



Cat Watch

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Expert information on medicine, behavior, and health in collaboration with a world leader in veterinary medicine

© THIS JUST IN

Coronavirus and Cats

CDC says spread is unlikely

With the new coronavirus making news as it spreads to humans in China and beyond, there are concerns about infections of our pets. So far, cats appear resistant to the human virus spreading across the world, and there is currently no major cause for concern.

“Coronaviruses are a large family of viruses that are common in many different species of animals, including camels, cattle, cats, and bats. Rarely, animal coronaviruses can infect people,” reports the Centers for Disease Control and Prevention (CDC).

Feline coronavirus infections are complicated. From a minor viral infection with mild diarrhea or a totally asymptomatic case, the disease may progress to the often-fatal feline infectious peritonitis (FIP).

Symptoms of FIP include: fever that is not responsive to antibiotics, lethargy, poor appetite, accumulation of fluid in

body cavities, and neurological signs. If your cat is showing any of these symptoms, you should schedule a visit with your veterinarian. ■



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U.S. Rabies Cases Are On the Rise

Most of the cases were wildlife, but pets need protection

A report from the Centers for Disease Control and Prevention showed an 11% increase in documented cases of animal rabies in the United States during 2018 when compared to 2017. The states with the most cases, in decreasing order, were Texas, Virginia, Pennsylvania, North Carolina, Colorado, and New York.

Over 90% of the animals were wildlife. Bats, raccoons, skunk, and foxes were the leaders in decreasing order. Among domestic animals, cats (the most frequent) and dogs accounted for over 80% of the cases. Rabid cattle once again well outnumbered rabid horses and donkeys. Three people died of rabies in 2018, up from two in 2017.

This study emphasizes the importance of having wildlife that bites someone tested for rabies infection, if possible (especially if the animal in question has been acting strangely), and of having susceptible pets vaccinated against rabies. It's the same with your pets. If your cat is bitten by a wild animal, he needs to be seen by a veterinarian.

Most of the cases of feline and canine rabies were associated with the raccoon variant of the rabies virus, suggesting that contact between pets and raccoons is a common cause of rabies transmission. Pets also can be exposed to ill or dying bats that get into your house or are found outside.

Rabies vaccines are, for the most part, quite safe and effective, so it's important that all cats—indoor and outdoor—are vaccinated against rabies. ■



You never know who's visiting your yard.

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Long-Term Care Comfort Strategies

A few modifications can make a world of difference to your cat

A few simple management changes and some one-on-one time can help alleviate pain and help maintain quality of life for your cat. Expert recommendations for ailing kitties include:

- 1 Comfortable beds**—Well-padded beds help ease pain and enable better rest since patients may sleep more soundly. Heated beds may help ease arthritis pain.
- 2 Pet stairs or ramps**—Ramps to favorite chairs or beds help cats continue to have access.
- 3 Food**—Make foods tasty using chicken broth, tuna juice, baby food, or a juicy cat food.
- 4 Grooming**—Gently brush and clean your cat with a soft cloth.
- 5 Attention**—Give her extra affection and perhaps special treats. ■



Access to a favorite chair can be comforting.

Septic Peritonitis

The right choice of antibiotics early on can be vital

Septic peritonitis, an inflammation of the abdominal lining caused by bacteria, isn't common, but it's serious. It can be caused by the rupture of an organ such as the intestines or uterus or by a penetrating wound. Spontaneous cases can occur, but are rare. Most cases of septic peritonitis require surgical intervention followed by intensive medical care.

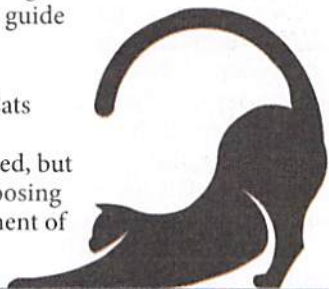
A recent study reported in the *Journal of Veterinary Emergency and Critical Care* looked retrospectively at cats with septic peritonitis at four referral hospitals to try to determine prognostic factors. While 135 cats were initially included in the study, only 83 made it through the final evaluation.

While survivors had surgery within approximately eight hours of presenting to a veterinarian and non-survivors did not go to surgery until 17 hours, time to surgery was not a significant predictive factor for survival.

Of the 83 cats that received antibiotics on admission, 50 received what turned out to be appropriate antibiotics based on the veterinarian's knowledgeable choice before any culture results (the gold standard for antibiotic choice) were available. This was a significant factor in survival. Cats who received the appropriate antibiotic(s) were 4.4 times more likely to survive. This is a case where experience pays off. A quick evaluation of the fluid from a septic abdomen can give a veterinarian an idea of what type of bacteria might be involved and help to guide antibiotic choice.

