



CatWatch

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



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IN THE NEWS ...

Let Them Eat Cake! (Just Don't Invite Your Cat.)

Sweetness is detected by a specific receptor protein (what we commonly refer to as a 'taste bud') in the tongue. Cats are known to be insensitive to sweet tastes, but the specific reason was not known until recently.

Researchers analyzed the genes encoding the taste buds in twelve different carnivorous species, including cats ("Major taste loss in carnivorous mammals," in *Proceedings of the National Academy of Sciences*, US, 2012). They found that those species such as cats — whose diet is exclusively meat-based — had lost the gene encoding the taste bud for sweetness.

Other affected species included dolphins, sea lions, seals, otters and hyenas. An animal with a diet devoid of vegetables may have little need to detect sugars, explains Gary Beauchamp, director of the Monell Chemical Senses Center in Philadelphia, PA, and the lead author of the study. ♦

Feline Upper Respiratory Infections

These pernicious disorders can be traced to just two viruses. Here's what you need to know to protect your cat.

Your seven-year-old cat is a generally healthy animal. In fact, she's never had a really serious sick-day in her life. But your neighbor's cat always seems to be ill. Indeed, every few months she shows up on your doorstep wheezing, sneezing and coughing. Her eyes are red and watery, and she acts lethargic. These disturbing signs persist for a week or 10 days, but then she seems to be all right again — for a while.

It's quite likely that the cat next door is suffering from a deeply rooted upper respiratory infection, a highly contagious disease



affecting her nose, sinuses, pharynx and larynx. Why is it, you wonder, that your cat never experiences this problem, while the cat next door can't seem to shake it?

The answer, most probably, is that you've taken your cat to your veterinarian for periodic booster vaccination

to protect her against the infectious agents responsible for most feline upper respiratory infections. Your neighbor's cat, on the other hand, hasn't seen a vet in years.

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Is Your Cat Afraid of Strange Noises?

Personality, experience and genetic makeup will help create a fearless tiger, or a confirmed scaredy cat. Here's why.

Whenever cat owner Susan Lomond turns on her printer, her cat Sylvester dashes over to sit on it, lie on it and watch in fascination as the paper comes out. But when Susan's friend Diana turns on her printer, her cat, Petra, flees in terror.

Cats respond differently to noise depending on their personalities and experiences — and even their genetics. When cats get scared of noise, we often feel the need to soothe them. Actually, that may not be helpful.

How to Help Your Cat. Cats differ from dogs when it comes to being frightened by noise. Dogs are notoriously afraid of thunder and fireworks, and will often try to escape from the house in a panic. Cats are more likely to be scared of unexpected noises around the house, such as the vacuum cleaner, construction work

or a hair dryer. "But thunder and fireworks don't seem to bother cats," says Katherine A. Houpt, VMD, PhD, the emeritus James Law Professor of Animal Behavior at Cornell University's College of Veterinary Medicine. "I have never seen fireworks or thunder phobia in cats," she says.

Genetics play a strong role with cats. "Some cats are genetically afraid of almost everything. These are the ones we call 'scaredy cats,'" says Dr. Houpt. "They not only run from noises, but also from visitors." While frightened dogs may try to run away, cats are more likely to retreat and find a place within the house to hide, such as in a closet, under the bed or high up on a kitchen cabinet.

But not all noise is bad. Take Susan's printer, for example. If your cat associates a noise with

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CatWatch

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SHORT TAKES

Feedback from TNR Groups

Most "trap-neuter-return" feral cat groups provide vaccines and other veterinary services prior to releasing them, according to a survey of 120 such groups conducted by Alley Cat Rescue, a feral cat TNR advocacy group.

Ninety-six percent of the groups provide rabies vaccinations, while 64 percent provide distemper vaccinations. Twelve percent provide feline leukemia shots, 62 percent deworm feral cats and 64 percent provide flea treatment.

The majority (96 percent) of feral cat groups neuter stray cats before placing them in homes, and most groups also provide spay and neuter services to owned cats to prevent future colonies from forming, according to Alley Cat Rescue.

