

Adopt A Husky, Inc.

"Saving one dog won't change the world, but surely the world will change for that one dog."



NEWS YOU CAN USE



Come Hike With Me

Woo Woo and Yippie! I just love when our Husky Hike comes around. For those of you who have never attended this spectacular event before it's a tail-waggin and howlin' good time that can't be missed. This is our opportunity to help raise funds for some of the expensive major medical cases we receive (like broken jaws, hips, legs, etc.). We get to pull our owners around a 3 mile trail (shorter if you are just a pup, if your older or your owners don't want to be dragged that far), play games, watch and participate in various demos, get great goody bags with lots of stuff for us to eat and play with (they even put stuff in there for our owners), visit the chuck wagon (of course begging here is a must), visit with exciting vendors, get your nails clipped (personally I'm not in favor of this one but my owners seem to really like it) and best of all sniff hundreds of Siberian Husky butts! There is also an opportunity to walk our foster friends that haven't been adopted yet so they too can find their forever homes soon. Maybe you would like a brother or sister to play with at home...start working on your owners now.

So here's what I need you to do. Both the Minnesota and Illinois/Wisconsin hikes will be held on May 20th so I need you to scratch (or paw) that date on your calendar now before you forget. All of the registration forms, posters and information are available on our website, www.adoptahusky.com. Have your owners sign up today. Also, please beg your owners to help us and volunteer for a shift or two at the hike. There are a ton of jobs that need to be done (descriptions and times are listed on the website) and if each family could sign up for one that will help to move things along more smoothly. Have your owners print out a few posters and hang them in pet stores, vets, doggy daycares, etc. because I just love meeting new friends. So starting begging for those pledges, and get your paws ready (and noses too) for the best husky event ever! I'll sniff you there.

- Breeze, Foster Failure Extraordinaire

Heartworm Preventative

Spring has arrived, has your dog been tested this year for Heartworm? Have you talked to your vet about purchasing and using heartworm

March/April 2006



MARK YOUR CALENDAR

IL EVENTS

April 8, PETCO, Rockford, IL

April 8-9, PETCO, Lake Zurich, IL

May 13, Multi Shelter Pet Expo, Wheaton, IL

May 20, Husky Hike 2006, Wadsworth, IL

MN EVENTS

May 20, Husky Hike 2006, Plymouth, MN

June 3, Canine Carnival, Forest Lake, MN

HAPPY TAILS

Recent fosters that have found their forever homes.

Midnight Blue (MN)
2/1 Ireland (IL) 2/6
Jupiter (IL) 2/18
Galatea (MN) 2/23
Adrianna (WI) 2/25
Gus (MN) 2/25
Solomon (IL) 2/26
Ophelia (IL) 3/4

preventative?

Don't let your dog fall victim to Heartworm! Now is the time to make an appointment with your vet!

[Click here to read an article on Heartworm](#), (reprinted courtesy of www.ThePetCenter.com) and learn why heartworm preventative is a MUST for every dog. (Adobe Acrobat required to view the article.)

Mars (WI) 3/5
Isabela (WI) 3/5
Mercury (IL) 3/11
Bradford (WI) 3/11
Monet (IN) 3/12
Leda (OH) 3/18
Nenanna (IL) 3/22
Bear (MN) 4/2
Snowquest (MN) 4/2

The Working Pack Dog

Siberian Huskies are part of the working class, and one of the many activities your Siberian may enjoy is hiking with you, their favorite human.



Hiking to earn miles towards their Working Pack Dog Title.

Hiking is a great way to give your furry friend some exercise, not to mention it's good exercise for humans too.

You can do something as simple as take a stroll around the neighborhood, to doing a day hike at your local forest preserve or state park. If you prefer a longer hike, then plan a trip and turn it into a vacation that you can enjoy with your four legged family member.

