Cornell University
College of Veterinary Medicine
Feline Health Center

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CatWatch

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

INSIDE

IN THE NEWS ...
Geography Ranks Tops in Longevity

A study based on 460,000 cats treated at Banfield Pet Hospitals last year suggests that geographic location influences longevity. Cats live longest in Montana, Colorado, Rhode Island, Illinois and Nebraska, according to Banfield's *third annual State* of Pet Health Report. Cats have shorter lifespans in Delaware, Ohio, Louisiana, Kentucky and Mississippi.

Among the reasons: States with longer living, healthier pets have more pets living inside and high spay/neuter rates.

Regional infectious diseases also play a role in longevity. For example, heat and mosquitoes in Southern states result in higher heartworm rates.

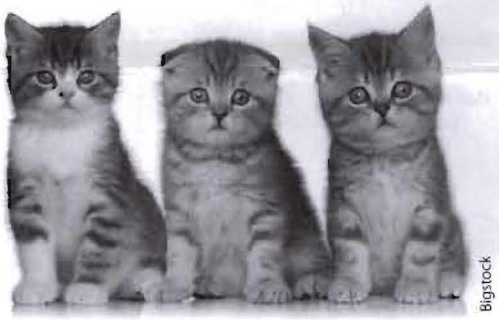
The encouraging news: Cats' average lifespan increased to 12 years, up a year since 2002, thanks to continuing advances in veterinary medicine. ❖

Pursuing a Cure for Breast Cancer

Researchers at Cornell are investigating the possible role of stem cells in the development of mammary tumors

Eighty to 90 percent of mammary tumors in cats are cancerous and can spread as rapidly as aggressive breast cancer does in humans. Researchers at the Cornell University College of Veterinary Medicine are hoping to improve treatment of mammary adenocarcinomas, with the long-term goal of a cure. Their pioneering focus: the role of stem cells in the disease.

Gerlinde Van de Walle, DVM, Ph.D., Assistant Professor of viral pathogenesis and stem cell biology at Cornell's Baker Institute for Animal Health, is working to identify adult mammary stem cells (MaSC) in both healthy and malignant feline and canine mammary gland tissues.



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Spaying before 1 year of age reduces the risk of breast cancer by 50 percent.

"Mammary stem cells have been identified in humans, mice and horses, but not much is known about MaSC in dogs and cats," she says.

(continued on page 6)

The Benefits of a Higher-protein Diet

It won't reverse the inevitable loss of muscle mass that accompanies aging but can help slow it down

Conventional wisdom has long held that cats need less protein as they age. The truth is exactly the opposite, says Joseph Wakshlag, DVM, Ph.D., Associate Professor of Nutrition at the Cornell University College of Veterinary Medicine.

"What we realize in geriatrics is that nobody pays much attention to muscle mass. We're starting to realize you lose muscle mass as you age — human, dog, cat. You can't reverse it," he says. "You have to lift weights to maintain current muscle mass, but it's hard to get a cat to lift weights."

However, you may be able to slow loss of muscle mass with a higher-protein diet, Dr. Wakshlag says. "Cats need double the protein dogs need because they are obligate carnivores, eating mainly animal protein because most plant-based proteins don't have an the appropriate amino acid profile."

Geriatric Screening. Do have your cat undergo a geriatric blood screen before you launch a higher-protein diet, however. "There are some conditions like kidney failure in older cats where a high-protein diet could be detrimental," Dr. Wakshlag says. He discusses

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CatWatch

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A Single Gene Keeps Mice Away From Cats

A specific gene affecting a mouse's sense of smell helps it avoid predatory cats, according to research at Northwestern University. Neurobiologist Thomas Bozza, Ph.D., and his team found that removing an olfactory receptor responsible for detecting certain odors can impact a mouse's survival.

The gene, TAAR4, controls production of a receptor that detects a substance concentrated in carnivores' urine. Usually, mice avoid the scent marks of predators, but those lacking the TAAR4 gene do not — and can end up as prey.

Northwestern offers this perspective in reporting on the study: "Unlike our sense of vision, much less is known about how sensory receptors contribute to the perception of smells. Color vision is generated by the cooperative action of three light-sensitive receptors found in sensory neurons in the eye. People with mutations in even one of these receptors experience color blindness. In contrast to the three color receptors, humans have 380 olfactory receptor genes, while mice have more than 1,000."

