

# Perspectives On Cats

A Newsletter for Cat Fanciers  
From The Cornell Feline Health Center

Winter 1983

## First Aid—Part IV

### Emergency Care for Burns and Frostbite

Joyce Tumbelston



In my mother's household once lived a cat that loved to perch on the counter beside the stove. Zorba had a curious habit of slowly and rhythmically lifting and lowering his tail as he surveyed the kitchen activities. Many evenings the acrid odor of singed fur mingled with the aroma of the dinner being prepared, for his tail frequently swept gracefully across one of the hot electric elements. Anguished cries from his owners and repeated attempts to keep him away from his favorite roost could not break Zorba from his habit. Luckily for him, the damage was not even skin deep; if Zorba had ever really been injured by this ritual, he obviously would not have repeated it with such regularity.

If only every feline encounter with firey heat could be so innocuous! Unfortunately burns can be quite harmful, even life-threatening, to cats. The causes of burns are many: contact with flame or direct heat, flying cinders and sparks, steam, hot liquids, spattered cooking oil, hot tar, and caustic chemicals, for instance.

Burns are classified as either major or minor, superficial or deep. Major burns cover more than 5% of the body surface. A superficial burn affects only the surface cells, but a deep burn damages or destroys the deeper layers of skin and possibly also the underlying tissues. A deep burn may destroy the hair follicles, so that scar tissue will form and the fur will be permanently gone.

Secondary effects of burns can be very destructive, even fatal. These include

shock, infection (because the wound is open to bacterial invasion), and toxemia (from the absorption of poisons produced by the damaged cells or bacteria).

Intensive, prolonged care is necessary for a cat that has been deeply burned. Recovery from deep burns is usually possible with proper therapy if 15% or less of the body surface is affected.

#### **Thermal Burns**

Household accidents are the most common causes of thermal burns, a large portion of which occur in the kitchen. The pet may be spattered by hot grease from a frying pan or scalded by boiling water, or the footpads may be burned by walking across a hot stove. Many times these accidents are the result of carelessness by the owner, and could be avoided if dangerous items were kept out of the pet's reach.

When the skin is burned, the small blood vessels dilate, allowing fluid to escape and accumulate in the surrounding tissues, causing localized swelling. Some fluid comes to the surface, making the burned area moist and red. If the burns are massive and the protective layer of skin is completely absent, the rapid loss of fluid may throw the cat into severe shock.

When a cat has been scalded by hot liquid or steam, the hair and skin are still in place; in this case you can determine the size of the burn by the red appearance and by the fact that it will feel hot to your touch. Fluid released by the blood vessels after a scald may mat

the hair over the wound, hiding the damage. This can give harmful bacteria time to multiply. An infection and accumulation of pus may be hidden for some time until the cat shows signs of illness.

An injured cat characteristically becomes very defensive, and may resist your attempts to help it, because of fear and pain. Be prepared to restrain the cat in order to treat the burn. Your priorities are to relieve pain, prevent or treat shock, prevent infection, and stimulate healing.

### **Treatment of Superficial Burns**

To relieve the pain of a superficial burn, apply ice packs or immerse the affected area in cold water. Dry gently. If possible, remove the hair from around the wound to minimize chances of infection.

Do not apply butter or any oil-based ointment; these may intensify the burning sensation. Also, do not apply human medications; these may be toxic if licked by the cat.

Instead, apply a thin film of an antibiotic such as a topical ophthalmic (eye) ointment or one of the following home remedies: some "jelly" from the inside of the leaf of an aloe vera ("burn") plant; or a wet dressing of Burrow's solution (this is made with water and Domebro tablets or powder, available at most pharmacies). Either of these home remedies will reduce pain and inflammation when applied repeatedly to keep the injured area moist.

Cover the area with a clean dressing held in place with a bandage. Take the cat to your veterinarian for further examination and treatment if you believe the burn is serious. Otherwise, check the bandage daily. If the burn becomes infected or doesn't begin to heal within several days, it is time to see the veterinarian.

### **Treatment of Deep Burns**

Extensive or deep burns need immediate veterinary attention. Call ahead to make sure a veterinarian will be ready and able

to treat the cat as soon as you get there; this will save precious time.

Meanwhile, soak a clean cloth in cold water and apply it very gently to the burned area. Keep the patient warm and monitor for signs of shock. (To recognize and treat shock, see Part III of this series in the Fall 1983 issue of Perspectives on Cats.)