A few helpful tips to remember when planning a hiking trip:

- Talk to your dog's vet about your plans to hike with your dog. This is important before beginning any new physical activity with your dog.
- If you'd like your dog to carry it's own supplies, properly fit your dog for a dog backpack and distribute the weight evenly. Backpacks can be bought from retailers that sell dog sledding equipment, and they will provide you with directions on how to correctly measure your dog for a dog backpack.
- Make sure you and your dog are conditioned to hiking with the maximum amount of weight that you plan to carry, and also condition for the distance you plan to hike. Slowly work up to carrying more weight and to hiking longer distances. Talk to your vet about the weight your dog should carry and the distance your dog should hike before beginning.
- Carry plenty of water for you and your furry friend. It's important for you and your dog to remain hydrated, so allow plenty of water breaks.
- Take small snacks, both canine and human to refuel during breaks.
- Pack a first aid kit that can be used for you and your dog.
- Check temperatures and hike during cooler parts of the day. Early spring, late fall and winter are the best times of the year to hike with your Siberian. Avoid warm days, as it will increase the chance that your dog could overheat.
- Remember Siberians must always be on leash, so get yourself a hands free leash system. A skijoring belt (can be purchased from retailers that sell dog sledding equipment) is a great way to attach your dog to your waist while still giving you the security/containment you need for your Siberian, and you will have the use of both of your hands.
- Laminate an index card and attach it to the outside of your dog's backpack that has your contact information on it, hiking plans/name of the trail you are hiking on, name and phone numbers of emergency contacts in case something does happen that you and your furry friend are separated on the trail.

- Teach your dog the "leave it" and "on by" commands to avoid your dog getting a hold of something it shouldn't.
- Be courteous to other hikers by cleaning up after your dog and following the rules of the trail.
- For longer trips, pack the appropriate supplies and equipment you'll need to have a fun and safe trip.
- Remember to enjoy the scenery and the time you have with your Siberian.

The [Siberian Husky Club of America](#) has a program that Siberians can earn a Working Pack Dog Title. Rescue Siberians can take part in this program by registering for an [Indefinite Listing Privilege](#) with the [American Kennel Club](#). Click here to learn more about the [Working Pack Dog program](#).

For additional information on hiking with your dog:

Visit www.wolfpacks.com : they sell equipment for working dogs, provide information on properly fitting a pack, brief info on training

Read the book [A Guide to Backpacking With Your Dog](#) by Charlene LaBelle

Visit [Traildog Headquarters](#) to join an email list for people that hike with their dogs.

Visit [Uberpest.com](#) : has information on hiking with dogs and has links for additional info on planning trips, training, gear & equipment, trails, etc.

See you on the trail!

- Jen M., IL Volunteer



Foster Spotlight: Simone, IL Foster Looking for a "Furever" Family

Simone, a lovely red and white husky with two blues eyes, is a 10 year old girl who doesn't act her age! In fact, most people think she's only about 2 or 3 when they meet her!

Simone originally came into AAHI as an owner abandonment in a shelter - they said they were just tired of paying to get her out of the shelter when she kept running away and left her there. Unfortunately, she has also shown signs of being mistreated in the past.

But she is a girl who is still just full of life! She loves to play (especially chasing tennis balls and playing tug-of-war), she's good with other dogs and enjoys playing with them. Though she's definitely not cat friendly, she's low key around the house and will lay around like a cat until you're ready to play. Simone would do great as an only dog or can be with other dogs.

Simone was diagnosed with Insulinoma, which is cancer in the pancreas, and had part of her pancreas removed last year. She hasn't had any indication of any problems at all. She's very happy and healthy - very easy to take care of. Other than the surgery, she's had no medical problems to speak of. And while she does require two insulin shots per day (one after each meal), she is so well-trained

(and food motivated), she'll just stand there while you give the shot and wait patiently for her treat!

Simone is totally housebroken and will let you know when she needs to go out. She stays out of the crate at night but is crated when her foster parents are gone. She is crate trained (loves her peanut butter in a Kong!), very food motivated and trainable.

Simone has a very happy personality. She's affectionate and just loves meeting new people. She's very good with children as well and loves to play with them!

She also knows commands like sit, down, and speak. There is lots of personality and spirit in this girl! She had a hard life before she came into the group - her owners left her alone in the yard most of her life and (from her reactions in some situations) didn't treat her very well at all.

Simone is looking for a good home with a very special family.

To learn more about Simone, [click here](#). Interested in adopting a Siberian, please read our [adoption process and fill out our online adoption application](#).

Volunteer Spotlight: Jen A., IL Volunteer



Name: Jen A.