It is easy to understand how each of the three color receptors is important and maintained during evolution, says Dr. Bozza, whose study was published in the journal Nature. "But the olfactory system is much more complex."

The consensus in his field was that removing a single gene would not have a significant effect on odor perception, says Dr. Bozza, Assistant Professor of Neurobiology in the Weinberg College of Arts and Sciences at Northwestern.

However, his team members found just the opposite — the gene plays a pivotal role. In one of their experiments, they removed the TAAR4 gene in mice. The result: The mice failed to avoid the smell of predator cat urine.

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Pet ownership may play a positive role in decreasing cardiovascular risk, the American Heart Association says.

For Heart Health

In a somewhat guarded statement, the American Heart Association says that pet ownership may be "reasonable" for reducing the risk of cardiovascular disease.

"We didn't want to make this too strong of a statement," says Glenn N. Levine, MD, at Baylor College of Medicine, who chaired the committee that wrote the statement. "But there are plausible psychological, sociological and physiological reasons to believe that pet ownership might actually have a causal role in decreasing cardiovascular risk."

The association cites the benefits of pet ownership, including:

- Decreasing stress
- Lowering blood pressure and cholesterol
- Helping to reduce obesity
- Lengthening survival among owners with heart disease

However, it offers two caveats about the positive effects of pet ownership: It simply may be that healthier people have pets. And, the association says, "Pet adoption, rescue or purchase should not be done for the primary purpose of reducing CVD risk." ❖

A Simple Way to Check the Ears

Simply rub them to see if it elicits discomfort or extreme delight — both call for closer examination

Hearing is one of a cat's most important senses. Keeping the ears healthy can help prevent painful infections from developing — chronic infections that could damage the ear canal or eardrum and lead to deafness.

Checking the condition of your cat's ears is as simple as stroking them, says dermatologist William H. Miller, VMD, Medical Director of the Companion Animal Hospital at the Cornell University College of Veterinary Medicine. As you rub the ears, you can easily notice if your cat shows signs of discomfort or extreme pleasure. Both instances are a clue that closer inspection is necessary.

"If there is pain or if the animal really gets into it and rubs his ears against your hand, the ears probably have a problem," Dr. Miller says. Other signs that the ears need attention:

- A bad odor
- Yawning
- Redness, which can indicate infection or irritation
- Frequent shaking of the head
- Scratching at the ears or rubbing them against furniture or carpet
- Tilting the head
- Discharge of pus or dry, crumbly, dark-brown wax from the ear

Cats with those signs should see the veterinarian sooner rather than later. They might have mites, a bite-wound abscess or a yeast or bacterial infection. Cats who scratch just in front of the ears, causing abrasions and scabs, may be suffering from environmental or food allergies, which can predispose them to ear problems.

A cat with mild ear odor who gives only an occasional head shake may simply need to have the ears cleaned. If signs continue—or worsen—after cleaning, a veterinary visit is warranted. A thorough cleaning at the clinic and a five- to seven-day course of antibiotic drops or ointment applied to ears are usually all that are needed to clear up the problem.

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If you stroke your cat's ears and he rubs them against your hand, he likely has a problem warranting a veterinary exam.

Weekly Checks. Inspect your cat's ears weekly if he has a history of ear problems. Otherwise, most feline ears do best with a regimen of benign neglect. Healthy cats don't need their ears cleaned. "The normal ear comes with its own built-in ear-cleaning mechanisms," Dr. Miller says. "If ear cleaners are used when they aren't needed, they can damage the mechanisms."

However, if your cat has an active ear infection or is recovering from an ear infection or injury, some maintenance cleaning is necessary. The frequency and method depend on the individual cat.

When necessary, use a mild cleanser made for cats, available from veterinarians and pet supply stores. Be careful with alcohol, which can sting or dry out delicate ear tissue.

To clean the ears, use one hand to tilt the cat's head downward. With the other, squirt enough cleanser into the ear to fill it. Gently massage the outer part of the ear to move the fluid into the ear canal so it can soften any dirt inside. Your cat may shake his head when you're done, which will also help to loosen the debris. Then use a cotton ball to wipe out the ear. Use a cotton-tipped applicator to clean the folds and creases near the surface of the ear, but don't push it into the ear canal. That will just pack debris deeper.

