DANGERS OF CANINE HEATSTROKE

BY MIYO MURTAGH, ER VET AT FRIENDSHIP ANIMAL HOSPITAL

Four of Miyo’s six Akitas have come from ARMAC. “They have truly been a fleet of ambassadors for the breed – my dogs have changed many opinions about the breed where I work.” - Murtagh

Obviously information is available everywhere, some good and some not so good. The website that I refer my clients to is www.veterinarypartner.com. It’s written by veterinarians for laypeople and is part of the Veterinary Information Network, a site that I turn to regularly to get the most up-to-date information. I trust the site and the information is really good. If there are any specific topics anyone would like to know about, just let me know and I can write about them. I am also happy to address specific questions that anyone has. My email address is hotsaki@gmail.com. I will write based on my medical knowledge, perceptions, and experiences, because I have learned and read about lots of things that just don’t seem to happen that way in the real world emergency room. Now I am writing about a topic that is important every year and causes me to work many late nights and counsel a lot of upset clients – heatstroke. I tend to see a lot of these cases as the weather starts to get warm, when dogs haven’t had a chance to acclimate to the higher temperatures. The breeds that I am generally treating for this are the Labradors, the Goldens, and the Bulldogs (and other short-snouted breeds). The reality is, though, that this can happen to any breed, especially the kind with the extra-thick fur. I get so frustrated and angry because this is so easily prevented! And really, really expensive to treat; and is often deadly. In the spring and early summer, many people don’t think twice about taking their dogs jogging with them in the middle of the day because “it’s not too hot”. Or they don’t think about leaving their dogs in the car when it is 70 degrees outside (“but I cracked the window open” is often heard). Even at a moderate temperature of 70 degrees, the temperature inside of a car can increase a tremendous amount. One important thing to remember is that dogs can’t dissipate heat as easily as people can. We sweat and therefore are cooled by evaporative cooling – but the only thing that our dogs can do is pant...they are dependent on that air exchange only for cooling (okay, so they can dissipate some heat through their pads and non-haired areas, but it’s negligible). So what is heatstroke exactly? It is when the body temperature rises above normal (which is up to about 102.5 for a dog). The temperature can rise because of several things – fever, inflammation, seizures, or other medical conditions. What we are talking about here is a hyperthermia which is an increase in body temperature above the normal set-point due to environmental factors (heat and humidity) and increased activity. Signs of heat stress are seen first: thirst and discomfort associated with physical activity, which progresses to heat exhaustion: intense thirst, weakness, discomfort, anxiety, fainting. Unfortunately, lots of dogs will just keep going without showing the initial signs – therefore, it’s so important that owners notice these signs. There is so much that is going on inside the body when the temperature increases! Multi-organ involvement results in the systemic inflammatory response syndrome, which can then progress to multi-organ dysfunction syndrome – this is all secondary to the acute physiological alterations that are occurring. Temperatures greater than 109 results in enzyme dysfunction and destruction of proteins, which results in significant injury. At more extreme body temperatures, all cellular structures are destroyed and cell death occurs in less than 5 minutes. There is another type of heat stroke that is even worse, and that is called exertional heatstroke. The same things as above occur, but when increased physical activity is involved, the muscle tissue breaks down and causes a pigment called myoglobin to be released into the bloodstream. This pigment is toxic to the kidneys and can cause kidney failure. What does all this look like to me when I am working and a pet is rushed into the treatment room that is suffering from heatstroke? I am always faced with a hysterical owner. The dog’s presentation can vary depending on severity, but generally it is recumbent, non-responsive, panting so hard that you can hear them from the next room, and are unbelievably hot to the touch – especially the tongue. This is generally accompanied by a very high heart rate, weak pulses, brick-red gums, blow-out bloody diarrhea with chunks of tissue in it, sometimes vomiting, and sometimes bruising in the mouth and on the skin. The high heart rate, weak pulses, and gums are a result of circulatory shock (the gums can also be pale pink to white). The diarrhea is in essence due to the intestines being “cooked” from the high body temperature, and the bruising is due to a very serious sequela of heatstroke called disseminated intravascular coagulation (or DIC for short). DIC is something that can have its own paragraph, but generally it is when the body’s blood clotting system goes haywire from serious disease or trauma – all of the clotting factors are used up, then since there are not more clotting factors, (cont’d on page 2)
Heatstroke (cont’d from cover)

we see signs of bleeding (hence the bruising), and dogs can bleed out and die from it. What do I have to do to help these dogs and what do I have to worry about? So many things need to happen at the same time. The first several things listed are happening at the same time, and we are really good at doing them FAST:

- Examine the dog
- Give him oxygen
- Start IV fluids to help with the shock (also helps to cool)
- Get its temperature. If it’s high, we cool it until the temperature is 104. If we keep cooling past that, the dog with then become hypothermic (temp too low), we will cool the dog by placing a wet towel and a fan on him. We do not submerge the dog in ice water! Any cooling method we use has to be easily stopped/reversible so the temperature doesn’t drop too low
- Get a blood pressure, and keep monitoring it as we fix the shock. Same with heart rate and pulse quality
- Pull some blood and do some quick lab work to check out his blood sugar, electrolytes, lactate, kidney function, blood clotting capibilities, packed cell volume (full bloodwork will be running in the meantime to look for extent of organ damage)

These are the initial things that need to happen. I have already had a very quick conversation with the owners by this point, and now that I have some idea of the extent of disease in the pet, I will have a longer conversation with the owners. Depending on these results, I can give the owners an idea of what will need to happen next to try to save the dog, and the dog’s prognosis. If the dog’s lactate level is very high (indicates altered cell metabolism), or if the clotting times are elevated (meaning DIC), the prognosis is poor.

Let’s say that the owners want us to do whatever we can to save their dog...I present them with a very high estimate that includes lots of blood work, intensive nursing care, plasma transfusions, antibiotics, fluids, pain medications, etc. I have had heatstroke patients that have been in the hospital for 5 days with a $5000+ bill (and sadly, they don’t always survive). Treatments and continuous diagnostics for the dog include:

- Oxygen, pain medications because a sloughing gut has got to hurt.
- IV fluids with supplements to restore circulation, electrolyte balance, hydration, antibiotics – any time the body temperature gets that high, I start antibiotics. The gastrointestinal tract has been compromised and can get very leaky – as a result we can have bacteria that leak out into the abdomen, and then the dog ends up with a wicked septic peritonitis.
- Anti-nausea medications/gastric protectants – the lack of circulation is also unhealthy for the stomach and we can see vomiting.
- Plasma transfusions – these are necessary if the clotting times are above normal. The plasma will supply the dog with the clotting factors it needs until the body can make its own. If the dog’s presenting temperature was really high, I will usually give him a plasma transfusion even if the clotting times are normal – it’s better to prevent DIC than to have to treat it. Plasma transfusion even if the clotting times are normal – it’s better to prevent DIC than to have to treat it. If I am treating exertional heatstroke, I will put in a urinary catheter and monitor urine output to watch for kidney failure, and if the kidneys are not making enough urine, there are different medications to try to help (and give the owner an even worse prognosis).
- Liver supplements – the liver is almost always damaged by the lack of oxygen during the episode – luckily, it regenerates. If the dog’s neurologic status is altered, medications to help with brain swelling; repeat lab work to check clotting times, white blood cell count, liver and kidney values repeated neurologic examinations of the dog’s mental status medications for refractory hypotension medications for cardiac arrhythmias.

Heatstroke is neither easy nor inexpensive to treat. And it’s easily prevented. What can owners do?

- Do not leave your dog alone for any length of time while he is so sick.
- Do not try to force the dog to drink. This can cause it to choke or death.
- Do not use cold water or ice (this actually will constrict the blood vessels and make things worse)
- Do not muzzle your dog
- Do not let dogs out when it’s really hot. This is especially true of dogs with predisposing conditions like obesity, breathing issues, heart disease, and old age.
- If they are outside, make sure that there is shade and plenty of water available at all times.
- Do not leave your dog in a parked car, even if it is in the shade and the “window is cracked open”
- Restrict outdoor activity and don’t take your dog jogging or biking with you
- Do not muzzle your dog
- Avoid areas like the beach, concrete, and asphalt where the heat reflects and the surfaces get really hot and burn paws.

What if your dog is showing signs of heatstroke?

- Remove your dog from the area where it occurred and put it somewhere cool.
- If possible, get a rectal temperature so you can tell the veterinarian how high it was.
- Start to cool the dog by placing cool, wet towels on it. Also wet the paw pads and the ear flaps and areas with no fur. Put a fan on the dog to help with evaporative cooling.
- Have cool water available if the dog wants to drink on his own.
- Get to the nearest vet hospital!

What should you NOT do?