Looking at most clinical parameters like body temperature was not helpful, but blood glucose was. Cats with a high blood glucose had a worse prognosis.

This study leaves many questions still to be answered, but its results suggest that checking blood glucose and choosing the "right" antibiotic(s) are important in the management of feline septic peritonitis. ■



Testing Cat Food Palatability

Simple ways to see if your cat is happy with his food

We all want our cat's food to be nutritious and enticing. AFB International, a pet food research company that concentrates on evaluating how tasty foods are to pets and how to encourage pets to enjoy their diets, uses applied behavior research to determine which foods cats prefer. With a little effort, you can adapt this method to use on your own cat.

The standard method is to provide two bowls, each with a different diet, and then measure how much the cat eats from each bowl. You can also use just one bowl, but alternate which food a cat is fed and see how much the cat eats.

But AFB wanted to mimic palatability under conditions similar to what a cat might have at home. Sixteen cats were used for the feeding trials. The first was a simple "Food Focus—Nose in Bowl" trial. Cats were timed as to how engaged they were in eating, how easy it was to distract them and how distracted they were, as well as how much food was consumed.

The second test was "Work Effort—Puzzle Trials." In this case, cats had food puzzles to work through to get the food. As the cat worked through one puzzle, it became harder to earn the treats. A second puzzle that was easier but containing a different treat was also available. Cats tended to continue working the harder puzzle if it had the treat they preferred.

The third and final test was "Interaction – Hand Feeding Trials." For this trial, treats were offered by hand. The goal was to get the cat to get into the tester's lap. Ideally the cat would then stay for additional petting, suggesting that the food/treat was important for bonding.

If you're unsure if your cat truly enjoys his meals, these are simple ways for you to test at home and determine the palatability of cat foods. ■



CatWatch

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Neonatal Isoerythrolysis

How a queen's antibodies can kill kittens

Amazing as it may sound, kittens born with a different blood type from their mother are at risk of death. In this condition, called neonatal isoerythrolysis, the mother's antibodies attack the kittens' red blood cells, and the newborn kittens can die.

Blood Types Matter

Cats have three blood types (see sidebar) that are associated with naturally-occurring antibodies against "foreign" blood types. Type A cats have antibodies against Type B blood cells, and Type B cats have strong antibodies against Type A (these antibodies will also attack Type AB cells).

In neonatal isoerythrolysis, the antibodies from a queen's colostrum (first milk) attack the kitten's red blood cells, causing anemia and death. Marjory Brooks, DVM, DACVIM, Senior Research Associate in the Department of Population Medicine and Diagnostic Sciences at Cornell, says, "The Type A kittens produced from mating Type B queens to Type A males are at risk for neonatal isoerythrolysis."

First 24 Hours of Life

Colostrum is rich in nutrients and also contains antibodies. These antibodies are

Feline Blood Types

In cats, Type A is the most common blood type, found in as many as 99% of domestic cats in the United States. The Type A allele (form of a gene, for which there are two alleles, one from each parent) is also dominant, so a cat only needs one copy of that allele (i.e., from one of its parents) to be Type A.

Type B is the second-most common, most often found in purebred cats such as the British Shorthair, Devon Rex, or Cornish Rex. Prevalence of the Type B blood type in domestic shorthairs and longhairs varies by region, with the Northwest having the most Type B cats.

Type AB, which is not a combination of A/B blood types, is a unique allele and the most rare blood type.



Newborn kittens receiving colostrum from their mom.

important because newborn kittens have immature immune systems, so they need their mothers' antibodies to fight diseases that they may be exposed to until their own immune systems at work.

When kittens drink colostrum, the queen's antibodies are absorbed through the digestive tract into the kitten's bloodstream for the first 12 to 24 hours of life. After this time, their digestive tracts "close" and no longer allow antibodies from the queen to be absorbed. If a kitten is Type A or AB and drinks colostrum from a Type B queen before gut closure, that kitten will absorb anti-A antibodies from the mother into its bloodstream, where the antibodies can wreak havoc on the kitten's red blood cells.

Signs and Symptoms

Dr. Brooks describes the typical neonatal isoerythrolysis case as a "Fading kitten, with poor nursing, weak, pale or jaundiced mucous membranes, and discolored (brown) urine." If blood work is done, it will show anemia (a low red blood cell count).

These kittens usually appear healthy at birth but begin to show clinical signs within a few hours or up to several days old. Severity and time of onset may vary depending on how many antibodies are absorbed into the kitten's bloodstream.

Prevention and Treatment

Of course, prevention is the best approach. "Exact prevalence is unknown, and varies widely depending on the frequency of Type A and Type B cats

within a breed or geographic region," says Dr. Brooks. For certain breeds, including the British Shorthair, Devon Rex, Persian, Abyssinian, and Turkish, blood typing should be a routine part of pre-breeding health screening to select appropriate mates, and it isn't a bad idea for cats of any breed or mix.