Feral cat groups' efforts to educate the public about trap-neuter-release programs have been productive, with 65 percent of respondents calling their education efforts "somewhat" effective, and 18 percent finding their efforts extremely successful.

Most animal control agencies do not offer trap-neuter-release programs (61 percent), and one in three agencies have trapped and killed whole colonies, according to respondents.

Respondents had some luck working with the animal control agencies, with a fairly even split between "difficult" and "somewhat successful" responses and 21 percent of respondents reporting a "positive" experience.

A New Oral NSAID for Cats

Novartis Animal Health has recently unveiled its Onsior (robenacoxib) tablets — a three-day non-steroidal anti-inflammatory drug for postoperative cats. The drug is indicated for the control of postoperative pain and inflammation associated with orthopedic surgery, ovariohysterectomy and castration. It is the first multidose oral NSAID to be approved for cats, according to Novartis.

The drug's short blood half-life causes the active ingredient to be quickly eliminated from the blood while persisting longer at the site of inflamed tissue, allowing for once-a-day administration for up to three days, the company reported.

Side effects observed during a clinical field trial and six-month safety study included surgical site bleeding, infected surgery

sites, lethargy, vomiting and inappetence.

The drug is indicated for cats weighing 5.5 pounds or heavier, and at least six months old, for a maximum of three days. The drug should not be used in cats that have a hypersensitivity to robenacoxib or known intolerance to NSAIDs. The drug should not be administered in conjunction with any other oral or injectable NSAID or corticosteroid, according to Novartis.

Help for the Burmese Breed

Burmese cats can inherit a muscle weakness — called Burmese hypokalaemia — which is caused by low levels of blood potassium. However, with the identification of the genetic mutation responsible for the disease, a genetic test has been developed.

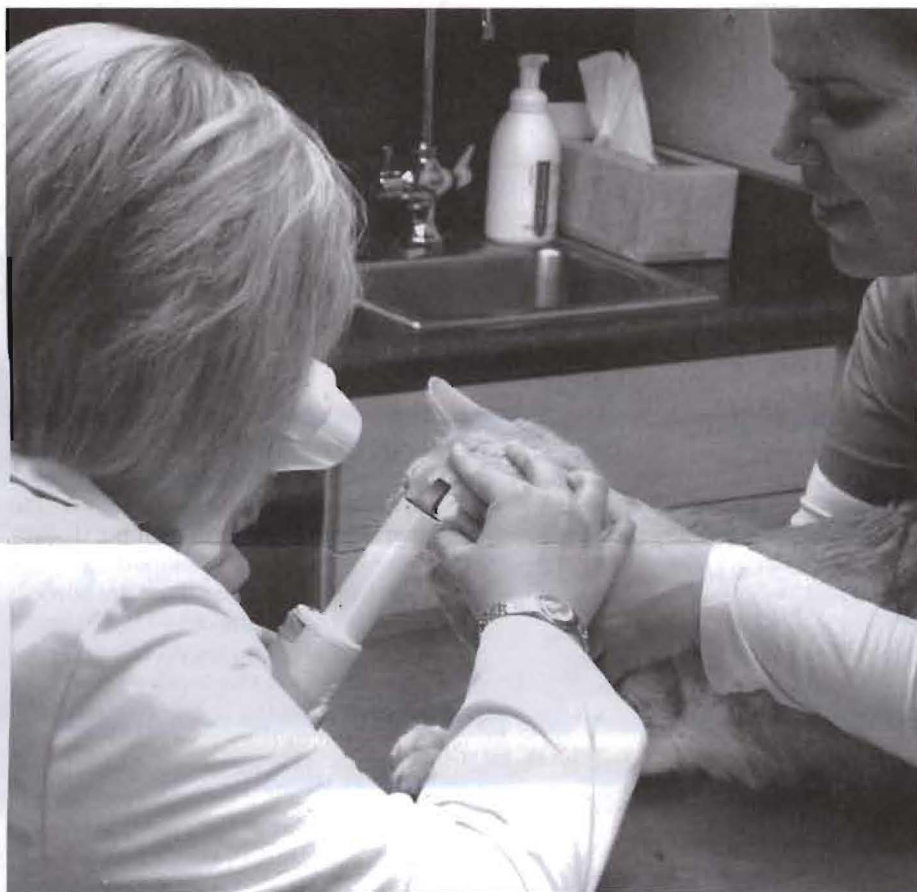
The researchers hope that, by genetic testing and selective breeding, the disease can eventually be eradicated in the Burmese breed.