Hometown: Originally Foley MN, now Downers Grove IL, spent time in St. Cloud MN, Duluth MN and Madison WI in between

Family (including pets): Me, husband Mike and Behr. We are expecting our first "people puppy" in Aug. Yes it's a planned litter :) the vet... I mean Dr. assures us there is only one in there. We plan on raising it ourselves, until it's old enough to take care of itself.

Jen and Behr demonstrating a proper down stay.

How did you get involved with AAHI? Behr convinced us that we owed something back to AAHI for all the help they gave us after we adopted him.

Favorite AAHI moment: 1st (for both Mike and I) adopting our dog of course.

2nd reading the adoption story, and knowing I had something to do with saving that dogs life.

My funniest AAHI volunteer moment has to be the home visit when I asked the question, "Are there any other animals that's important for the dog to get along with," and I had a cute little 4 yr old girl look me straight in the eye and say, "goldfish." She was so serious. I said, "I don't think we fish test the dogs, but I'll make note of it on the application." I somehow kept a straight face, but get a smile every time I think about it. That's what makes home visits so much fun, you never know what you'll find!

What are your interests/hobbies outside of Siberian rescue? Running (yes, Behr has trained for 3 marathons with me, but gets mad when they won't let him run the race), also, hiking, skijoring, cross country skiing, carting, dog sledding with Behr's friends (<http://gv-dd.com/info.htm>), teaching Behr

new tricks, organic gardening, astronomy, ham radio, severe weather spotting/storm chasing, singing, reading and crochet. (I had to get a husky, few other breeds could keep up with me.)

If you won the lottery tomorrow, what would you do? Build my dream house and observatory, get my PhD and fund my own research. The house and observatory would of course have to be someplace with lots of trails for running and dog sledding.

Favorite Vacations Destination: Anyplace with Mountains. My last 4 vacations have been to run marathons someplace interesting. It's a great way to see the country!

One thing we don't already know about you: The one thing that nobody would ever guess about me? I was interviewed, and used as a reference for a Harlequin Romance Novel. Behr says if you sponsor him for \$5 for the hike this spring, he'll even tell you which one.... Did I mention he's a very cunning dog ;)

What would you like to say to your fellow AAHI volunteers? Thank You for all your hard work and dedication. I am truly honored to be associated with such a great group of caring individuals.

Thank you Jen, Mike and Behr for volunteering your time to help save Siberian lives!!!!!!

Could this happen to you?

Read one adopters story that shows the importance of updating contact information with Adopt A Husky and how a microchip reunited him and his four legged family member.

March 11, 2006

TODAY IS A GOOD DAY!!! Brie is a blessed dog and I am happy to say home again. As I write this, she is resting peacefully in her bed in her home.

She does seem a bit drained from a week of stress and uncertainty; but I expect that will subside as she returns to her routine. She was lost Monday morning and home again Saturday afternoon - too damn long for her and for me!!!!



Thanks to her microchip, Brie's happy to be reunited with her family.

After spending the afternoon posting "lost dog" notices throughout the neighborhood, at 5:15pm, I received a call from a very excited lady named Sue in Hollywood, FL (12 miles from my house) saying she believed she had my dog and was calling from the Hollywood Animal Clinic where her and Brie were and that Brie was a bit stressed out, but safe. I of coarse drove to the HAC at a very high rate of speed (never felt 80mph go so slowly).

Many tears were shed when I saw my baby safe and no worse for wear on the outside. I could see stress in her eyes, but she did provide me with many recognizing licks to assure me she knew her Daddy had at last come for her.

The story seems (only Brie will know all the details) that Sue saw Brie running loose this afternoon

and doing her best to avoid traffic. Stressed and disoriented, Brie willingly came to Sue's calls and gentle invitation to enter the back of her SUV. Sue then took Brie to HAC where she was checked out and scanned for a microchip. I can't tell you how much I appreciate your practice of microchipping all your adoptees. I will recommend this practice to all my friends and strongly encourage them to chip their dogs ASAP!

How did Brie get 12 miles from home? I can't imagine. Note though, she was not wearing her proper collar and another collar had been put on her.

Someone, had planned on keeping a dog that was not their own - I pity such a person. Thank God for the chip. The Husky's propensity to run when unchecked will always be their weakness; yet in the end was her saving grace - for a person not aware that you must always keep one eye on your Husky will eventually find them gone at the slightest open door or gate. My baby took that opportunity and broke free to seek out a way and a person that would get her home. Home Again Retrieval provided the technology, Adopt A Husky provide the foresight and a wonderful person in Hollywood, FL was the good Samaritan to provide Brie the help when she needed it the most.