"Prevention by blood typing before breeding is much better than treating after the fact," advises Dr. Brooks. Getting your cat blood typed is a simple process that many clinics can do in-house.

Unfortunately, most kittens in the United States do not have a responsible breeder watching out for them. If you take in a pregnant cat or find that your young cat is auditioning for "Teen Mom," you can still have her blood typed. If the queen is Type A, there are unlikely to be problems regardless of who the sire is, but if she is Type B there is risk.

If you know that the female cat is Type B and either know that the male is Type A or suspect that he is (based on the fact that Type A is more common), Dr. Brooks says, "The kittens should not ingest colostrum from the Type B queen for the first day or two."

Separate the kittens from their mother immediately after birth. Ideally the kittens should be put with a Type A foster mother at least temporarily to allow them to absorb antibodies (there are antibodies in regular milk, just not as many as in colostrum), but kitten milk replacer can also be used.

Extra care needs to be taken with kittens started out on kitten milk replacer, as they will not have any maternal immunity and are at higher risk for illness. Once the kittens have crossed the 24-hour mark for gut closure, they can be safely returned to the care of their Type B mom.

If kittens show signs of neonatal isoerythrolysis, immediate veterinary intervention is necessary. "Severe cases may require transfusion for anemia and other supportive care with milk replacer, fluids, oxygen," says Dr. Brooks. "Mortality rate is high." All kittens in the litter should be monitored closely. ■

Did You Know?

Big cats have the same blood types as our domestic cats. So lions, tigers, and cheetahs are also at risk for neonatal isoerythrolysis if Type A kittens are born to Type B mothers.

All About Incisions

How to promote healing after surgery

Surgery is not a one-day vets-only game. It includes a recovery period at home where healing is paramount to the success of the operation.

Normal Healing

A typical incision should look neat and clean—healthy pink skin with the edges lined up, held closed by a row of sutures (stitches). Incisions can also be closed with the sutures buried under the skin so that they are not visible. When this is done, the skin may be closed with tissue glue. Surgical staples are another option to close an incision.

If your cat's surgery involved multiple layers of tissue, such as going through muscle and the abdominal wall to perform a spay, each layer of tissue will have its own incision that is closed with sutures. This ensures that each layer is held in place to allow for quick healing. These inner layers will be closed with absorbable suture that will dissolve over time or, in some cases, with a suture type that is safe to leave inside your cat's body.

For the first few days, the skin around your cat's incision may look a little irritated due to local inflammation that is part of the normal healing process. Small amounts of clear or slightly blood-tinged discharge may be present, and bruising may appear up to several days after the surgery, particularly in pale-skinned cats.

Don't be concerned about the length of your cat's incision. Incisions heal from side to side across the gap rather than from end to end, so a two-inch and a four-inch incision will heal in the same amount of time as long as other factors remain equal. A long incision that has been closed well with the edges close together will heal more quickly than a small wound that is left open.

Cleaning the Incision

If you need to clean discharge from around your cat's incision, use a clean cloth or gauze slightly moistened with warm water and be very gentle. Avoid alcohol and hydrogen peroxide unless instructed by your veterinarian, as these products can cause discomfort and slow healing.



It all starts with a few "innocent" licks at the bandage, and in no time, your cat has damaged his incision.

While the complete healing process can take several months as the skin cells remodel and return to their normal state, the first two weeks are the most important time for incision care. For sutures closed with non-absorbable suture or with staples, you will usually be instructed to bring your cat in for suture removal 10 to 14 days after surgery. This gives the incision time to heal so that the sutures are no longer needed to hold the edges together.

What Can Go Wrong

"The most common complications would be an incision that opens up (a dehiscence) or an incision that becomes infected," says James Flanders, DVM, DACVS, Emeritus Associate Professor Section of Small Animal Surgery at Cornell. "Although a gap in an incision that occurs a few days after surgery may be due to a missed suture bite on the part of the surgeon, most incision issues in dogs and cats are due to the patients themselves. If there are sutures present in the skin or if there is any discomfort or itching from an incision, then dogs and cats are going to want to chew, lick, or scratch at the incision."

Incisions may become itchy due to local inflammation during the healing process, nerve regeneration in the skin, or from hair growing back in. If your cat tries to scratch or lick the itchy incision, he can rip out sutures or damage the healing skin. This allows the incision to open, slowing the healing process and promoting infection.