This genetic disease — also known as Familial Episodic Hypokalaemic Polymyopathy — is characterized by skeletal muscle weakness, which is episodic in nature and can either impact the animal's entire body or may be localized to the neck or limb muscles. As a result, affected cats usually have problems walking and holding their head correctly.

The new genetic test for Burmese hypokalaemia allows cat breeders, owners and veterinarians to test for this disease. Burmese hypokalaemia is an autosomal recessive disease, which means that carrier cats do not show signs of disease. However, mating two cats carrying the mutation has a 25 percent chance of producing kittens that will be affected.

According to Dr. Chris Helps, Head of the Molecular Diagnostic Unit at Langford Veterinary Services (LVS): "It is possible to continue to use carrier cats in breeding programmes to retain important breeding lines and to avoid reducing the size of the Burmese gene pool. As long as carrier cats are mated to normal cats, no affected kittens will be produced. This mating is likely to produce kittens that are carriers, which can be identified by genetic testing and, if necessary, future matings arranged with normal cats."

Clinical signs in cats affected by the disease can usually be managed by adding potassium supplements to their diet. In some affected cats, clinical signs disappear when the cats reach the ages of one or two. ❖



Understand the Risk of Glaucoma

Treatment can be difficult and expensive, so it's important to get prompt veterinary care for your cat.

The eye is an amazing, delicate organ. Cells within the eye normally produce a clear fluid (aqueous humor) that serves to nourish and maintain the shape of the eye. When the balance between the production and the drainage of fluid is upset, glaucoma can result. Decreased drainage of fluid causes increased pressure (and pain) within the eye, often resulting in damage to the optic nerve and, consequently, loss of vision.

While glaucoma is much less common in cats than in dogs, it still poses the same high risk of blindness if left untreated. In fact, even if diagnosed early on, treatment is not always successful.

The Two Types. There are two main categories of glaucoma: primary and secondary. According to Thomas Kern, DVM, an associate professor of ophthalmology at Cornell University's College of Veterinary Medicine who is board-certified by the American College of Veterinary Ophthalmologists, primary (inherited) glaucoma is uncommon in cats; it involves a structural problem with the filtration (drainage) angle. Secondary glaucoma develops because of another disorder already present in the eye; that is, there is a problem within the eye which causes a disruption in the necessary drainage of fluid. The most common causes of secondary glaucoma are inflammation, lens luxation, tumors and trauma. Inflammation inside the eye becomes a problem because protein and debris begin circulating in the aqueous humor and can plug the filtration angle. Many things can cause the eye to become inflamed — some of which are never identified.

However, feline leukemia virus (FeLV), feline immunodeficiency virus (FIV), feline infectious peritonitis (FIP) and toxoplasmosis all affect the immune system's ability to ward off infection, thereby making it much easier for a cat to develop uveitis (inflammation of the eye). Lens luxations (dislocations) generally occur in tandem with chronic uveitis. Chronic inflammation can cause the fibers that hold the lens in place to break down; if the lens falls into the front chamber of the eye, it can disrupt the drainage of fluid from the eye. Tumors within the eye can block the filtration angle. And injury to the eye can cause blood to pool inside, plugging the filtration angle.

However, feline leukemia virus

SCHEDULE REGULAR VETERINARY EXAMS.

The best defense against glaucoma is preventative care and early detection.

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How It's Treated. Treatment of glaucoma can be difficult and expensive and may be necessary throughout the cat's remaining lifetime. However, vision can sometimes be saved if the treatment begins soon enough. When treating glaucoma, it is important to eliminate any underlying disorders that may be causing a problem within the eye.