Brie and I will both sleep long and well tonight. For what once was taken from me is now returned and I thank God for bringing her back to me safe and sound.

Thank you all for your help and positive thoughts for my baby's safe return.

I am proud to have all of you for friends and caretakers for Brie and I both. She is sleeping so deeply now, and I am sure she knows she is safe and home.

Thanks again!

Mack - AAHI adopter

Attention Adopters: Update your contact information with AAHI

Have you moved and forgotten to update your contact information with Adopt A Husky? Do you have a new phone number or email address? If so, now is the time to update it. Email us at adoptahusky@adoptahusky.com with your name (include maiden name), dog's name (if you have changed your dog's name since adopting, please include old and new name), new address, phone number and email address. Please also include 2 names of alternate contacts and their phone numbers.

Updating your contact information with us is a **MUST**, as this is the only way we will be able to get a hold of you if the unthinkable happens and your dog escapes and is lucky enough to be found. Mack was reunited with his dog, because he updated his contact information with us. Make sure you do the same.

Good Search

Please help Adopt A Husky raise funds for their rescued Siberians, by searching the web with www.goodsearch.com

Good Search is a search engine that gives money to charitable organizations every time a search is done from their website. It's just like using Google, MSN, Yahoo, etc to search the internet. To start searching and to raise money for AAHI, please visit www.goodsearch.com.

The first time you use this website you will need to select which organization you are supporting. We are listed as Adopt A Husky (Salem, WI).

Cafe Press!

AAHI has new items for Siberian lovers everywhere at the Adopt A Husky Cafe Press store! Everything from clothing with various AAHI logos to items such as coasters, clocks, pillows, aprons and much, much more. Proceeds directly benefit Adopt A Husky's rescued Siberians.

To visit the store and start shopping please visit www.cafepress.com/adoptahusky

CONGRATULATIONS TO . . .

- Cynthia & Rainer (IL) on adopting Ireland!
- Donna & Joe (MI) on getting engaged!
- Erik & Amy (IL) on their pregnancy!
- Mike & Jen (IL) on their pregnancy!
- Carrie (MN) on foster failing Snowquest!
- the AAHI mushers on their race season!
- Cheryl (TN) on Salem's (former AAHI rescue) 3rd RE leg for her Rally Excellent title!
- recent AAHI adopters on adding a four legged member to their family!

THANK YOU TO . . .

- all of the volunteers for their time, hard work and dedication to AAHI!
- Breeze, Noel, Nick, Kelly and Jen A. for helping with the March/April newsletter!
- everyone that has volunteered their time to make all of AAHI's recent events so successful!!
- to all of the HV volunteers for kicking out all of the recent home visits, because of you many of AAHI's rescues have found their "forever" family!
- Doc Lew for all you do for AAHI foster dogs!
- www.ThePetCenter.com for giving their permission to use their Heartworm Information.
- Mack for allowing us to share his story with other adopters.
- Chris (IL) for planning our most recent volunteer outing!

To print this newsletter [CLICK HERE](#). You will need Adobe Acrobat Reader.

