, and it requires administering many capsules a day and having your dog smell like a fish. However, fish oil is extremely safe since it's not a drug, so it's still a good option, especially for cats and small dogs.

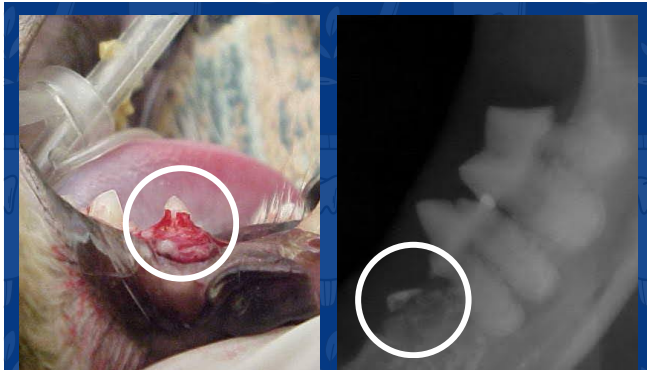
The last drug we'd like to mention is **Buprenorphine**. **Buprenorphine** is an opioid drug in the same family as **Morphine**, **Codeine**, **Hydromorphone**, and **Fentanyl**. The latest advance in this class of medications is a topical form of **Buprenorphine** for cats called **Zorbium™**. The contents of one little tube, applied to the skin on the back of the neck, begin working in about 45 minutes and it lasts for 72 hours. We've been using this for surgeries and dental extractions for a couple of years and we've been very happy with the results. Most cats are comfortable without being too drowsy.



Tooth Resorption

More than half of all cats over three years of age have at least one tooth affected by resorption, and we are finding it more and more frequently in dogs as well. A resorptive lesion is like a cavity. In cats it starts at the gumline as a small defect in the enamel of the tooth.

Over time, it erodes more and more of the tooth, eating into the dentin and eventually the pulp of the tooth. In dogs, these lesions usually start below the gumline where they are only able to be seen on x-rays of the teeth, as in the red circle in the picture below. As of now, the cause of tooth resorption isn't known.

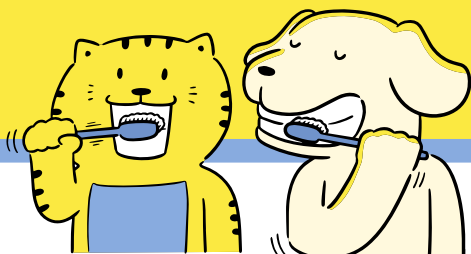
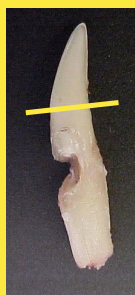


The white circle at left surrounds a tooth that is undergoing resorption and dissolving away. This is very common in cats. These are a type of cavity that forms when the immune system gets carried away attacking plaque bacteria and dissolves the tooth away. One the right is a similar tooth seen on an x-ray.

Extracting the damaged tooth is the only treatment. A long time ago, we would put fillings in these teeth, but the cavities just kept getting larger until the filling fell out. When we find one resorptive lesion, there is a 60% chance we will find more when we take dental radiographs. **It is imperative that these cavities be treated one way or the other, as they are very painful.**

The most important teeth for hunting are the canine teeth. They have very large roots, to enable a high bite force without loosening or breaking the teeth. Most tooth resorption in cats occurs in the small premolars, but they can occur in any tooth. In dogs, they most frequently occur in the large lower molars, which are important chewing teeth.

In this picture, the part of the canine tooth above the yellow line is the crown, the part you can see. Below the line is the huge tooth root, with a large hole in it. Many resorptive lesions cannot be seen except with an x-ray.



Update on New Canine Respiratory Disease

Most of you have probably heard there is a new, severe form of canine respiratory infection going around. However, at least here in Wisconsin, testing has only shown the routine winter infections we always see, caused by Bordetella (kennel cough), parainfluenza, Mycoplasma and Streptococcus.

This story was likely just a media kerfuffle, not something real. We will continue to be concerned and vigilant but so far, it doesn't look like this will turn into a serious problem for our dogs. Just keep up with vaccinations for kennel cough and remove your dog from social situations if he or she has signs of illness, or if you notice other sick dogs in the vicinity.



DOGS



If you wouldn't walk barefoot, your dog doesn't want to either!

DOES YOUR DOG HAVE CRACKED PAWS?
Try coconut oil!

Cold Weather Tips

All breeds handle temperatures differently, but these are the major temperatures for all:



60°F - No Risk



30°F - Light Risk



10° - Serious Risk

IS IT BELOW 32°F?
Keep cats indoors!