Secondly, pressure must be reduced to avoid further damage to the optic nerve. Treatment can be medical or surgical. Medical treatment is often used in cases where inflammation is the culprit. Medications that reduce inflammation and decrease the production of fluid are typically administered. Surgical treatment may be necessary if the cat is unresponsive to medical treatment or if the glaucoma is caused by lens luxation, a tumor or trauma. In the case of a dislocated lens, the lens may be removed manually. Goniovalve insertion — surgical implantation of a tube to allow proper fluid drainage — may also be an option in order to relieve pressure within the eye.

Unfortunately, once a tumor is present or vision has already been lost, it is often necessary to remove the eye, a procedure called enucleation. However, cats are extremely adaptable and can continue to lead happy, satisfying lives even without perfect vision.

What You Should Look For. Many signs of glaucoma may be either barely

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SEEK PROMPT VETERINARY CARE. This is not a time to practice any at-home techniques. Your cat needs to be seen by an expert.

to show for the unpleasant experience, typically in the pelvis, hind legs, or tail. The second most frequently seen feline fractures are those sustained by cats who fall to earth from a significant height — from a lofty tree branch, say, or from the windowsill of a house or apartment building.

A cat can also suffer a fracture in a fight with another animal (a coyote or hostile dog, for example) or by getting tangled up in gardening or farming equipment or — if it is lucky enough to survive — by being shot at by a trigger-happy hunter.

The threat of bone fracture, however, is by no means confined to those animals that spend most of their lives outdoors. “A cat can break a bone indoors by leaping to the floor from a high shelf or the top of a refrigerator,” notes Dr. Krotscheck. “A bone can even snap if it gets caught between couch cushions or between a mattress and a bed frame. In fact, that’s quite common.”

Broken Bones: All Cats Are at Risk

Fortunately, most feline fractures can be repaired by a veterinary surgeon. Here’s what you should know.

Despite their typically strong, agile, and resilient bodies, cats are subject to a wide variety of musculoskeletal disorders — diseases and injuries affecting the complex structure of bones, muscles, tendons, and ligaments that give shape to their bodies and enable them to move about. Fortunately, most of these disorders — such as congenital malformations, inflammatory diseases and tumorous growths — are relatively rare in cats.

Less rare by comparison are bone fractures that result from traumatic events, such as when a cat is hit by a car, for example, or falls from a tree. A fracture can occur when any physical force applies sudden and excessive pressure on a bone until it snaps at its weakest point.

Although fractures occur less fre-

quently in felines than they do in dogs, cats with broken bones are treated once or twice each month at the Cornell University Hospital for Animals (CUHA), according to Ursula Krotscheck, DVM, an assistant professor of clinical sciences at the University’s College of Veterinary Medicine.

All fractures are treated with great care, regardless of their severity, since any broken bone — if not treated immediately and appropriately — can conceivably result in a permanent malfunction or the loss of a limb.

Traumatic Injuries. Getting hit by a car or truck is by far the greatest single cause of feline bone fractures, says Dr. Krotscheck. Cats fortunate to have survived such a traumatic event will usually have one or more broken bones

Vulnerable Bones. Feline fractures occur most frequently in the long bones of the front or hind limbs, the femur, tibia, humerus, radius, or ulna. Broken pelvises and jaws may occur, though less frequently. And spinal fractures can also happen, but they are extremely rare. Rib fractures are comparatively rare in cats — much rarer than in dogs, Dr. Krotscheck points out — because the feline rib cage is “very pliable.”

As is true of dogs and humans, a cat is prone to two broadly defined types of bone fracture — closed and open. Within each category, breaks of varying severity may occur.

Closed fractures are those in which a broken bone has not penetrated the skin and, therefore, has no communication with the outside environment. The least serious of these is a hairline fracture, in which there is a crack in the bone, but the bone doesn’t change shape or position.

Open fractures are those in which a broken bone has penetrated the skin surface, resulting in damage to surrounding muscle and other soft tissues.