Take the cat promptly to the veterinarian. Protect the wet dressing with thick, clean, dry bandages or towels and keep the cat calm during the journey.

In cases of severe burns, the victim loses a tremendous amount of fluid. Your veterinarian may choose to establish an intravenous route of fluid therapy to counteract this loss.

If for some reason it is impossible to obtain veterinary treatment right away, you may have to clean visible debris or foreign matter out of the wound yourself. Normally, with a serious burn, you would not take the time to do this but would rush the cat to the veterinary hospital as soon as you have alleviated the immediate pain and signs of shock. If you are on your own, though, clean the debris from

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## *Perspectives On Cats*

*A Newsletter for Cat Fanciers  
From The Cornell Feline Health Center*

The ultimate purpose of the Cornell Feline Health Center is to improve the health of cats everywhere, by developing methods to prevent or cure feline diseases, and by providing continuing education to veterinarians and cat owners. All contributions are tax-deductible.

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# Cat-Scratch Disease

Fredric W. Scott, D.V.M., Ph.D.

Cat-scratch disease (CSD, cat-scratch syndrome, cat-scratch fever, benign lymphoreticulosis) is an infectious disease of humans characterized by a painful inflammation of the lymph nodes. The causative agent is unknown, but 90% of all people affected have had contact with cats, and 65% have recently been scratched or bitten by a cat. Because of this high correlation with cat exposure, plus the limited knowledge about the condition and the high anxiety factor in affected people, the Cornell Feline Health Center is frequently contacted for information.

## The Cause

Various viruses including a herpesvirus and chlamydia have been suspected at one time or another to be the cause of CSD, but none of these agents have been proven to be involved. Standard laboratory diagnostic techniques and electron microscopic examination of human lymph node biopsies have until very recently produced negative results. Likewise, blood tests have not revealed any organisms known to cause feline or human disease. Most investigators have felt that an as-yet-unidentified virus is the causative agent.

In the latest development, reported in the September 30, 1983 issue of *Science* magazine<sup>1</sup>, U.S. Government medical researchers observed delicate, variably shaped bacilli in 34 of 39 lymph nodes of CSD patients. This bacterial infection, observed by microscopic examination of affected tissues, is believed by the discoverers to be the cause of CSD.

## Incidence

CSD occurs sporadically worldwide, and occasionally strikes several members of a family. In temperate areas there is an increased incidence in fall and winter.

## The Disease in Man

After the scratch or bite, there is an

incubation period of 7-20 days before the development of symptoms. About 50% of patients develop a reaction at the site of the injury, usually the arms or face. Reddish pimples, pustules, or blisters appear in these patients and later may ulcerate.

Inflammation of the lymph nodes usually occurs on only one side of the body. The affected nodes or glands are usually located in the armpit, upper arm, or neck. Glands in the upper thigh and groin may occasionally be involved. This inflammation may last from a few weeks to several months, with formation and discharge of pus occurring in about 25% of cases.

Many patients have symptoms of generalized infection such as fever, malaise, loss of appetite, chills, and generalized pains.

## The Role of the Cat

Approximately 90% of CSD cases are associated with cat contact, with documented bites or scratches in about 65% of the cases. The exact role of the cat is not known. It could be that the infective organism is an external agent located on the skin of the person or cat, which gains entry to the person's system through a bite or scratch wound. In this case, the cat would be merely a mechanical vector, that is, a carrier which transmits the causative organism by scratch or bite but is not truly infected itself. It is also possible that the cat carries a virus or other agent which contaminates the claws or mouth but cannot be detected by normal laboratory tests. The cats in question usually are healthy. There have been several reported instances of more than one case of CSD in a family caused by the scratch of a single cat. It would seem prudent to restrict a suspected CSD carrier cat from close contact with children.

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## *First Aid* (Continued from page 2.)

the wound with contact lens solution or a sterile salt solution. This can be made by adding one teaspoon of salt to one pint of boiled water and allowing it to become lukewarm. Sterile distilled water can take the place of the boiled water and will be faster, if available. If the injury is dirty or greasy, first cleanse it gently with warm soap and water, then with the saline solution. It is preferable to leave this cleaning to a trained professional if you can.