If cats go outside in winter, make sure there is shelter

Check that food and water aren't frozen

FOR CATS AND DOGS

Watch for frostbite

Dry off pets right away to avoid hypothermia

Use fish oil to keep your pet's skin hydrated



CATS

Chagas Disease

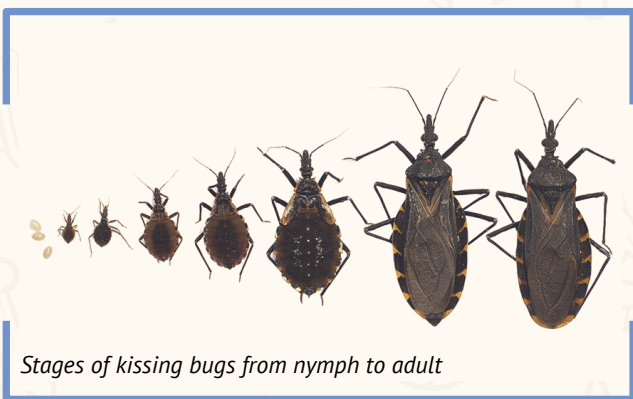
Right now, in some areas of the southern U.S., a significant percentage of dogs are infected with a potentially life-threatening disease, and many of their owners are likely not even aware of this. **If you travel to the south with your dog, you should have this disease on your radar screen.**

Canine Chagas disease, which is caused by the parasite *Trypanosoma cruzi* (or *T. cruzi*), is estimated to be present in 2% to 6% of dogs in the southern U.S. In more rural areas, or among working dogs housed in communal kennels or dogs who spend most of their day outside, the rate of infection is closer to 20% and could be as high as 30% in some parts of the South! “Currently, there might be three-quarters of a million, or a million dogs across the U.S., infected,” estimated Rick Tarleton, a regents professor and distinguished research professor at the University of Georgia’s Department of Cellular Biology.

The parasites that cause the disease, Tarleton said, are more commonly found in temperate climates in the Americas, though primarily in Latin America. In the U.S., the *T. cruzi* parasite is more often infecting canines in the southern part of the country, where its insect hosts are more likely to thrive.

Chagas disease doesn’t just infect dogs. The World Health Organization estimates that between 6 and 7 million people are infected with the *T. cruzi* parasite throughout the Americas (mostly in endemic areas of Latin American countries). Chronic cases can result in cardiac (heart) disorders later in life.

Dogs are of particular concern in the U.S. because of their lifestyle and potential interactions with so-called kissing bugs—triatomines or reduviid species—that spread *T. cruzi* infection. Triatomines become infected and then transmit Chagas disease, or *T. cruzi* infection, to humans or dogs.



Dogs tend to get much higher-level initial infections because they may eat the bugs. *T. cruzi* parasites are also often passed through the feces of these insect species, which they leave on their host after bites. Infection can occur if the feces are smeared into a break in the skin or rubbed into a cut or a bite. Luckily, infected dogs don’t pose a high risk of transmission to humans.

Symptoms of *T. cruzi* infection in dogs may be very subtle at first. These include lethargy, weight loss, or a lack of appetite. Damage to a dog’s heart results in a gradual progression of heart symptoms and sometimes results in sudden death. The ultimate result of Chagas disease in most dogs is chronic disease and eventual death.

T. cruzi infection in dogs isn’t something most veterinarians routinely test for. Heart symptoms can occur from a variety of types of heart disease, so it’s easy to assume symptoms are coming from more common forms of disease. Testing for *T. cruzi* infection must be done at a veterinary college or a university-operated diagnostic lab. This isn’t convenient, since most of our laboratory tests are done at large commercial veterinary labs or with in-house test kits. So far, Chagas disease has not been considered a large enough issue to direct any resources toward developing a common-use test. Consequently, a lot of cases are probably going undiagnosed or misdiagnosed. Reported cases are likely just the tip of the iceberg.

Treatment for positive cases of *T. cruzi* infection is a long course of antiparasitic medication. Such medications have been shown to be effective in treating dogs during the initial acute phase of infection, but not as much in chronic cases, at which point treatment usually shifts to managing the heart failure that may occur.

In the meantime, dog owners can try to prevent infection. It’s not an easy thing to prevent, except by keeping your dog inside. Most dogs that are outside on a leash are not at high risk of developing this disease, but the more time a dog spends outdoors, the more likely it is to become infected.

People who manage or own dogs in higher-risk areas or environments—like hunting dogs or working dogs who spend lots of time outdoors and live in large kennels—can also use insecticides to limit the dogs’ contact with the triatomine bugs that spread infection. No method appears to be 100% effective in preventing infection.



We Are Looking for a Home for a Wonderful, Young Cat

This is Lionel. He just turned 3 years old. He was surrendered because his owners couldn't afford to care for his urinary tract problem. He is now healthy (as long as he stays on the correct prescription food and daily antianxiety medication). Cats surrendered to us often end up going home with an employee, but everyone seems to be full up right now.

Lionel is affectionate and friendly. He loves being picked up and snuggled. We would like him to have a better life than he does at the clinic, where we have to lock him up all the time to keep him out of trouble while we are working.

Lionel has been a problem here with our other clinic cat, Tia, though he got along with our other foster cat who was here for a couple of months. He would probably do best in a single cat household, where he will be a snuggly lap cat and hog all the attention! Lionel is fine with dogs. He is neutered and up-to-date on vaccinations.

If you have a space in your house and heart for a kitty, come meet him!



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