Important Definitions for Understanding Heartworm

- * **Life Cycle** – The unfolding of one’s life from the beginning to the end including development, sexual maturity, environment, the ability to reproduce, and all that is required for a full cycle of development and maturity.
- * **Host** – Is an animal or plant that harbors or nourishes another organism (parasite).
- * **Parasite** – A plant or animal which lives upon or within another living organism at whose expense it obtains some advantage.
- * **Vector** – A carrier, especially an animal or insect that transfers an infective agent from one host to another.
- * **Biological Vector** is an arthropod vector (in the case of Heartworm the mosquito) in whose body the infecting organism develops or multiplies before becoming infective to the final host.
- * **Microfilaria** – This is the name given to the microscopic, snake-like prelarval stages of the Filarioidea worm in the blood of man and animals and in the tissues of the vector. Microfilaria are the offspring of adult heartworm reproduction.
- * **Larva/larvae**– An independent, motile, sometimes feeding, developmental stage (immature stage) in the life history of a worm or insect. Usually undergoes metamorphosis or a molt to become an adult. Heartworms have several stages of larvae. L1 are the microfilaria in the blood of the infected animal and these are sucked up by the mosquito while it is feeding. It molts from an L1 to L2 and again from an L2 to L3 in the mosquito before it can infect an animal. L3 larvae are expelled from the mosquito’s mouthparts while the mosquito is feeding and burrow through the skin of the host. Inside the host it molts twice, from an L3 to an L4 and then from an L4 to an L5. *The L5 larva will become the adult once it matures.*
- * **Adult worm** – A worm that is sexually mature enough to produce young. The worm may still continue to grow in length and size after reaching sexual maturity. Adult heartworms live in the dog for up to 7 years. In the cat they are thought to live a much shorter life, around 2 years. Adult Heartworms prefer to live floating freely in the blood in the right ventricle of the heart and in the associated pulmonary blood vessels. The right heart ventricle receives the blood returning from the body that is low in oxygen. The right ventricle’s function is to pump this blood through the lungs to absorb oxygen and to deliver the oxygenated blood to the left ventricle. From this chamber blood is pumped back throughout the body. The returning, poorly oxygenated blood flows from the large veins (the Vena Cava Vein) to the right side of the heart, to the lung arteries and capillaries (called the pulmonary arteries). The Heartworm organisms often move back and forth anywhere along this pathway from the Vena Cava to the right ventricle to the pulmonary arteries. The signs an animal shows depends on the number of worms present, the animal’s reaction to their presence, and general health factors in the patient such as age, size, and obesity.
- * **Aberrant migration** or sometimes called **abnormal migration** – This term refers to the larval stage of the worm or other parasite where it wanders or deviates from the usual or normal course. The parasite ends up in locations that are different from where they would normally be present, such as under the skin, in the eye, or stomach. This could occur in any animal but is more common in host animals that are not the preferred host for the parasite. Think of aberrant migration as taking a wrong turn on the wrong road and ending up in an unintended location permanently.
- * **Pre-patent Period** – The time from initial infection with a parasite until the young adults are sexually mature and start to produce either larva or eggs. In the Heartworm, this takes about 7 months in the dog and 9 months or more in the cat.
- * **Patent Heartworm infection** – Heartworm adults are sexually mature and producing microfilaria.
- * **Microfilaremia** – A condition where there are microfilaria circulating in the blood of an infected animal.
- * **Occult Heartworm infection** – The infected animal has sexually mature adult Heartworms present but for some reason no microfilaria are present. The most common reasons are: 1) The worms are sexually mature but the infected animal’s immune system kills and removes the microfilaria as soon as they leave the female worm’s body, leaving none to be detected in a blood sample. 2) There is a single sex Heartworm infection and therefore no microfilaria are produced. 3) Aberrant migration resulted in no microfilaria production even though the worms are sexually mature.
- * **Antigen** – Any substance which under appropriate conditions is capable of inducing the formation of antibodies and of reacting specifically in some detectable manner with the antibodies induced. Basically an antigen is anything the body can recognize as foreign and therefore stimulates its immune system to eliminate what has been recognized. A commonly used Heartworm test detects an antigen produced by the female heartworm that is producing microfilaria.

HEARTWORMS IN THE DOG

THE LIFE CYCLE OF THE HEARTWORM

(If you have not done so, it would be helpful to read the definitions above before reading the Life Cycle information.)

The key to understanding the importance of Heartworm to your pet's health is to understand the life cycle of the worm and the **damage** that results due to its presence in your pet. Once this is understood then it will make sense why it is wiser to prevent a Heartworm infection than wait and treat the worm once it is present.

The fancy name for Heartworm in dogs and cats is *Dirofilaria immitis*. The heartworm goes through a total of four molts to mature into an adult worm. The first two occur inside the mosquito and the next two occur inside the final host. Heartworm disease begins with an infected animal that has circulating microfilaria in its blood. This infected animal is called the source. A mosquito stops by for a meal and inadvertently sucks up a number of circulating microfilaria in the blood. Once inside the mosquito's body, the microfilaria go through two molts over 14 days or longer depending on the environment's temperature. They go through their first two molts and change from an L1 to an L2 and then an L2 to an L3 (third stage of development of the larva). As an L3, they have migrated into the mosquito's salivary glands and during the mosquito's next meal they burrow into the victim through the mosquito's small bite wound.