### **Electrical Burns**

Electrical burns are perhaps the most dangerous kind and are often fatal. Usually seen around the corner of the mouth or on the tip of the tongue, electrical burns appear as red, sometimes blistered flesh that is painful to the touch. The burn itself (possibly caused by chewing through a plugged-in appliance cord, coming into contact with an improperly insulated appliance, or lightning) is not nearly as life-threatening as the electric shock that accompanies it. Cats can actu-

ally be jolted into cardiac arrest and death.

A slower-developing, equally treacherous complication is pulmonary edema. This build-up of excessive fluid in the lungs can appear up to an hour after the electric shock occurs and, if untreated, can be fatal. For this reason, any animal that has suffered an electrical burn should be taken directly to the veterinarian, even if there are no apparent complications. An electrical burn is a true emergency; brain or nerve damage is a strong possibility and, in most cases, the cat will not survive without immediate veterinary attention.

Do not attempt to treat the actual burn at home. The other complications are far more serious and should be treated professionally as soon as possible.

Your first priority is to treat the animal for shock. It is highly possible that the cat will need cardio-pulmonary resuscitation (see Part III, Fall 1983). While you are occupied, have another person call and alert the veterinarian that you will soon be on the way.

Signs of shock may include respiratory distress, a pale or blue color to the lips, gums, and lining of the eyelids, stiffness in the limbs, a glassy stare, and perhaps a total collapse. As the cat goes into shock, its temperature drops rapidly. It is imperative to keep the cat warm. Use a heating pad, hot water bottle, or heavy blanket.

It is wise to decrease the possibility of electrical shocks by unplugging all appliances that are not in use. Young animals can be expected to gnaw on electrical cords and other items until about 18 months old. Especially during these early months, they should not be left unattended near potential sources of electric shock.

### **Chemical Burns**

There are two general types of chemicals that cause burns: acids (e.g., turpentine, toilet bowl cleaners) and alkalis (e.g., lye, drain cleaners, caustic soda). A

## *Cat-Scratch Disease* (Cont. from p. 3.)

### **Diagnostic Procedures**

There are no tests available to determine if a particular cat is in fact a carrier of the CSD agent.

In humans, there also is not a reliable diagnostic test. Most cases are diagnosed on the basis of symptoms, an association with a cat, and possibly microscopic examination of a biopsy of an affected lymph node. An intradermal test similar to allergy sensitivity testing has been used in the past, but it is not standardized or reliable and therefore is not used in most areas. It will be interesting to see whether continued investigation of the newly discovered bacillus further implicates or exonerates the cat as the culprit in this disease.

### **Reference**

<sup>1</sup>Wear DJ, Margileth AM, Hadfield TL, Fischer GW, Schlagel CJ and King FM: Cat Scratch Disease: A Bacterial Infection. *Science* 221: 1403-1404, Sept 30, 1983.



strange odor may be one of the first tell-tale signs that a cat has come in contact with one of these. Either kind of chemical will cause painful redness of the skin and may even eat away the skin if left on for an extended period of time. The suffering cat may further injure itself by licking at the noxious substance. It is important to wash the chemical from the skin quickly, soothe and protect the injury, and obtain veterinary care.

You may want to wear rubber gloves to protect your hands as you cleanse the corrosive substance from the animal. Wash away acids with an alkaline solution, i.e., 1 teaspoon of bicarbonate of soda dissolved in a pint of warm water. Wash away alkalis with an acidic solution, i.e., equal parts of vinegar and warm water. These opposing types of solutions will neutralize the chemical causing the burn. If you are unsure what type of chemical is involved, wash the area with plain water.

If you have the chemical container on hand, check to see if a specific antidote is listed and if so, apply it to the burned area. If this is not possible, apply one of the home remedies mentioned for thermal burns to soothe pain.

If the face and eyes are burned, you will probably need another person to help hold the cat while you rinse the eyes. The cat will struggle furiously. For your own safety, restrain the cat's body in a thick blanket and apply a muzzle quickly, if you can. Hold the eyelids open and flush well, though gently, with copious amounts of lukewarm water. A bulb syringe will help to direct the water on the eyes. Eyes are extremely fragile and must be treated as quickly as possible. As soon as you are sure you have removed the caustic substance, take the cat to a veterinary hospital.

### **Frostbite**

Frostbite and freezing cause tissue damage similar to burns. They occur when an animal is exposed for a long period to extreme cold and high winds. Circulation becomes impaired in the extremities (ears,

tail, feet) and crystals form, damaging or destroying the tissues. The affected area may first turn very pale, then, after thawing, become red and scaly. Frostbite causes severe pain; therefore, handle an affected cat with extreme care.