- Do not use cold water or ice (this actually will constrict the blood vessels and make things worse)
- Do not overcool the dog
- Do not try to force the dog to drink. This can cause it to choke or develop aspiration pneumonia.
- Do not leave your dog alone for any length of time while he is so sick.

I know that heatstroke is something that pretty much everyone has heard about, but it’s such an important topic. As I said before, it tends to happen more in the beginning of the summer when it’s not at the front of everyone’s mind.

Miyo Murtagh, an emergency veterinarian at Friendship Hospital for Animals in Washington, DC, is a huge fan of the Akita breed. Miyo has had 6 Akitas total, and now shares her house with three of them and a cat. Miyo’s current clan of Akitas includes Kajun (8), Saki (5), and Tado (3). The cat is named Wayne Gretsky.

Too Hot for Spot? 505-466-3601
When it comes to buying food for our dogs, most people try to balance the cost of the food and the quality of the food. Dog food is not free and Akitas can go through a bag of food very quickly, so cost is something that does make a difference in deciding the food that we buy our dogs. However, it is important to calculate the total cost of the food rather than just looking at the price on the shelf.

I want to take on the myth that a dog food that uses better ingredients costs significantly more than a low quality food. I did a small case study with three different foods that I am calling A, B, and C. The number of cups per day is based on what the bags recommend feeding a 100-pound dog. The costs of the food for Brand A and Brand C are from a major online retailer of pet supplies. The retailer does not carry Brand B, so that price is from a nationwide discount store that does not carry Brand A or Brand C. I only looked at one retailer for each brand, but the prices should be either average or below average.

**Brand A** markets itself to pet owners who want to do right by their dogs and are willing to pay a little extra. Let us look at the first ingredients in the product to determine the quality of the food. The first eight ingredients: Chicken, brewers rice, whole grain wheat, corn gluten meal, whole grain corn, poultry by-product meal, animal fat preserved with mixed-tocopherols. Real chicken is the first ingredient, but once water is removed, the chicken should move further down the list and quite possibly out of the top eight. Multiple ingredients are from unknown species and/or are waste products. The largest source of animal protein is probably the poultry by-product meal. The fact that a specific species of bird is not named is one red flag; the fact that it is a by-product is a major warning that it is not a quality protein.

**Brand B** is aimed at the consumer on a very tight budget. It is, by far the cheapest per pound of the three brands. It is also synonymous with low quality. The company claims that your dog will absolutely love the taste and that it is not “boring” like other brands. To make it less “boring” they use artificial colors; dogs do not care about the color of their food and artificial colors potentially harm the dog. The first eight ingredients: Corn, Soybean Meal, Beef & Bone Meal, Ground Wheat Flour, Animal Fat (BHA Used As A Preservative), Corn Syrup, Wheat Middlings, Water Sufficient For Processing. Nothing bad can be said about water, but that is the only ingredient of the eight that is not a low quality ingredient; BHA is believed to be carcinogenic, but it might not be the worst ingredient on the list. A food like Brand B is best to be avoided if at all possible. Corn syrup is basically sugar, so that is probably why dogs love it; a lot of people love junk food too.

**Brand C** is marketed as a choice for consumers that want a quality food at a reasonable price. Ingredients four, five, and six are all forms of rice (an example of splitting the same ingredient into multiple parts to make it appear to be not as significant of an ingredient as it really is). However, the first three ingredients are all meat meals, so the three meat meals are in a greater quantity than the three forms of rice. The first eight ingredients: Chicken meal, turkey meal, lamb meal, brown rice, white rice, rice bran, peas, potatoes. All of the ingredients are quality ingredients and there is a higher meat content than either Brand A or Brand B. On various dog food comparison websites, this food never receives a perfect score, but it is considered a quality food. Just is not affordable. The table below calculates the yearly costs for each of the brands. **Brand C** is marketed as a choice for consumers that want a quality food at a reasonable price. Ingredients four, five, and six are all forms of rice (an example of splitting the same ingredient into multiple parts to make it appear to be not as significant of an ingredient as it really is).