Keep Them Dry. To reduce the number of ear-related veterinary visits, keep your cat's ears dry and clean. Bacteria and yeast thrive in a moist, warm environment with limited airflow such as the inside of a cat's ear.

The best way to monitor the health of your cat's ears is to give them a good sniff. Start when your cat is young. That way, you'll know what odor is normal for him. If the odor changes, Dr. Miller says, something is amiss in the ear canal and a veterinary cleaning may be necessary.

With good care, your cat won't have any problem hearing the sound of the electric can opener, the stream of kibble pouring into his bowl or the tiptoe of a mouse in the house. ❖

Life-saving Steps to Stop Bleeding

Restrain your cat, apply direct pressure to the wound and take him to the nearest veterinarian

If your cat steps on broken glass, catches his dew claw in the carpet or has his ear bitten in a catfight, expect blood to flow. Witnessing any of these scenarios can be jarring, but at times like these you need to know the steps to slow or stop the bleeding and take your cat to the nearest veterinary clinic. You have an emergency on your hands.

"A laceration of a large artery or vein could lead to life-threatening bleeding in minutes," says Daniel J. Fletcher, DVM, Ph.D., Assistant Professor of emergency and critical care at the Cornell University College of Veterinary Medicine.

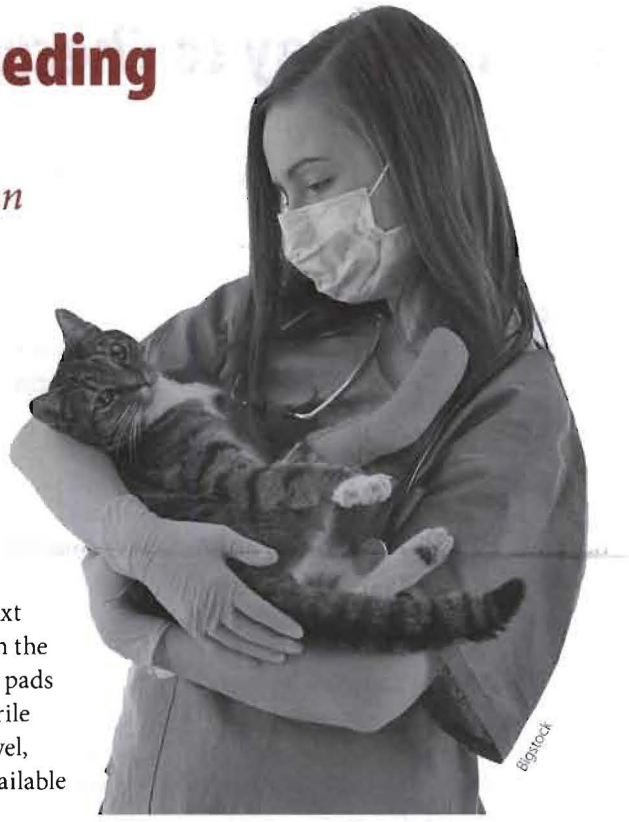
The likelihood of a cat's "bleeding out" depends on how quickly he's treated and the type of bleeding that has occurred. The three types are:

- Arterial, characterized by spurting, bright red blood.
- Venous, characterized by a slower flow of dark-red blood.
- Capillary, characterized by superficial blood oozing, as could occur from a nick in the tip of the ear.

"After a 15 percent blood loss, a cat can begin to have difficulty compensating for it and will start to exhibit an increased heart rate and decreased blood flow to core organs like the heart and brain," Dr. Fletcher says. "Once a cat has lost more than 30 percent of blood volume, he begins to develop serious shock."

Feline nylon muzzles are available at pet supply stores. The muzzle fits over the face, covering the eyes, and fastens at the back of the neck with Velcro. A small opening at the nose enables breathing.

Condition your cat to being fitted with the muzzle at peak training motivational times, such as right before meal time. Be calm and reward him with praise and a small treat. "If your cat is bleeding from a laceration, he is likely to be in pain and even the sweetest family pet may bite if he is in pain, so it is best to be cautious and use a muzzle," Dr. Fletcher says.