Once inside an animal (host) where it continues development, the worm takes at least 6 to 7 months to go through the last two molts and to become sexually mature before the infection can be detected by a Heartworm test. The L3 larva goes through its first molt to the L4 within the first 15 days and as early as 2-5 days after infection. The second molt from the L4 to the L5 occurs within the next 2 months. The L5 larva is considered a juvenile adult and works its way through the host's tissues all the way to the heart as early as 70 days after first entering the host. The majority of L5 larvae arrive in the heart by 90 days. They stay here and grow rapidly in length and size. The worm is home and will live here until it dies in 5-7 years.

Sexual maturity is achieved about three months after arrival in the heart. The worms actually continue to grow in size after reaching sexual maturity and the females start to pass microfilaria into the blood. Adult female worms have been known to grow up to 14 inches long and males are generally shorter. Some pets are infected with numerous worms, all traveling from the site of the mosquito bite to their preferred home in the heart. This mass of twisted and intertwined worms can serve as a significant mechanical blockage to the normal flow of blood. Think of a garden hose. If pieces of debris block the hose, pressure builds up due to the obstruction of the flow of water. This is what happens to the heart and blood vessels when more and more worms congregate within the right ventricle. The smaller the host the fewer worms it takes to cause a problem.

Once the worm becomes an adult it will continue to produce young for many years in the dog, and a shorter time in cats and other animals that are not the usual host for the worm. The adults have been documented to live around 7 years in the dog and 2-3 years in the cat. This completes the normal life cycle of the Heartworm.

Another factor to consider is that an animal can act as a source for future additional infesting mosquito bites, so over time unprotected dogs can develop a large number of adult worms in the heart. Also, some animals develop something similar to an allergy to the worms, or to the microfilaria, which results in the Occult Heartworm infections and can cause varying signs similar to allergies. This more elusive kind of infestation occurs most often in the cat. Cats seem to harbor only small numbers of adult worms, the worms are usually males only, microfilaria are rarely found in circulation, and signs of Heartworm infection can present as an allergic condition similar to asthma. It is not uncommon for infected cats to suddenly die from the effects of just a few worms.

SIGNS OF HEARTWORM DISEASE- IN THE DOG

Two major mechanisms result in the signs of Heartworm disease seen in dogs. The first is due to the damage the worms cause to the arteries in the lungs (called the Pulmonary arteries). The second is the mechanical obstruction of blood flow that results from the inflammation and the number of worms present.

When a dog is first infested with Heartworm there are no visible or detectable signs. The infection cannot be detected even with a blood test. The changes in the victim start to occur when the final molt of the Heartworm larvae occurs and the immature L5 larvae arrive in the right ventricle and neighboring blood vessels. The arteries do not do well with worms living inside them. The artery lining is damaged within days, the body responds by inducing inflammation of the artery, called endarteritis, and other inflammation in the area to try to heal the damage. Unfortunately, the worms cause damage at a rate faster than the body can heal. The arteries over time develop certain characteristics that are typical of Heartworm disease, often these changes can be seen on x-rays. The vessels become tortuous and dilated. Blood clots and aneurysms are a common side effect, and complete blockage of small blood vessels can occur. The blood re-routes to non-worm burdened arteries. The result is complete and partial blockage of blood vessels and fluid begins to accumulate around these blood vessels in the lungs. This results in a loss of useful lung tissue and reduces the effective area of the lungs to oxygenate the blood for the body's needs. As a result of the inflammation, blood vessel obstruction, and fluid accumulation, coughing results. The dog or cat displays exercise intolerance, nosebleeds, shortness of breath and a type of pneumonia may occur secondary to the increase in lung inflammation (called pulmonary eosinophilic granulomatosis).

As immature L5 worms continue to arrive and mature in the heart and lungs, the total number of worms at various stages of maturity increase and as they grow in size and number the above conditions take their toll. The host's reactions become more significant and the signs worsen. More and more blood vessels and the surrounding lung tissue are damaged and not useful to the dog and this results in an increased resistance to blood flow through the lungs. This "backup" increases the blood pressure (hypertension) in the right side of the heart and Vena Cava due to the obstruction of blood flow. With accumulation of even more fluid in the lungs, the end result is the signs of actual heart failure. The severity depends on the number of worms present and the dog's reaction to the worms. The failing, weakened, stretched heart muscle results in rhythm abnormalities, fluid accumulation in the lungs (called pulmonary edema) and exercise intolerance.