The results indicate that not only is Brand C the best of the three for your dog, but it also costs almost exactly the same as Brand B. For $7.68 more over the course of the year, your dog could eat a dog food that is highly thought of rather than junk food that could impact your dog’s long-term health; the savings in vet bills over your dog’s lifetime will probably be more than $7.68 per year, but technically the extremely low quality food did come out as the least expensive. If $7.68 per year is too significant of a price difference then consider this: if an extra 0.44 pounds goes into your dog each day, then an extra 0.44 pounds must come out of your dog each day (or 160.6 pounds per year). A quality food not only potentially saves you on vet bills, but it also reduces the amount that you have to pick up. The number of calories per cup can vary significantly between different dog foods, so even if one food might cost less per pound, it might cost more per calorie. As the case study showed with Brands B and C, Brand B cost significantly less per pound, but the cost per calorie was nearly identical. Therefore, the best way to compare the cost of various dog foods is to look at the actual cost to feed your dog and not simply the cost of the bag. As well, as a comparison between Brand A and Brand C shows, there is no guarantee that spending more money on dog food guarantees a higher quality food.

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<th>Cups/day</th>
<th>Brand A</th>
<th>Brand B</th>
<th>Brand C</th>
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For more information, please check out:

http://www.dogfoodadvisor.com/
Body Language of Fear in Dogs

Slight Cowering

Major Cowering

More Subtle Signs of Fear & Anxiety

Licking Lips
when no food nearby

Panting
when not hot or thirsty

Brow Furrowed, Ears to Side

Moving in Slow Motion
walking slow on floor

Acting Sleepy or Yawning
when they shouldn’t be tired

Hypervigilant
looking in many directions

Suddenly Won’t Eat
but was hungry earlier

Moving Away

Pacing
CHEF HILLARY’S KITCHEN  
by Hillary LaMay

Frosty Paws
Beat the summer heat with this icy treat, back by popular demand!

Ingredients:
- 32 oz. plain yogurt
- 1 mashed banana
- 2 T peanut butter
- 2 T honey

Directions:
Mix all these ingredients in your blender, then dump into ice cube trays, paper cups, or even a kong toy to freeze and serve!

For the ultimate treat, appropriate for desert at a doggy birthday party, follow steps one and two, then take the mostly frozen dog ice cream product of number two and spread it 1" to 1½” thick on wax paper. Freeze for five minutes and then remove dog ice cream from freezer. Next, use a paw shaped cookie cutter to cut a paw shaped “frosty paws”, remove ice cream around edges, and return paw shapes to the freezer to freeze solid.

Tidbit:
Yogurt contains much less lactase than regular milk and the live cultures are great for your dog’s digestive system!

Bow Wow Wow Yipee Yo, Yipee HEY YOU!
Do you have a yummy recipe your pup loves? Is it healthy and easy? We’d love to put it in the next newsletter! E-mail Chef Hillary with your submission: HJLaMay@yahoo.com

Follow ARMAC on Facebook!
Join our groups by searching for: 'Akita Rescue Mid Atlantic Coast' or 'ARMAC Volunteers'

AFFORDABLE AND CONVENIENT SPAY/NEUTER OPTIONS ARE NOW AVAILABLE TO OUR COMMUNITY!

For our Northern VA audience: The Neuter Commuter travels to PW County to transport animal into Washington, D.C., where the spay/neuter procedures are performed. There are no income requirements and anyone can participate, but space is limited to 30 animals each month. Low-cost services, such as rabies vaccinations, will be offered for animals receiving the spay/neuter procedures. Full instructions and details are provided on the application form. All reservations and payments are made in advance and on-line. For more information: www.pwspca.org

For our Maryland audience: SNAP, Inc offers low cost spay/neuter certificates, financial aid to those unable to afford spay/neuter surgeries, and to reduce pet over-population through sterilization. Anyone of any age who needs assistance for spay/neuter surgeries should contact the SNAP Program. For more information: http://community.carr.org/

Frosty Paws

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Available Orphans

Current list of available Akita Rescue (ARMAC, Inc.)
www.akitarescue.org to view more photos

Cora—s/f, dob 2000, Red w/white markings, black mask. Old style girl with lots of life left, LOVES people and wants desperately to be in her own home with NO OTHER PETS. She is currently being kenneled and loves to go out on a lunge line for hiking in the fields. She was picked up by a shelter as a stray and whelped 9 puppies in the shelter. Her puppies found homes, don’t you think she deserves one?

Princess – s/f, dob 2005, fawn with black mask, white markings. Our classic beauty is still waiting for Prince Charming. She is housebroken, good with most dogs, obedient, affectionate. She is responding well to her meds for Pemphigus and just needs a forever home.