These are obviously far more dangerous than closed fractures because of their complexity and the risk of infection stemming from the exposure of bone and soft tissues to the environment. There are three categories — or “grades” — of open-fracture severity:

- ◆ **Grade One open fracture.** It's the most common and least severe. Essentially, a piece of bone breaks through the skin and immediately retreats back into the body, leaving a small wound in the skin surface.

- ◆ **Grade Two open fracture.** There is significant trauma to the skin and underlying tissue, and a portion of the broken bone remains exposed to the environment.

- ◆ **Grade Three open fracture.** The most serious, it involves severe trauma to the bone, skin, and underlying tissue and may include significant loss of bone tissue.

Fractures may also be characterized according to whether a bone has broken cleanly in one or more places (a simple fracture) or has shattered into many pieces (called a comminuted fracture).

Damage Control. Most broken bones can be successfully repaired by an expert veterinary surgeon; the choice of methods depends primarily on which bone is broken and which type of fracture has occurred. A hairline fracture, for instance, may simply require only the use of bandages or splints, since the bone has not been displaced. The majority of fractures, however, will require surgery entailing the repositioning of the bone parts and their stabilization with a variety of plates, rods, wires and other orthopedic devices.

A fracture is diagnosed by means of a thorough physical examination and X-rays of the injured area. Specific treatment will be based on the location of the break and the type of fracture revealed by the X-ray images. For example, says Dr. Krotscheck: “If we see a minimally displaced fracture or just a hairline fracture in the bone, we might use external coaptation — a simple splint or cast that stabilizes the limb until the bone heals. But that's not usually a good option if there's a break with significant bone displacement. And external coaptation is generally not used for fractures of the humerus or femur.”

WHAT YOU SHOULD DO IMMEDIATELY: SEEK VETERINARY ATTENTION

Cat owners should consider any fracture as a medical emergency that requires immediate veterinary attention, says Dr. Ursula Krotscheck. “Don't attempt any first aid,” she advises. “Don't try to bandage the wounded area or try to strap the animal to a board. And don't try to ice the wound — stressed cats don't like to be touched — and you're apt to be bitten or scratched. Simply put the animal in its carrier, call the veterinarian to say that you're on your way, and get to the clinic as soon as possible.”

At the clinic, a fracture — or at least the area of injury — is likely to be clearly apparent. Nevertheless, an experienced veterinarian will postpone repairing the injury pending a period of observation and a series of laboratory tests for a minimum of 12 hours and possibly two or three days, during which time the cat will be given pain-killing medications. “Before any type of surgery is done,” says Dr. Krotscheck, “we want to make sure that the animal hasn't experienced any other kind of trauma — to its lungs or heart, for example — that would put it at risk under anesthesia.”



The observation period will also serve to give the animal some sorely needed rest, she points out. A cat that has just fallen from a tree or been struck by a car needs time for its body to recover from the trauma.

In the case of a broken femur, a surgeon would probably opt to use some type of internal fixation, such as plating. In this procedure, a stainless steel plate is screwed onto the injured bone, keeping it aligned so that it can heal straight. The length of time necessary for a fracture to

heal when a plate is involved will depend largely on the cat's age.

As in humans, young cats tend to heal more quickly than significantly older cats, Dr. Krotscheck points out, so healing can take anywhere from eight weeks to several months. ♦

GLAUCOMA... (continued from page 3)

perceptible or easily confused with other disorders. If any of the following symptoms are observed, it is important to seek veterinary care as soon as possible:

- ◆ a bloodshot eye;
- ◆ a very squinty, apparently painful eye
- ◆ excessive tearing;
- ◆ a dilated pupil that is unresponsive to changes in light;
- ◆ a cloudy cornea;
- ◆ an enlarged appearance of the eye

- ◆ vision loss;
- ◆ lethargy, irritability and a decrease in appetite, which may be responses to the discomfort or pain of increased pressure within the eye.

The best defense against glaucoma and vision loss is preventative care and early detection. According to Dr. Kern, it may be beneficial, especially for geriatric cats, to have regular ophthalmic examinations. As with any health issue, it pays to be finely attuned to your cat's behavior and appearance. ♦

UPPER RESPIRATORY INFECTIONS

(continued from cover)

Potential Problems. Although the primary clinical signs of upper respiratory infection are troublesome and often debilitating, they are generally transitory and self-limiting — they just come and go without causing enduring harm. However, they can sometimes progress to secondary complications with long-lasting consequences.