Over time, the immune system becomes "turned on" at a rate higher than normal. This puts extra proteins (in the form of antibodies) into circulation and they can settle out in the various organs of the body that are delicate in nature such as the eye, kidney, blood vessels, and joints. This causes inflammation, more tissue damage, and pain.

One of the most severe signs of heartworm is called **Caval Syndrome** or *Vena Cava Syndrome*. This is seen when there are large numbers of adult worms (usually around 100 or more) in the heart. There is almost complete blockage of all blood flow. Many times there will be no signs of heart disease prior to the animal's collapse. When fainting and collapse does occur it is accompanied by severe shock, red blood cell destruction, and often death within 1-2 days. Sometimes the only chance for survival in these cases is for the veterinarian to surgically remove the worms from the heart through the jugular vein. If enough worms can be removed to re-establish sufficient blood flow, there is some chance of survival.

DIAGNOSIS OF HEARTWORM IN THE DOG

Any patient presented because of the suspicion of Heartworm Disease will have a thorough medical history taken, a complete physical exam performed, x-rays of the chest taken and routine blood chemistry tests done to evaluate the entire patient. The definitive diagnosis (proof of diagnosis) is usually made through the use of a **Heartworm antigen test**. Whole blood is drawn from the dog, stabilized so it will not clot, and tested for the presence of a protein shed by the female worm as she passes microfilaria. This test is very reliable and will detect worm burdens of 2-3 worms or higher.

Another common test that can be used in conjunction with the antigen test is the Knotts test or Modified Knotts test. This is where whole blood is drawn and treated to cause the blood cells to break open. Then the sample is spun in a centrifuge, the top portion is poured off, and the bottom sediment is looked at under the microscope for the presence of microfilaria.

Usually once a diagnosis is made via a blood test, then X-rays, CBC (complete blood count), Chemistry profile (evaluates the function of the body's organs), and Urinalysis are evaluated to determine the impact of the Heartworm infection on the dog's health. Animals displaying signs of heart disease side effects may have a complete cardiac evaluation, or evaluation of any other area of the body that is indicated by the initial test results.

Canine patients will be staged for Heartworm Disease as part of the evaluation. This helps the practitioner decide which method of treatment would be best for the elimination of the Heartworms:

Stage I Lowest risk... young healthy dogs with minimal Heartworm disease evident on X-rays and all other tests are normal.

Stage II Moderately affected dogs... some coughing is noticed, some difficulty breathing, changes are seen on X-rays, and blood work may reveal some kidney and/or liver damage.

Stage III Severely affected dogs... the patient has weight loss, coughing, difficulty breathing, more damage visible on x-rays, and blood tests shows kidney and/or liver damage.

Stage IV Vena Cava Syndrome or Caval Syndrome... the dog is collapsing in shock, all of the above abnormalities are more intense and the dog is dying. They are initially treated with surgical jugular removal of some worms if possible. There is no guarantee this treatment will be successful and many patients with Caval Syndrome die in spite of attempts to treat.

HEARTWORM TREATMENT - DOGS

The bottom line: Heartworm is a significant disease in dogs and cats. The treatment involves managing the heart, vascular and systemic disease present as well as eliminating the parasites.

The goal of treatment is to eliminate the worms one way or another so the animal's body can rebuild itself and return to the best possible post-infection health. This sounds simple but it can be very complicated depending upon the number of worms present, the dog's reaction to their presence, the patient's general state of health, handling the side effects from the medication and the effects on the patient of the dead worms within the circulatory system.

By now, it is clear that the treatment varies from dog to dog. Each animal's personal condition is evaluated and the treatment protocol tailored to best effect a full recovery with the least side effects. Therefore, this discussion of heartworm treatment will be very general regarding the medications used and the more common side effects. **The specific treatment protocol for your pet will be left up to your veterinarian since there is no way to predict how each animal will react to Heartworm treatment.**

Treatment involves two basic areas:

- 1st) Patient evaluation and stabilizing for treatment procedure.
- 2nd) Elimination of all forms (adult, larvae, and microfilaria) of the Heartworm parasite.