Blondie:

Blondie was one of the Petersburg dogs that ARMAC took in 2006. She, her w siblings, parents and grandmother were all taken on humane hold. The parents had temperament issues and were euthanized. The 3 older pups and grandma found homes. Unfortunately Blondie is the victim of a divorce and was returned to ARMAC. She is a small 5 yr old female, who is wonderful with all people, but not small animals. She has not been fence fighting with other dogs at the kennel, so may be able to live with an easy going male. She is crate trained, rides well in a car, walks well on a leash. If you think Blondie would complete your family, please contact us.

Laurie

DOB 1/09 (guesstimate..between two and three years old), is a big, bouncy lady. She weighs about 112. She has become crate trained, rides fairly well in a car, shows no aggression to other dogs, seems good with the people she has met, walks fairly well on leash, and is still being evaluated in her foster home. She was turned into the shelter with a prolapsed uterus. She was so nice they called a local humane society to see if they could get help with her medical care. She was transferred to the humane society where she was spayed and conservative treatment applied to help shrink the remaining tissue. When that treatment did not work, surgery was performed and she has done very well since then. Her stitches come out 6/23 and she will be available for adoption after July 4.
**RAINBOW BRIDGE**

Dear Jodi and Puller,

It is with great sadness but even greater memories that we are writing to you. Just about 11 years ago we adopted Harley from ARMAC and on 31 May 2011 she crossed over the Rainbow Bridge. It was a beautiful day, on a hilly field just north of Leesburg that we ended up standing next to Jodi and her husband watching Akitas being shown during a dog show. We got to talking, and after watching the dogs in the ring and from our discussion, got us interested in adopting an Akita. From there, we made the rounds to the foster homes, including both of yours, as you were fostering a few at that time as well. But it was Harley, being fostered in Alexandria, who caught our eye with her energy and gorgeous markings.

And so our home in Arlington became Harley’s third home in six months, at approximately two years old and all of 70 pounds. After surgery to correct her eyelids and adapting to her new home, Harley quickly grew into her frame and skin, and leveled out at about 95-100 lbs. But it was during the course of the training classes that we really bonded – with Harley and others who had adopted through ARMAC. When we first met Dee Bradley on our first day in an all-Akita class, we asked how long she had been training dogs. Her reply, “I don’t train dogs.” It became clear throughout her classes that she was right, of course; she trained us to handle and care for our dogs. The Akitas would always be themselves. Throughout her life, Harley was very un-Akita like with her mellow nature and high tolerance to ignore other dogs, as Dee often noted. As our family grew, Harley welcomed our first son in her own loving way. Jonathan brought home one of the hats our son had worn in the hospital, and Harley, with so much gentleness and care, took the hat into her mouth, walked over to her bed and placed it in the center. She then lightly curled around the hat on her bed and went to sleep. We had a unique and wonderful girl. Harley welcomed our second son just as lovingly as the first into our home, and with even more patience. Since then Harley had been there to greet our friends, neighbors, relatives, the UPS and mail persons with affection, love and “woooooooooooo”. She made trips with us to Boston, Maine and often to Columbia, MD (where Jonathan’s parents live and which became her second home when we couldn’t take her with us). In closing we’d just like to say thank you. Thank you for exposing us to the Akita breed. Thank you for being the organization that you are and offering your services. And most of all, thank you for bringing Harley into our lives for 11 great years. She will always be loved and dearly missed.

Sincerely,
Marna and Jonathan Gettleman

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**ABOUT ARMAC**

Akita Rescue, Mid-Atlantic Coast, Inc. (ARMAC), is one of the oldest Akita rescue groups in the United States, and is a 501(c)(3) non-profit organization. ARMAC was founded by a small group of concerned Akita owners and has been serving the Mid-Atlantic seaboard since 1984.

Our highest priority is to save and re-home Akitas in area shelters, however, we also address a wide variety of Akita needs such as educating potential owners, referrals, support for Akita owners, and evaluations of dogs in private homes and shelters.

If you can find it in your heart to foster, adopt, donate or volunteer, please visit our website for more information on how you can get involved:

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Janet McMillan (703) 931-852
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Ira Hartwell (301) 261-8463
Club Pet International (703) 257-7598
Club Pet International (703) 759-2578

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Dr. Learman: MapleShade Animal Hospital (703) 670-7668
Morgantown Vet Care, LLC (304) 599-8269
Nebel Street Animal Hospital (301) 230-6595
Norbeck Animal Hospital (301) 924-3616
Palmer Vet Clinic (301) 293-2121