These include pneumonia, conjunctivitis or corneal ulcers (vision-impairing eye conditions), and a host of other virus- and bacteria-borne illnesses resulting from the entry of infectious microorganisms into an afflicted cat's system via the open sores that often break out inside its mouth and on its nose, lips and tongue. In addition, some cats may refuse to eat because of the painful ulcerations in their mouths and may consequently become systemically ill as the result of a nutritional deficiency.

Major Offenders. "About four out of five upper respiratory infections are caused by one of two viruses," says Fred Scott, DVM, PhD, former professor emeritus of virology at Cornell University's College of Veterinary Medicine and the founding director of Cornell's Feline Health Center. An estimated 40 percent of cases are caused by feline herpesvirus (FHV), which is also known as feline rhinotracheitis virus (FRV), and about 40 percent are caused by feline calicivirus (FCV). "The remainder, notes Dr. Scott, 'are caused by a bacterial agent called *Chlamydomydia felis* and other microorganisms.'"

To complicate matters, infection with feline immunodeficiency virus (FIV) and

feline leukemia virus (FeLV) — although not directly associated with upper respiratory disease — may compromise an animal's immune system and thus make it more susceptible to respiratory infection.

These viruses are usually passed from cat to cat when they lick or groom one another, notes Dr. Scott, or through other direct physical contact. These viruses can also be airborne. "During the acute stage of infection," he says, "there's a lot of sneezing going on. An infected cat will blow the virus out into the environment, and cats a few feet away will inhale it. A virus can also be transmitted from an infected queen to her kittens during pregnancy or through grooming them after they are born."

Disease Progression. Once present in a cat's system, no medication can make the viruses simply disappear. Herpesvirus will remain in an infected cat's system forever, resurfacing periodically to cause recurring episodes of fever, ocular inflammation, nasal discharge, sneezing and other signs of rhinotracheitis. As for calicivirus, it will typically vanish from an affected animal's system within a year or so after the initial infection, but in some cases not until after it has done significant damage to the cat's upper respiratory system and has opened the pathways for secondary infection.

Herpesvirus, explains Dr. Scott, initially announces its presence by causing acute sneezing attacks in its host. But its impact is felt beyond the respiratory system components. "The virus starts to replicate and destroy cells in the animal's nose," he explains. "This will typically be followed by a discharge of fluid from the cat's eyes. It may be noticeable initially in just one eye, but both eyes will soon be involved. And the discharge will be watery at first, but it may become progressively purulent. This is often followed by conjunctivitis — inflammation of the mucous membrane that lines the inner surface of the eyelid. And in a small percentage of cats, you may see signs of corneal ulceration." The length of time it takes for the disease to run its course and for the clinical signs to subside ranges, he notes, "anywhere from a day to a week or so."

Once present in the feline system,

however, herpesvirus remains forever and clinical signs continue to flare up repeatedly, with recurrences brought on by such things as stress, bad weather, the outbreak of some other illness or medications that suppress the immune system."

"It's a very common infection in mature cats that have not been vaccinated against it," says Dr. Scott, "and almost all of these affected animals will recover. But it can kill very young kittens or those that have been infected in the uterus, because the infection can easily develop into a serious systemic disease."

The signs and progression of a calicivirus infection are "entirely different," Dr. Scott points out. "There is less sneezing and not as much eye involvement. But you may see ulcers on the affected cat's tongue, lips and sometimes around its claws. And some strains of this virus can cause fatal pneumonia."

The signs progress for about a week, he says, noting that "the calicivirus disease comes on a little faster than the illness caused by herpesvirus infection, and the disease course is a little shorter. Most cats will survive the initial infection, but the real danger is pneumonia, which can come on very fast and be fatal."

As with herpesvirus, he says, kittens are significantly more susceptible to serious systemic disease — especially pneumonia — resulting from a calicivirus infection. "Kittens are protected for a few weeks by the natural immunity they've gotten from their mothers," says Dr. Scott, "but they become susceptible after that immunity wears off."