Patient evaluation and stabilization

This involves X-rays, blood tests, heart evaluation, and any other tests indicated to completely evaluate the pet. The veterinarian evaluates the over-all health of the animal, then determines how to best proceed with treatment. Part of this evaluation is staging the severity of the Heartworm Disease in the dog. Some animals need to have certain conditions stabilized before Heartworm treatment can proceed. Those in third stage Heartworm disease may require deliberation to decide if it is best to try surgical removal of some worms through the jugular vein before any other steps of parasite elimination are considered.

Elimination of the Heartworm Parasite

This is a two-step process. The adult worms and the microfilaria are eliminated separately. No one medication kills both. The adults are treated first then a different treatment is used to kill the microfilaria and migrating larvae.

The most serious side effects usually occur with the treatment of the adult worms. As the worms die they lodge in the lung arteries and block even more blood vessels than before treatment. Besides the usual inflammation caused by the presence of the worms, the inflammation is amplified due to the decomposing worms within the blood vessels. This worm destruction releases foreign substances into the dog's circulation as the worms break down and are eliminated from the dog by the immune systems. A large amount of inflammation and swelling generally occurs during this period.

Before treatment begins, it is very important to ask your veterinarian any questions you may have about the treatment and what to expect. Some veterinarians will keep the dogs in the hospital during treatments to watch them closely. Your Doctor will make the decisions on an individual basis regarding what would be best for your dog.

The prescription medications used to treat the adult Heartworms are called **adulticides**. The two adulticides used most commonly are derivatives of arsenic. It is not known exactly how these medications work to kill the worms. We just know they do work.

NOTE: New medications may be available at any time; this listing of treatments may not be complete!

The first one is **thiacetarsamide (Caparsolate)**. It has been used for at least half a century and is effective but can be toxic to the liver, kidneys, or cause severe irritation if the solution gets outside of the vein. The second medication is called **Melarsomine dihydrochloride (Immiticide)**. With fewer side effects than thiacetarsamide, it is also an arsenic derivative and is administered by a careful intramuscular injection. It appears to be as effective and possibly more so in dogs than thiacetarsamide. It has potential for significant side effects and close veterinary monitoring is very important.

Side effects from the medication can be immediate or take up to 2 weeks to appear. One aspect of the side effects are due to the destruction of the adult worms and the resulting blood vessel blockage and inflammation. No matter what adulticide is used, it is very important to keep your dog very quiet and follow all of your Doctor's instructions. If you have any doubt about what to do or what is going on, do not hesitate to call your veterinarian ASAP.

As the inflammation peaks after adulticide treatment at 5-10 days, sometimes anti-inflammatory medications are used. The veterinarian will determine at the time what to use after evaluating the severity of the reaction. Some anti-inflammatory medications can reduce the effectiveness of the adulticide. Therefore it is a judgment call regarding what is best for the pet's health at the time.

Some patients even require a second set of adulticide treatments since the very immature L5 Heartworms and young female adults are more resistant to the treatment.

After the adulticide treatment and its side effects are resolved (usually at about 1 month post treatment), the microfilaria are then eliminated with one or another of two common Heartworm preventatives, Ivermectin (HeartGard) or Mibemycin oxime (Interceptor). This will be done approximately one month after the adulticide treatment, depending on your veterinarian's final decision regarding when it can be done.

Approximately four months after adulticide therapy, the dogs are retested for the presence of Heartworm. This will determine if a second treatment will be needed.

In Summary

Once the Heartworm is eliminated from the dog, then preventative medication is continued as prescribed by your veterinarian. Each dog's response to Heartworm treatment is different so the information presented here in ThePetCenter.com is a general guide to help you understand the basics of Heartworm eradication. Your veterinarian will communicate more of the specific information as it relates to your pet's particular circumstances and your pet's probable response to treatment. Our goal is to help you better understand that the process is involved, the medication alone can be toxic, and every animal reacts differently.

HEARTWORM PREVENTION IN THE DOG

Preventing Heartworm Disease is definitely easier on the dog and is now much simpler than it used to be. The most common preventatives are given once a month by the pet's caretaker. Preventatives kill the immature Heartworm larvae before they molt to the L5 stage. As long as they are given every month, they are very effective in preventing Heartworm infection and subsequent development of Heartworm Disease.

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