Even cats who show no signs of complications after a bleeding episode should be seen by a veterinarian as soon as possible.

Use Sterile Gauze. The next step: Apply direct pressure on the wound by using sterile gauze pads from a first-aid kit. "If no sterile gauze is available, a clean towel, T-shirt or any clean fabric available will work," says Dr. Fletcher.

If blood saturates the first layer of gauze or clothing, apply another clean layer on top and apply direct pressure. Do not remove the first layer because the blood is clotting. You may need to apply several layers and direct pressure to slow or stop the bleeding. Then wrap roll gauze or fabric at least two to three times around the wound and secure it with medical tape. Be careful to make the wrap snug but not so tight that it will cut off circulation.

You can transport your cat to the veterinary clinic in a carrier or wrap him in a large bath towel, which may require some previous practice. Make sure his claws are tucked inside the towel to prevent your being scratched or bitten. Do not attempt to scruff your cat — that is, grasping the loose skin on the top of his neck. Cats have flexible spines and can pivot their back feet and scratch you.

Alert the Clinic. As soon as possible, call the nearest veterinary clinic to let the staff know you're on your way so they can prepare a room for your cat. Ideally, have a family member or friend drive while you limit your cat's movements inside a large towel or, ideally, placed securely inside a pet carrier.

Monitor him for signs of shock. "They include pale gums, a fast heart rate and weak pulses," says Dr. Fletcher. "However, even animals without these signs are at high risk of life-threatening complications and should be seen by a veterinarian as soon as possible."

Depending on the severity of the injury, your cat may be given pain medication and stitches. He may require follow-up visits for new wound dressings.

Although you may be vigilant in pet-proofing your home and do your best to keep your cat safe, you can't completely protect him from harm. But you can be prepared to handle an emergency by taking pet first-aid classes. They're designed to give you hands-on training to stabilize, immobilize and safely transport your injured pet to a clinic. To locate a class in your area, ask your veterinarian or local animal shelter to suggest a qualified first-aid instructor. ❖

PROTEIN... *(continued from cover)*

other essentials of nutrition for seniors in this Q & A.:

Q: *Are senior foods necessary for geriatric cats?*

A: There is no evidence that seniors need it, and it is always based on the individual. Whether it's necessary depends not on your cat's age but his health.

Q: *When does a cat become a senior?*

A: In cats it's based on patterns, metabolism and obesity. Adult years are from 1 or 2 to 7 or 8. Then they have the golden years, which are 7 or 8 to 12, comparable to the 50s for people. They're seniors after 12.

Q: *Do senior cats have different nutritional needs compared to adults, or is that need simply promoted by the pet food industry?*

A: It is pretty much marketing from the pet food industry. Every senior is a little different, and you simply can't say, "Use this kind of food because your cat is this age."

Q: *When is it a good idea to switch to senior food?*

A: It's important to base it on what you see happening. Is your cat getting fat? In that case he needs a light food.

Q: *Do cats tend to either gain or lose weight as they age, as people do?*

A: Yes, they do.

Q: *Are all senior foods pretty much the same?*

A: There is quite a variety because it depends on the manufacturer's philosophy. Some will make higher protein and higher fat, and some the opposite, all based on two basic philosophies. The first philosophy is that older cats tend to get obese and develop metabolic problems in the liver and kidneys, and because they can develop these problems, the manufacturers think you should put your cat on these foods to deal with these issues. It creates a marketing niche for low-protein, low-fat food.

The second philosophy is that since some seniors tend to lose weight — and that's a fairly big trend in cats — use a higher-protein and higher-fat content because the digestive capability is slightly diminished in older patients. That's why it's important to know a geriatric's weight and body condition, and having a yearly blood screen is a great idea because it allows you to tailor your food choice. Don't just grab Senior Food X because it can be different from Senior Food Y. Work with the veterinarian to figure out what your cat needs.

Q: *Is there an ideal ratio of ingredients that we should look for?*

A: It depends on what the blood panel indicates.