Too much activity can also damage an incision, especially if it is under a lot of tension (such as an incision over a joint or a site from which a large amount of skin has been removed). As the cat runs and jumps, he can put extra strain on the sutures and can cause them to break or to rip through the skin. Even if the incision remains intact, too much activity can cause extra fluid buildup under the skin resulting in swelling.

Dehiscence

Dehiscence is when an incision ruptures and opens. If an internal layer of sutures ruptures, you may notice a new bump under healthy normal skin or tenderness in that area. If the external incision dehisces, the incision will be open. Dehiscence can allow fat, muscle, and even internal organs to herniate out of their normal positions.

Depending on the severity of the dehiscence, it may be necessary to put the cat back under anesthesia to repair the incision. Small openings that only involve a few stitches or in an incision that has mostly healed may be able to either be closed with tissue glue or left to heal on their own. An internal dehiscence requires a veterinary examination, but may be left to resolve on its own unless it is complicated by tissue herniating through the opening.

In most cases, dehiscence occurs because a cat has either been allowed free access to the incision and damages it directly, or because the cat has been too active and damages it that way. Dehiscence can also occur if the tissues are compromised and unable to support the tension of the incision—this could happen after a large wound repair if the tissue becomes necrotic, or after the removal of a large mass. This is not common for routine surgeries, and your veterinary surgeon will warn you if there are concerns about the incision's integrity.

Infection

"A normally healing incision will rarely become infected unless a gap is created by the pet or by other trauma," says Dr. Flanders. Most surgeries are performed in a sterile environment from start to finish, limiting the introduction of pathogens into the surgical site. "Dirty" wounds, such as abrasions from being hit by a car or punctures from a cat bite, are a different story and are highly likely to be contaminated. Surgical procedures done in the mouth or to repair a wound

fall somewhere in the middle, and the veterinarian performing the surgery will determine whether or not the wound should be completely closed or if a drain should be placed to allow for drainage (this is common for cat-bite abscesses). If the surgeon has concerns about contamination either before the surgical repair or during the recovery period, antibiotics may be prescribed as a preventive measure.

So how can a standard sterile incision become infected? No matter how skilled the surgeon, an incision is still technically a wound that can allow bacteria to enter the body. If the cat or other pets in the household lick the incision, any bacteria on their tongues can be transferred to the incision and pose a risk for infection. Incisions on feet and legs can come in contact with litter in litterboxes. And of course, if the cat is running around like a maniac and manages to tear a suture, the now-open incision is an even wider entryway for opportunistic pathogens.

Signs of an infected incision include redness, swelling, discharge, and heat. Your cat may act uncomfortable and limp if the incision is on a leg or hunch his back if it is an abdominal incision.

If you suspect your cat's incision has become infected, he should be seen by a veterinarian promptly. Antibiotics will usually be started, and a culture and sensitivity may be obtained to guide the correct choice of antibiotics. If an abscess has formed, it may be necessary to flush the wound and place a drain.

Seromas

A seroma is a pocket of fluid (serum) that can form between tissue layers at a surgery site. These are usually neither painful nor infected, and usually occur because the cat has been too active. They tend to develop within a few days after surgery, but can show up later.

If you suspect your cat has a seroma, he should be seen by your veterinarian to determine the best course of action. In most cases, you will be instructed to get more serious about restricting your cat's activity and to alternate warm and cold compresses over the area to encourage the swelling to go down and the fluid to disperse. If the seroma is draining through the incision, antibiotics may be prescribed to prevent an infection.

Protective Measures

"Unfortunately, there are few places on their bodies that cats can't reach with

their mouths or their feet! This is why it is so common to send animals home with an Elizabethan collar," says Dr. Flanders. Your cat's veterinary team will likely go over some options to protect your cat's incision at the time of discharge, but you can also figure much of that out based on your cat's anatomy. Any incision on his legs or trunk can be accessed by his mouth. Incisions on your cat's head and neck may be out of reach of his mouth, but can be reached with multiple paws.

In addition to the standard plastic cone (Elizabethan collar), you can use a soft, inflatable "donut" collar, baby onesie, bandage, or a cat bodysuit to protect the incision, depending on its location. Some cats also tolerate wearing socks or booties to cover their claws and prevent scratching (nail caps will lessen the potential for trauma to the skin from scratching, but do not eliminate the risk of a nail getting stuck under a suture and ripping it out). Unless your cat is under direct supervision, he should be wearing protective gear to keep his incision safe.

Some incisions are more likely to develop complications than others. "The most common incisions are the most common ones to have complications!" says Dr. Flanders. "Spay and castration incision problems pop into my mind immediately."