First move the cat to a warm place. Use moist, warm packs or a blow dryer to bring the temperature of the affected area rapidly back to normal. Do not use excessive heat and do not rub the frozen areas, for this may cause further damage or loss of tissue. Apply an antiseptic such as eye ointment to the affected area. Call your veterinarian; he or she may prescribe oral antibiotics to prevent or fight infection, and sedatives for pain.

In the case of serious freezing, the entire body temperature will be dangerously low and the cat may be comatose and near death. Quickly reverse this decline by immersing the cat in warm, not hot water (102°-105°F, 39°-41°C). Dry very gently and thoroughly with a blow dryer, then wrap the cat snugly to keep it warm. Treat signs of shock and take the animal quickly to the veterinarian. If you are snowbound and absolutely cannot get out, try to feed the cat some warm broth or other warm liquid.

It may take 5-10 days before you can see whether new tissue is replacing the dead, frozen tissue. If healing is not evident there is a danger of gangrene, and some amputation may be necessary.

Frostbite and freezing can be prevented by keeping your cat indoors in times of extreme cold or by ensuring access to a sheltered area in a barn, garage, or porch. Once affected, animals are more prone to frostbite in the future, so owners should be especially protective of cats that have recovered from this type of burn.

### **Conclusion**

Treatment of any severe burn is best entrusted to trained professionals; your cat's survival may depend on prompt, expert examination and intensive care.

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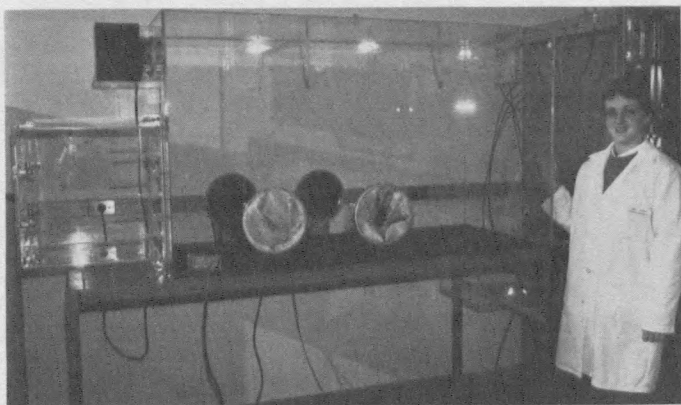
## Our 1983 Christmas "Wish List"

### Generous Friends Made All Our 1982 "Wishes" Come True

Last year at this time the Cornell Feline Health Center tried out a bold, new idea: we came directly to our readers with a "Christmas Wish List" of items that would help us make a better world for cats. To our great joy, all the items on our list were funded by gifts from our friends and Veterinary College alumni.

An incubator for critically ill cats, an isolation unit for raising germ-free kittens (pictured below), and a gradient mixer for detailed study of viruses were funded by Mr. and Mrs. Ellice McDonald, Jr., of Montchanin, Delaware. A small incubator donated by Pat Crump of Fort Smith, Arkansas, was refurbished for use inside the isolation unit. A refractometer for use in conjunction with the gradient mixer was the gift of Don and Joan Blackburn of San Antonio, Texas. An ultrasound unit (pictured at right) for visualizing the cat's heart and internal organs without the risk of surgery or other invasive procedures was obtained with funds donated by the College alumni. A number of other friends included the Center generously in their year-end

giving. To each one of you, we express again our heartfelt thanks.



Graduate Research Assistant Cheryl A. Stoddart, M.S., stands beside the isolation unit built to her specifications for raising germ-free kittens, a 1982 Christmas gift from Mr. & Mrs. Ellice McDonald, Jr., of Montchanin, Delaware.



Without invading the body, a moving image of the cat's heart or other organs can be displayed on the screen of the ultrasound unit funded by the Veterinary College alumni.



Your warm response last year has encouraged us to continue the "Wish List" tradition. This time we have identified several ways, large and small, by which you can help foster better health for cats.