Q: *Do seniors digest food more slowly, and if so, how does that factor in choosing food?*

A: It's not more slowly but a little less efficiently. Look for more digestible foods and lower fiber. If you have an overweight cat, you have to have higher fiber because you're trying to decrease calories. But ingredients should be digestible. Typically, you can't find information on digestibility on the label. If the fiber content in the food you are considering are similar to the one you are currently feeding, just choose the one you are most interested in, and if the feces are smaller and look better, then its likely more digestible.

Q: *Do seniors need less phosphorus to help avoid kidney disease or is that concept outdated?*

A: Phosphorus needs are completely dependent on whether or not your cat has kidney problems. A blood panel will indicate any kidney problems.

Have a geriatric blood screen for your cat before beginning a higher-protein diet, says nutritionist Joseph Wakshlag, DVM, PhD, at Cornell. High protein can be detrimental in some conditions like kidney failure.

Q: *Many seniors seem to be on therapeutic commercial food. Are those acceptable for long-term health?*

A: Most of them, yes. It depends on the problem. Those made for urinary stones are high in sodium. If a senior cat has a heart or kidney problem, you shouldn't be feeding those.

Q: *Because seniors tend to take more pills than adults, what are the best foods or treats to hide the pills?*

A: Try a low-sodium peanut butter or a banana. Pill Pockets aren't too bad. Stay away from hotdogs and lunch meat because they're high in salt.

Q: *If there is no need for senior food, should owners choose all-life stages or adult food?*

A: A lot of adult foods are all-life stages anyway. The reality is if the cat is doing fine and doesn't have any problems, is not too lean or heavy, stick with what you've been doing.

Q: *How do you know when and how much to decrease or increase their food?*

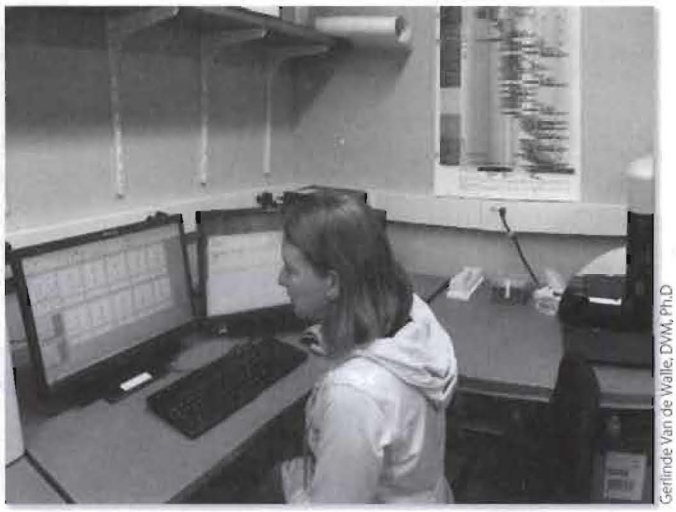
A: You can tell by body condition. ❖

STEM CELLS ...

(continued from cover)

Her theory is that mammary cancer is an adult stem cell disease and that MaSCs are particularly susceptible because they survive longer and go through more changes than most differentiated, or specialized, mammary gland cells do.

Adult stem cells are unique, self-replicating cells that also can develop into specialized cells to form different tissues, and as such, adult stem cells are responsible for regenerating and healing tissue throughout an animal's life. They have been identified in many species' mammary glands, bone marrow, muscle, fat and organs — in fact, in practically every adult organ, Dr. Van de Walle says. "Normal adult cells die off and are replaced by new cells, but stem cells are present for a very long time in an organ, so the chances that something goes wrong with these cells are much higher."



Gerlinde Van de Walle, DVM, Ph.D

Gerlinde Van de Walle, DVM, Ph.D., analyzes cell markers on mammary stem cells with a flow cytometer. This technique uses lasers to count and sort cells based upon their properties.

The incidence of mammary cancer varies greatly. It's widespread in humans, cats and dogs and uncommon in cows and horses. But cats are rarely studied, compared to research in humans and mice, Dr. Van de Walle says. However, because cats develop deadly mammary tumors that are very similar to what is seen in humans, both species could benefit from her research.

Dr. Van de Walle's ultimate goal is to determine how stem cells develop into cancerous tumors and to try to eliminate them so they can't return. "Mammary gland tumors are a huge problem in companion animals, especially for cats," she says. "Most are removed surgically, but after a couple of years there is a high recurrence of these tumors."