Affected cats are usually young and playful, so they want to get back to their active lifestyles within days of having surgery. Overactive cats should be confined to a room without furniture that they can jump on and off of or to a large crate for at least the first week

What You Can Do

- ▶ Follow post-surgery discharge instructions closely.
- ▶ Restrict your cat's activity.
- ▶ Use a head cone or other protective device to prevent your cat from damaging the incision.
- ▶ Monitor your cat and his incision.
- ▶ Keep your cat indoors.
- ▶ Contact your veterinarian promptly if you have any questions/concerns.

after surgery. They should also be kept separate from other cats to prevent play and roughhousing.

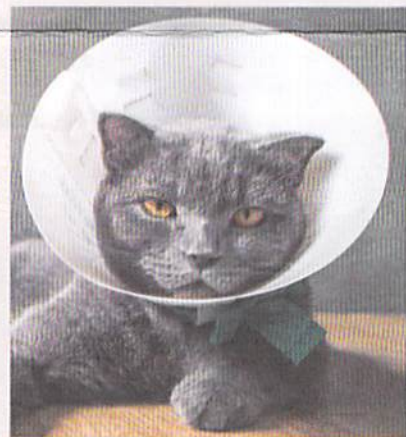
"Also, incisions over joints (like the knee or elbow especially) or areas of motion are an extra challenge to get to heal," says Dr. Flanders. "There is constant stress on the healing incision so a bandage to reduce motion is often needed along with some careful suturing." These cats must be kept confined to prevent them from putting excess strain on an already tight incision.

Your cat should also be kept indoors until the incision has healed and any sutures removed. If the incision is located on a leg or paw, paper-based litter such as Yesterday's News is a good option for the litterbox to limit the risk of litter getting stuck in the incision and causing an infection. ■

He Hates the Cone!

While it is true that no cat would choose to wear a cone, most of them adjust to it quickly. If your cat panics with the plastic cone on or keeps slipping it off, you can try something else to keep him away from those sutures: a soft cone, inflatable "donut" collar, onesie, bandage, or bodysuit, depending on the location of the incision. Ask the staff at your veterinary hospital for suggestions.

You can take the cone off for mealtimes if needed, but watch him the whole time. Even if he does not appear to be interested in his incision, leaving it unprotected is a risk. He may start to lick and chew at it when the hair starts to grow back and becomes itchy, or may catch a suture with a nail when scratching. If he damages the incision, it means a return trip to the vet, which your cat probably won't like either.



Allergy Control for Cat Owners

We power through it, but things could be getting better

If you're allergic to cats, having a kitty in your life can be a challenge. But there are ways to keep your symptoms under control, and one of them may involve what you feed your cat.

Researchers have looked at the feline allergens that people react to in cat dander. It is not the hair specifically, but rather dried saliva on the coat and the skin. The offending allergen is a glycoprotein called Fel d 1.

What is Fel d 1?

The glycoprotein (protein molecule with a carbohydrate attached to it) Fel d 1 is produced by cats in both their salivary glands and in their skin's sebaceous glands. When cats groom, they add this protein to their hair where it dries as dander. Grooming stimulates release from the sebaceous glands in the skin. All cats produce this protein, although some have lower levels than others. It has been reported that 95% of human allergic reactions to cats are due to this glycoprotein.

Some cat breeds naturally have a lower level of this glycoprotein in their skin and saliva, such as the hairless breeds like Sphynx and Rex. Siberians are long-haired cats, but many of them have lower levels of Fel d 1. Researchers have looked at ways to reduce the amount of



The allergens aren't really in the dander, as most people suspect, but in dried saliva on the cat's coat and skin.

Fel d 1 glycoprotein produced by cats, and selective breeding can help, but there is no truly non-allergenic cat breed.

Female cats, especially if spayed, tend to have less of this allergen, followed by neutered males. Intact males produce the highest levels. One study suggested that dark-colored cats tended to have more of the Fel d 1 allergen than light-colored cats, but these results were very preliminary.

Grooming and bathing can keep the amounts of allergen in the environment down. While many cats come to enjoy grooming, bathing is usually not high on the list of fun activities for cats or their

owners. Anecdotally, wiping your cat with a non-toxic unscented dryer sheet or other pet-safe wipe may help to pick up some of the dander as well.