1. Feline Infectious Peritonitis (FIP) Vaccine Research: \$1,000 each from 100 donors.

Think of it as a "share" (figuratively speaking) in our quest for an FIP vaccine. Your "dividend" will be the satisfaction of knowing that you had a part in the research that one day may produce a means of preventing one of the most heartbreaking, fatal diseases of cats. We are earnestly hoping for 100 dedicated individuals or groups to underwrite the 1984 research efforts of four investigators currently working full time on this project. Let us emphasize that donors will not be purchasing a legal share of ownership in any sense of the word. Nor can we guarantee that our efforts will produce the vaccine that is so desperately needed. But we are putting a maximum effort into our search for an FIP vaccine, and you (or your family, or your club) can really make a difference by giving your solid support in this way.

2. 8 mm Videotape Recorder: \$800.

This camera would be used for feline behavior studies, specifically to tape the antics of misbehaving cats while their owners are away. Viewing the tapes later will help our behavior specialists design a tailor-made course of therapy to modify behavior problems.

3. Resusci-Cat: \$7,500.

A life-size model of a dog (complete with fur) has been developed at the College of Veterinary Medicine to train future veterinarians in cardiopulmonary resuscitation (CPR). A cat is not a dog - and it would be helpful to teach students this emergency life-saving technique on a model of the cat as well.

4. Uni Pump: \$3,500.

Veterinarians from all across America (especially throughout the Northeast) send blood samples from sick cats to the Diagnostic Laboratory here at Cornell, depending on our help to determine what is wrong with their seriously ill patients. A uni pump would provide greater accuracy and better results in laboratory tests for FIP, toxoplasmosis, and other diseases of cats.

The following items are sorely needed in the Teaching Hospital for treatment of feline patients:

5. Two Feline Anesthesia Chambers: \$200 (\$100 each).

These are needed to prepare patients for surgery.

6. Stainless Steel Transport Table: \$250.

This is needed to safely transport anesthetized patients to the operating room and from there to the Intensive Care Unit (ICU).

7. Three Aqua-matic Heating Pads - K Module: \$750 (\$250 each).

Hospitalized cats are kept warm on these specialized heating pads during surgery and afterwards in ICU. Body temperature must be maintained in order to prevent shock during these critical times.

8. Electro-cautery Unit: \$3,500.

Surgery is performed more quickly and safely with this unit, which is used to control bleeding.

9. Four Cage Dryers: \$600 (\$150 each).

These are used to dry hospitalized cats and kittens after baths are given.

Each of these gift ideas is a very practical way you can express your love for cats. Some of these will provide immediate help for ill and injured cats; others will help meet the long-range objective of preventing future illness. We're hoping that our readers will rally once again to make these worthy "wishes" come true.

## *Feline Rabies on the Rise; Vaccination Urged*

The Cornell Feline Health Center joins the U.S. Dept. of Health and Human Services Centers for Disease Control (CDC) in urging vaccination of cats against rabies, especially in high risk areas. Cats are highly susceptible to rabies and, once infected, they present a great hazard to humans. Rabid cats usually become very vicious, biting people or other animals, thereby transmitting the virus.

Feline rabies has increased 197 percent in the last four years. In 1981, for the first time, rabid cats outnumbered rabid dogs in the United States, probably because most states do not require licensing and vaccination for cats as they do for dogs. Only about four percent of the cats in this country are vaccinated against rabies.

The number of rabies cases is not

large, but the trend is disturbing. In 1981 (the most recent year for which figures are available) there were 285 reported cases of feline rabies. The CDC report that total cases of animal rabies have doubled since 1979, with 7,211 cases reported nationwide in 1981.

An outbreak of a new strain of raccoon rabies was reported in the mid-Atlantic states in 1982. The presence of endemic infection in neighboring states represents danger to cats and other domestic animals. From its origin on the Virginia/West Virginia border, the outbreak is spreading at a rate of 25-50 miles per year, now approaching New Jersey and Delaware, according to the CDC. Outdoor pets in Virginia, West Virginia, Maryland, Pennsylvania, and the District of Columbia are consequently at increased risk of rabies exposure.

Kittens should be vaccinated at the age of three months; cats should be revaccinated yearly. The protection afforded by regular vaccinations is well worth the time and modest investment required. People who frequently come in contact with strange animals, including humane shelter workers, animal control officers, and veterinarians, are also strongly advised to obtain rabies vaccinations.

### *First Aid* (Continued from page 5.)

But, if necessary, you can relieve immediate pain and counteract the life-threatening effects of shock until expert care can be obtained. With a thorough understanding of these general procedures, you can greatly reduce the trauma to your pet, should such an emergency arise.

**Next topic: Poisons.**



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