Facing a Challenge. Her first step will be to isolate MaSCs by identifying surface markers — recognizable proteins attached to each cell's surface — with the use of flow cytometry. This frequently used technique examines the expression patterns on specific cells, including MaSC. A special challenge she faces is that some markers are commonly found on many cells besides stem cells, making MaSCs hard to identify.

In addition, it's sometimes difficult to find markers that work for feline cells because their proteins are not always identical to those of humans, Dr. Van de Walle says. "Because dogs have been considered good animal models for human diseases, more dog-specific research tools are available, making it easier to work on dogs than on cats. We can use commercially available

THOSE MOST VULNERABLE: 10-YEAR-OLD CATS WHO ARE INTACT OR WERE SPAYED AS ADULTS

Genetic, hormonal, dietary and environmental factors contribute to feline cancer development, but spaying kittens before they're 1 year old cuts their risk of developing mammary cancer in half.

Cats older than 10 who are intact or were spayed as adults are most likely to develop the hard, pea-size tumors, often found in multiple mammary glands. It's crucial for owners to frequently check for bumps on an older cat's abdomen and chest. Malignant tumors grow quickly and can spread to the lymph nodes and lungs, potentially worsening their prognosis. The size, severity and extent of tumor spread affect survival. In fact, tumor size alone may have a big impact.

A landmark study published in the Journal of the American Veterinary Medical Association in 1984 reported that cats lived three to four and a half years after surgical removal of mammary adenocarcinomas smaller than two centimeters, or about three-fourths of an inch, but cats survived only 6 to 12 months when the excised tumors exceeded three centimeters.

More recently, however, a study in the Canadian Veterinary Journal in 2002 stated, "Tumor size alone is of limited prognostic value" for cats with tumors smaller than three centimeters because feline survival varied from 3 to 54 months.

"This cancer is so aggressive in cats, there are not really any good treatment options available," says Gerlinde Van de Walle, DVM, Ph.D., at Cornell.

antibodies for the canine MaSCs, but we need to create our own feline tools if we want to characterize feline MaSCs."

She's collaborating with Cornell researcher Bettina Wagner, DVM, Ph.D., to develop feline antibodies that can reveal feline MaSC markers.

Dr. Van de Walle's previous research has paved the way for her current study, which is funded by the Morris Animal Foundation and Ghent University in Belgium. The mammary gland differentiates mammals from all other animals, she writes in "Mammary Stem Cell Research in Veterinary Science: An Update," published in January in the journal Stem Cells and Development.

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Malignant mammary tumors can grow quickly, spreading to the lymph nodes and lungs. It's crucial for owners to regularly check for bumps on older cats' abdomen and chest.

Unchanged DNA. "In a mammal's lifetime, the mammary gland probably undergoes more and greater changes in size, structure, composition and activity than any other tissue or organ. These repeated changes make breast tissue vulnerable to gene mutations and epigenetic alterations in gene expression," Dr. Van de Walle says. Epigenetics are a regulating mechanism of genes. They change the expression of the gene over time without changing the DNA code. The result: Both genetic and epigenetic modifications are key contributors to cancer's development, she says.

One gene is of particular significance in her research, though its role in feline and canine mammary cancer is unknown at this point: the spleen tyrosine kinase (SYK) gene. It's been shown in human breast cancer that it can function as a tumor suppressor gene. SYK is an enzyme that acts as an off-on switch in many cellular functions and its expression is suppressed in human breast cancer. As a researcher at Ghent University, Dr. Van de Walle and her team discovered that the SYK gene is also expressed in the mammary gland tissue of dogs and cats.

"Once we isolate and characterize the MaSC from healthy mammary gland tissue and breast tumor tissue in dogs and cats," she says, "we can compare the SYK gene expression in healthy and tumor stem cells to see if there's a difference, as has been described in human research."

If SYK expression is turned off in mammary tumors, finding the responsible mechanism could assist in turning the gene back on and slowing tumor formation, Dr. Van de Walle says. The approach could lead to development of novel anti-cancer drugs, but it will be many years before stem cell therapy or these novel anti-cancer drugs may be used to treat mammary cancer in pets, she says. "Maybe in five to 10 years we'll be testing some of these theories if research goes smoothly." ❖

UNDERSTANDING ADULT STEM CELLS

An adult stem cell, which can be found in various tissues, including the mammary gland, has these basic characteristics:

- It can reproduce identical stem cells.
- It can grow into specific different tissue types.
- It is responsible for adult tissue regeneration.
- It differs from an embryonic stem cell.