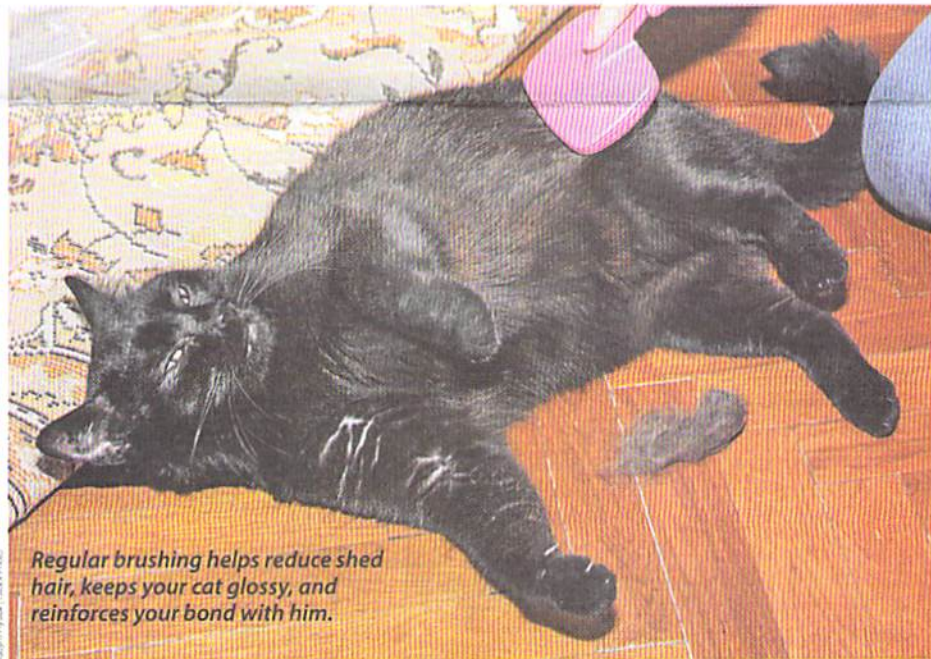
A recent study from Switzerland used a vaccine to stimulate an antibody response by cats against their Fel d 1 glycoprotein. There has been no important biological function found for Fel d 1, so this was considered a possible safe approach for cats and their humans.

This study showed that Fel d 1 production was reduced in the 50 cats included in the study. Three boosters were used, with the last one given at 32 weeks. How long the effect lasts is unknown at this time. No toxic effects were noted, but further studies are needed.

Maybe a Food Solution

Researchers from Purina took a different approach. Their premise was that they could come up with a food that might reduce the Fel d 1 that is produced by cats. The first step was to identify a food additive that binds to the Fel d 1 glycoprotein. They started with IgY, which is an avian immunoglobulin. Chickens produce IgY naturally if exposed to cats, and it is similar to mammalian IgG. In chickens, this immunoglobulin is concentrated in egg yolks—normally it would provide passive immunity for developing chicks.

The researchers' hypothesis was that Fel d 1-specific IgY could be built up in chicken eggs and the eggs could then be included in the cat's food. The IgY consumed by cats would then bind to the targeted antigen proteins and decrease



Regular brushing helps reduce shed hair, keeps your cat glossy, and reinforces your bond with him.

Immunotherapy

One form of immunotherapy involves being exposed to a small dose of an allergen repeatedly to desensitize your immune system. This might be an injection or an oral dose of the offending allergen. Some people eventually develop a complete resolution of their symptoms, but most people require ongoing immunotherapy.

Continual exposure to cats will usually decrease reactions in many people with feline allergies, although this effect is often "cat specific," meaning that their reaction to their own cat, but not to others, will decrease.

their activity.

In this study, 106 cats were fed a control diet for two weeks. They then ate a diet containing anti Fel d 1 IgY for 10 weeks. This diet was a kibble with a coating of the egg protein mentioned above. The egg protein binds to the Fel d 1 in the saliva of the cat eating this diet, reducing the amount of active allergen spread while grooming. Hair was collected twice weekly during the control period and weekly during the 10 test diet weeks. The hair was analyzed for Fel d 1 concentrations.

By the end of the 10 weeks, 97% of the cats in the study had a decrease in amounts of Fel d 1. The average decrease was 47%, and cats with the highest initial levels of this allergen showed the greatest decrease.

Scientists needed to know if this drop in Fel d 1 would help human allergy sufferers. They set up a series of environmental chambers in which people with feline allergies would spend up to three hours with a blanket that had been used by cats without the special diet or one from cats on the special diet. Symptom scores for the volunteers showed a decrease when they were exposed to the special diet cat blankets vs. the control diet and high-level blankets.

The Fel d 1-lowering diet is not currently available to consumers, but Purina hopes to have it out in the near future. Meanwhile, most importantly, research continues to be sure that cats will not have ill effects from a decrease in their normal amounts of Fel d 1. ■

What You Can Do

- ▶ Mop and vacuum frequently, with a HEPA filter on the vacuum. Clean upholstered furniture, floors, curtains, blinds, and drapes.
- ▶ Consider leather furniture, which can help keep dander accumulation down.
- ▶ Get rid of carpets where you can.
- ▶ Wash bedding, pillows, furniture covers, and cat beds at least weekly.
- ▶ Change furnace and air conditioner filters regularly; use HEPA filters.
- ▶ Regularly brush your cat to remove hair and dander.