Effective Vaccines. For the past several decades, vaccines have been available that, to a great extent, protect cats against herpesvirus and calicivirus, and these vaccines have proven successful over the years in significantly reducing the occurrence of upper respiratory disease.

Dr. Scott urges all cat owners to make sure that their cats are vaccinated according to the schedules recommended by veterinarians. Unfortunately, no vaccine is 100-percent effective. Although all existing vaccines are apt to reduce the severity of viral infections, none can be guaranteed to immunize all cats against the organisms that cause upper respiratory disease. Also, new strains of feline calicivirus are continually evolving; therefore, the efficacy of current vaccines may diminish as time goes by. ♦



VACCINATION PROTOCOLS. You should speak with your veterinarian about what vaccines are appropriate for your cat.

NOISE ANXIETY ... (continued from cover)

something pleasant, such as finding her favorite person at the printer, that noise will attract her. Likely the most common noise that is music to a cat's ears is the sound of the electric can opener, which means tasty food may soon appear.

How You Should React. When your cat gets scared of a noise, your first instinct may be to hold and soothe her. "This is controversial among behaviorists," explains Dr. Houpt. "I recommend not comforting your cat, because she may interpret this as a reason to really be afraid of the noise." By never punish your cat for her fear, as this will only increase her anxiety.

The best thing to do is let your cat hide in a place of her choosing. Let her stay there as long as she needs to. This is natural and what cats do in the wild when they're scared. If your cat hides for a long time, "try luring him out with a treat or his favorite toy," says Dr. Houpt. "But never drag a cat out of his hiding place — unless he's in some danger."

Another way to help your cat cope with scary noises is through the behavioral technique of desensitization. First, you need to recreate the noise — perhaps the vacuum cleaner — by taping it onto a CD. Start by playing the CD at a very low volume. Your cat will hear it, but he should not show signs of fear at this level. You should increase the volume very gradually until your cat is used to hearing the sound at a normal level. If he shows fear at any point, decrease the volume and proceed a little more slowly.

This method should work if you combine it with a favorite reward for not hiding. While you play the CD, engage your cat in some of his favorite games. Of course, shower your kitty with affection and some treats when he accomplishes this feat. Remember, this technique will require both time and patience.

Soothing Medicine. Some cats become overly agitated by noise. In this situation, your vet may suggest a product called Feliway. Available at your veterinarian's office or from a pet supply shop, this product is synthesized from a naturally occurring feline pheromone that appears to calm cats down. Use it as a spray or diffuser when there's a lot of noise going on in your home, such as construction. "Your cat may just come out to eat and use the litter box, but that's okay," says Dr. Houpt. ♦

THE AT-HOME HEALTH EXAM THAT YOU CAN GIVE YOUR CAT

The conscientious pet owner is essentially the veterinarian's eyes and hands away from the office. For this reason, it is important to be familiar with the steps involved in doing an at-home mini-physical examination on your cat. This should supplement your cat's twice yearly trips to the veterinarian.

Easier Than You Think. Performing an at-home physical examination is much easier than you might think; in fact, the examination should be a normal extension of the regular attention you give your cat. Here are some easy-to-follow ground rules:

- ♦ **Don't restrain** your cat when you do the examination. She should be comfortably nestled in your lap or, if she's not a lap cat, you can place her on a raised surface.
- ♦ **No fighting.** If she starts to struggle, take a break.
- ♦ **Never attempt** an examination after a play session. Do it when your cat is quiet and relaxed.
- ♦ **It's not** necessary to do the whole examination at once. You can do a little at a time over the course of a week.

Getting Started. If you have a weekly grooming ritual, that's a great time to look at the condition of your feline friend's skin and coat. First, look for any hair loss (which could indicate fleas or another skin disorder), patchy spots, lumps and bumps. Be sure to observe your cat's belly, as mammary cancer is a concern with cats, especially unspayed females. Check for swellings and asymmetrical and/or painful areas.