Gerlinde Van de Walle, DVM, Ph.D

Mammary stem cells from a cat's mammary gland were grown in the laboratory as a mammosphere, which is a floating clump of mammary gland cells.

ASK ELIZABETH

Elizabeth

Elizabeth is thankful for the assistance of ***Bruce G. Kornreich, DVM, Ph.D., DACVIM,*** *Associate Director of the Cornell Feline Health Center, in providing the answer on this page.*

PLEASE SHARE YOUR QUESTIONS

We welcome questions on health, medicine and behavior, but regret that we cannot comment on prior diagnoses and specific products. Please write *CatWatch* Editor, 800 Connecticut Ave., Norwalk, CT, 06854 or email catwatcheditor@cornell.edu.

COMING UP ...

❖

COLD LASER THERAPY

❖

BITING

❖

STRANGER DANGER

❖

PRE- AND POST-SURGERY

❖

Q *What is the kindest way to transport three 12-year-old kitties across the country? This move is going to be a big change for them, and it would be great if there is a loving, safe and sane way for all of us to get to our new home.*

Sincerely, Moving Out

A It's true that moving to a new location can be exciting, but it can be a source of anxiety for people and their four-legged friends, kitties certainly included. While some tension is unavoidable, there are a few things to consider when determining the safest, most comfortable and least traumatic way of getting your kitties to their new environs.

One important consideration regardless of whether traveling by plane or automobile is the cat carrier. It should be sturdy, made of an easily cleaned, non-porous material such as plastic, an appropriate size so that your kitty can comfortably lie down and turn around (we may like sardines, but we don't want to be transported like them!), and should have adequate ventilation to assure that temperature and humidity are kept within a comfortable range. In some cases, having a carrier big enough for a litter pan may be helpful, although most cats are hesitant to use the litter box during transport.

Since many cats equate a carrier with unpleasant trips to the veterinarian and tend to avoid them when introduced to them at home, try to acclimate your kitty to the carrier if you have time. Leave the door open and put treats and a familiar-smelling bedding in it for several weeks. Encourage your kitty to use the open carrier to rest or sleep in it with positive reinforcement such as softly spoken praise and petting. This familiarization should make the experience of traveling in a carrier a bit easier on your feline friends. It is important that you use one carrier for each cat to minimize problems such as ventilation, excessive heat or negative interactions that may occur with multiple cats in one carrier.

If you travel by car, put the carrier in a well ventilated place, ideally where your kitty can see you and/or other people in the vehicle, as this may provide some measure of comfort. Don't leave your kitty unattended in a car that may overheat during hot weather or become too cold during winter months.

Transporting cats by airplane is a viable option for most adult cats, but make sure that you check with the airline about space constraints, minimum/maximum temperatures for flight, and specific regulations regarding carrier type and size before making arrangements. Many airlines do not allow cats to travel in the passenger section with their owners, and if this is the case, your kitty will be housed in a heated and pressurized area in the storage compartment of the plane. Pregnant cats and cats under 3 months of age should not travel by air. You should also check to make sure that you have documents such as health certificates and/or proof of vaccination beforehand. Direct flights are preferred to avoid undue transfers and/or waiting in conditions of extreme temperature and humidity.

Generally, it is best to withhold food for four to five hours before traveling to avoid motion-induced vomiting. You can provide water up to departure and at intervals during the trip, if possible.

Some cats who are extremely nervous when traveling may benefit from tranquilizers, but this decision should be made upon consultation with a veterinarian. A number of issues, including health problems and the ability to respond to changing temperatures, are important to consider.

I think that if you follow these recommendations, you and your babies can get from where you are now to where you are going without too much duress. If you have any further questions or concerns regarding your trip, I encourage you to consult your cats' veterinarian. I hope you find traveling just as rewarding as the destination, and please drop me a post card when you get to your new home. ❖

—Best regards, Elizabeth

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