Glyphosate and Your Cat

Cat exposure to Roundup ingredients

Glyphosate is a chemical herbicide found in the commercially available product Roundup and other similar products. Over the years, concerns have been raised about the safety of this chemical for people and animals, increasingly so as glyphosate-resistant versions of corn and soybeans have been developed.

Even an indoor cat could have potential exposure through diet. It is possible that exposure to spray residues from herbicides could cause chronic exposure, including through contamination of groundwater. Glyphosate does not accumulate in tissues, so your cat would only have the chemical if he is regularly getting a renewed dose. This may be happening through food ingredients that may have been sprayed at some point.

A recent study performed at Cornell University showed that 18 companion animal feeds from eight manufacturers had evidence of glyphosate in the product, and the concentrations detected appeared to correlate with crude fiber content. This suggests that the source of this chemical may be plant material used in the production of these foods. Cat food generally contains less plant material than dog food, since cats are obligate carnivores, but plant material is used in the production of most cat foods.

Another study published by the NY State Department of Health detected glyphosate in the urine of all 30 cats included in the study. The 30 canine subjects in this study had lower amounts

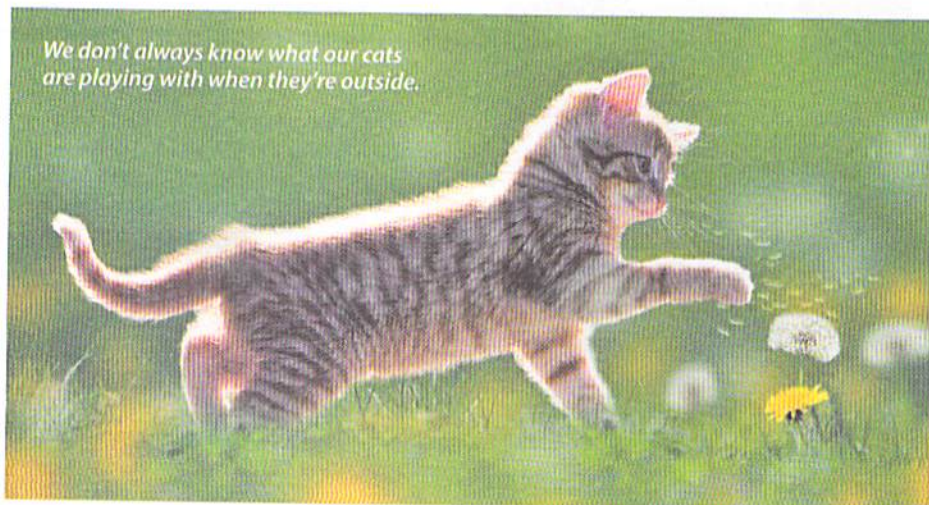
of glyphosate detected than that seen in the cats.

While the feline exposure to glyphosate suggested in both of these studies was lower than the established human safe exposure level, chronic exposure studies have not been done. Work from Europe suggests at least some potential for glyphosate toxicity to cats, with vomiting, loss of appetite, and lethargy the most common signs seen. Fatal respiratory effects were seen in a small number of cats exposed to glyphosate. A current thought is that it may not be the glyphosate itself that is toxic to cats, but rather one or more of the "inert ingredients" in these herbicide products.

The EPA's draft ecological risk assessment for glyphosate found: *potential risks to plants (aquatic and terrestrial); potential risks to birds from acute or short-term exposure and to mammals from chronic or long-term exposure; glyphosate is not expected to adversely impact aquatic animals but does have an effect on aquatic plants; and glyphosate is of low toxicity to honeybees.*

The Health Research Institute laboratory, a non-profit research group, is currently taking samples to evaluate levels of glyphosate in the urine of companion animals and to determine if there are adverse health effects from exposure to this chemical. A small fee is charged for sample submission. If you would like to participate, you can learn more at <https://hrilabs.org/animalstudy/>. ■

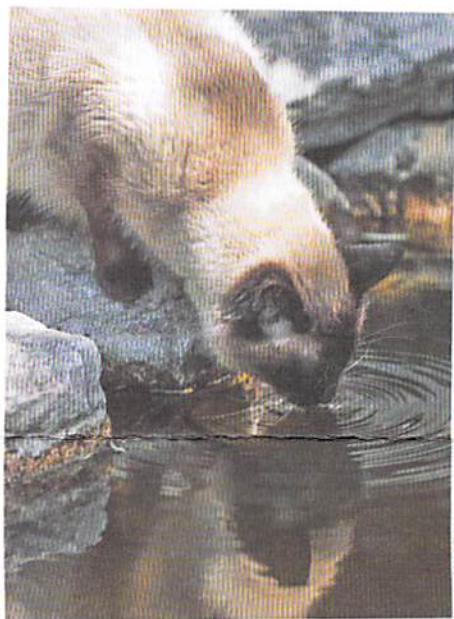
We don't always know what our cats are playing with when they're outside.