Next, look at your cat's rear end. Lift her tail and check for tapeworm infection, which will appear as rice-like segments stuck in the hair. Also, if your cat has long hair, make sure she doesn't have feces matted in the hair on her bottom.

Inspect her toes to make sure she doesn't have any ingrown toenails. This is a special concern with older cats, and may be an issue with polydactyl cats (cats with extra toes).

Look in her ears: They should be light pink (unless they're pigmented) and there should not be any odor or discharge. To look down into the ear, you can gently pull the top of the ear upward.

Next, check your cat's eyes to ensure that the pupils are the same size, that there is no tearing and that the third eyelid (nictitating membrane) isn't drawn over the eye. Also, your cat shouldn't be squinting. If she tolerates it, you can pull out the lower eyelid, which should be pink, not red or white.

Finally, it's time to look in her mouth. Gums (like other tissue) should be a healthy pink, and teeth should not be too tartar encrusted. Familiarize yourself with your cat's normal breath: Although it's never exactly lovely to sniff, it shouldn't be fetid. Make sure she isn't drooling.

In a short amount of time, you will have covered all the basics. It's important to watch for slight changes in behavior, as well as any physiological problems. Subtle signs of illness include lethargy, change in appetite and water consumption (eating or drinking more or less than usual), changes in grooming behavior (oily coat or overgrooming are red flags), weight loss and any changes in litter box behavior. If you have any concerns, a visit to the veterinarian is in order. ♦



Please send your behavior and health questions to: "Ask Elizabeth" CatWatch, Box 13, Cornell University College of Veterinary Medicine, Ithaca, New York 14853-6401

We regret that we cannot respond to individual inquiries about feline health matters.

Elizabeth is thankful for the assistance of **Ryane Englar, DVM**, a veterinary consultant at the Cornell Feline Health Center, in answering your questions.



Q Dear Elizabeth: I was sitting on the couch with my cat watching the news last night and, as usual, her purring nearly drowned out the reporter! I stopped thinking about the news and started wondering about purring. I remember reading something about people having their blood pressure lowered by a purring cat. What can you tell me about your motor?

A I have been purring nearly my whole life so I should be an expert! However, like many feline characteristics, purring is mysterious — even to me! Let me share what my friends at the Cornell Feline Health Center have to say about purring.

At its core, purring is a means of communication — but cats purr in a variety of situations: when they are comfortable and content, of course, but also when they are anxious, injured or ill. What, exactly, a cat is communicating in these various situations is open to interpretation.

The most straightforward purring is done by baby kittens. Starting at about two days of age, kittens purr in the presence of their mother, and in response to nursing. This early purring is likely to be an 'I'm OK' signal to the queen, and along with kneading movement of the front paws on the mammary gland area, may serve as a stimulus for milk letdown.

As kittens mature, purring continues in the presence of humans; this is one piece of evidence used by those behaviorists who suggest that cats think of their human friends as mother figures.

You may know a cat who does more than purr in the presence of its human 'mother' — some also knead their humans during times of contented interaction. I've even known cats who drool as their humans pet them, as if they are remembering nursing!

This idea of cats purring in the presence of their stand-in moms would explain why cats purr when contented and happy — just as they did when they were kittens with their real, furry moms. More difficult to explain is the observation made by many veterinarians and cat owners that purring also occurs when a cat is anxious or fearful. Hmm ... behaviorists have some ideas, but they don't really understand the purpose of purring in these situations. One idea is that the 'anxious cat purr' may be similar to a human's nervous smile. Another idea is that cat's purr to calm themselves. As you wrote in your question, it is known that humans show lowered blood pressure and a sense of well-being when in contact with a purring cat; perhaps the cat benefits, too!

Finally there is the question of HOW cats purr. Another mystery, I'm afraid, but there is good evidence that purring emanates from the larynx, or voice box. Electromyographic studies have revealed that the vocal folds vibrate at set frequencies during purring. During respiration, oscillation of the laryngeal soft tissue structures results in turbulent airflow. Scientists term the audible result of this turbulent airflow a 'tonal buzz', but the rest of us call it purring!

Love, Elizabeth ❖

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