Sudden Loss of Vision

Causes vary: diabetes, hypertension, kidney disease

Q I have a 16-year-old indoor-outdoor male cat who I had recently noticed was urinating a lot and drinking a lot of water. I put him outside to do “his business,” and he was gone for 48 hours. When he finally came back, he was bumping into things when he walked around. I took him to the veterinarian and they gave him fluid injections and took some bloodwork. The results were all normal except for a slight indication of renal failure. He started to eat, but no vision improvement. Do you have any suggestions for dealing with his vision loss?



A classic sign of kidney disease is excessive thirst (a wet litterbox might be noticed first).

A Thanks for getting in touch, and I am very sorry to hear of your kitty's problems. First, it is very important that you continue to work with your veterinarian to manage the problems already identified and to follow his/her recommendations regarding further diagnostic tests and/or therapy to address any other health problems that may be identified.

With respect to the renal disease that has been diagnosed, a few thoughts that may be helpful. After ruling out any infections and/or the presence of uroliths (stones) and/or crystals in the urinary tract that may be causing problems, and after making sure that your cat has not had access to any toxins or medications that can negatively affect kidney function, it is quite possible that this disease will be

characterized as chronic kidney disease (CKD). We do not currently know the specific cause of CKD, but it is quite common in cats, particularly as they get older. If this is the case, dietary protein and phosphorus restriction, along with making sure that he always has access to fresh water and is appropriately supplemented with B vitamins and (more controversially) antioxidants will be important to assure best outcomes.

Other common causes of increased thirst and urination in cats are diabetes and hyperthyroidism. Given the fact that the bloodwork did not show an elevated blood glucose, diabetes is less

likely, and you can ask your veterinarian about the possibility of checking your cat's thyroid status if this has not already been done. There are specific therapies for both diabetes (usually requires insulin injections) and hyperthyroidism (radioiodine therapy and methimazole administration are most commonly used to treat this disease in cats).

Regarding the vision loss, please discuss the possibility of hypertension (high blood pressure) in your cat, as this can cause retinal detachment in cats. Hypertension may be caused by kidney disease, but it can also be caused by hyperthyroidism. In rare cases, it may occur as a lone problem, but regardless of cause, it is important to control because hypertension can negatively impact the eyes, heart, kidney, and brain of affected cats. Of course, it is important to address any other health problems that may contribute to hypertension, but in some cases anti-hypertensive medications may be recommended while this is being done.

If the vision loss is due to retinal detachment, I am sad to say that it is not likely that his vision will return. There are things you can do, though, to assure that the quality of life of a blind cat remains relatively high, and you can discuss these with your veterinarian if your kitty does turn out to be permanently blind. If there are any questions regarding the cause of the blindness, referral to a veterinary ophthalmologist would be a very reasonable thing to pursue.

I hope that this is helpful, and please send an update if you can. I'm sending my best wishes for a good outcome for your baby.

*All my best,
Elizabeth*

Elizabeth works with the Cornell Feline Health Center to provide answers on this page (vet.cornell.edu/fhc/). Write to her at catwatcheditor@cornell.edu or CatWatch 535 Connecticut Ave., Norwalk, CT 06854. We welcome digital photos of your cat to consider for use with your question.



© HAPPENING NOW...

Feral-Cat Feeding—A man in Phoenix, AZ, is facing jail time for feeding feral cats, which is against a 2018 city law, according to *ABC News*. The man said he has spent \$100,000 over the past 14 years feeding stray cats wherever he can find them and he will continue to do so.

World's Worst Cat—*The Mitchell (N.C.) News Journal* says their animal shelter needs a home for the “World's Worst Cat.” Described as “not for the faint of heart,” the cat's likes are said to include “staring into your soul until you may never be cheerful again,”

the song “Cat Scratch Fever,” and the movie “Pet Sematary.” The staff said she's into “jump scares” and “lurking in dark corners.” When someone picks her up, she growls or slaps at them. “We thought she was sick,” the post continued. “Turns out, she's just a jerk.” The shelter has received over 200 offers to adopt the cat.

Kitten Club—At the Feline Good Social Club in Long Beach, CA, you can mingle with cats to your heart's content (well, there is a cover charge). The club's goal is to help homeless cats and cat lovers who can't have a cat. ■



Coming Up ...

- ▶ Should You Worry About Panleukopenia?
- ▶ Combatting Constipation
- ▶ Help Feeding the Hyperthyroid Cat
- ▶ Cats in Tight Places