Derby City Dog Rescue

...saving hearts one paw at a time.

FOSTER/ADOPTER HANDBOOK

Special thanks to Fairleigh Pet Center for the use of content.

DISCLAIMERS

The information in this handbook is intended to assist new fosters and adopters with basic information and resources on canine health, behavior, and training techniques. **This handbook is not intended as a comprehensive or complete guide to dog medical care or training.** No guarantee is made that information given in this handbook will rectify or solve any specific issue.

No portion of this handbook is a substitute for professional veterinary care or consultation. If your dog is showing signs of illness, injury or trauma, please seek appropriate medical care. **If your foster dog needs medical care, please contact Derby City Dog Rescue (DCDR) immediately.** More information on DCDR contacts, approved veterinarians, and procedures for medical emergencies, as well as non-emergency veterinary care, is given in Section 2 of this handbook.

No portion of this book is a substitute for consultation or classes with a professional canine behaviorist or trainer. Please note there are multiple theories of dogs' behavior, dogs' cognitive abilities, and appropriate and effective training methods. There may be portions of this handbook that can be debated in regards to those theories and methods, and DCDR encourages adopters and fosters to seek further information and resources. This handbook serves only as a "primer" to deal with certain basic puppy and dog problem behaviors. DCDR encourages all adopters to take a "basic manners" course (or "puppy class") with their new dog. DCDR will provide a list of recommended trainers and facilities on request. **If your foster dog has any problem behaviors or needs professional training, contact DCDR. DCDR will make appropriate arrangements for consultations and/or training classes with a trainer that uses DCDR-approved methods. Please do not take your DCDR foster dog to any behaviorist or trainer without first consulting with DCDR.**

Thank you for making the decision to foster or adopt!

Welcome to the Derby City Dog Rescue family!

Derby City Dog Rescue (DCDR) was founded in early 2011 by a group of friends who bonded over our love of dogs and a desire to help shelter animals. We are a small, non-profit group of volunteers who work together to achieve a common goal of saving hearts, one paw at a time.

Our initial aim was to bridge the gap between local animal shelters in Louisville, Kentucky, and other rescues outside the state to pursue placement of local dogs in urgent situations in our area. To ease some of the difficulties that can arise when dealing with a government shelter, we provide quality photos of the animals, quality communication between the rescue and shelter, temporary foster (in some cases), pulling assistance, and help with getting dogs to their transports.

DCDR also serves as a small rescue within the community, pulling dogs from our local shelters and placing them into foster homes and handling adoptions. Most of our foster dogs are rescued from the shelters when they are out of time or in need of treatment. They live in fosters' homes, with their own dogs, learning the basics of house life and receiving any veterinary treatment they may require.

Within the community, DCDR assists our local animal shelter by taking better photos of animals in need and marketing them through Facebook for rescue, foster, or adoption. We are a founding member, along with Slugger City Bully Buddies and Tails Pet Photography, of the Rescue Me! Pet Photography project. Rescue Me! connects professional photographers and rescues/shelters to produce professional photographs of their animals for marketing across Facebook and Petfinder—as well as in area businesses.

DCDR Board Member Contacts:

Shannon Riley - 502-727-7088
Christy Duff - 502-931-7076
Jeff Duff - 502-322-6681
Melissa Kleber- 502-592-3343
Melissa Miller - 502-291-4351
Carlyn Nugent - 502-526-2128
Todd Bybee - 502-618-6215

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Frequently Asked Foster Questions

What is fostering?
Foster parents provide temporary homes for dogs prior to adoption. Providing foster care is a wonderful way to contribute to saving homeless pets. DCDR is in need of temporary and long-term fosters. Some dogs are pulled from shelters and only need a small amount of time in a foster home until another rescue has an opening and the dog can be transported to them. Other dogs need long-term foster homes where they can learn, grow, and (sometimes) heal until they find their forever homes.

Why do animals need foster care?
There are several possible reasons:

- Foster care can help save a dog's life when a shelter is full.
- Newborn and very young dogs might need to be bottle-fed or receive more care than a shelter can provide.
- Some dogs need time to recover from an illness or injury before adoption.

Finally, long-term shelter residents often find the shelter environment stressful and can become depressed, anxious, or fearful. Moving animals into private homes allows them to relax and blossom, as well as learn how to become good "house dogs" through training and socialization, increasing the chances for adoption. In medical cases, fostering allows the animal to receive treatment or recover in a quiet, stress-free environment. With fostering, everyone benefits: The foster gets to spend time with a special dog; the kennel gains space, which will most likely save another dog's life; the foster dog gets a second chance at becoming a cherished pet; and the adoptive owners get a dog that is better adapted to home life and, therefore, has a better chance of remaining in the new home permanently.

How much time will it take?
The specific needs of the dog will determine how much time is involved. Newborn and orphaned puppies require round-the-clock feedings. Older puppies require housetraining, socialization, and behavior training for puppy issues such as jumping, nipping and chewing. Frightened, abused and un-socialized dogs need extra patience and training time. Older dogs might require additional medications, vet visits, and patience.

What skills are needed?
It's best to have some knowledge of companion dog behavior and health, but DCDR will help you learn anything you need to know to become a wonderful foster. Some dogs in need of foster care require a little extra help or training to overcome past experiences. Dogs often benefit from obedience training. We have included multiple basic training handouts in this

packet that will help you learn some techniques so that you can play an active role in preparing your foster dog for a new home.

What about my own pets?
It is very important that your pets are up to date on **vaccines**, including Rabies, Distemper/Parvo combination, and Bordetella (aka "Kennel Cough"). Your foster dog might have been in a shelter or around other dogs that could have been exposed to viruses that could be passed to your dogs if they are not current on vaccines.

It is also important that your dogs are on **monthly, veterinarian approved, heartworm and flea preventative.** Your foster dog might have been exposed to fleas, ticks, intestinal parasites, and/or mites. DCDR screens our foster dogs for all of the above but, depending on when the dog is exposed, a screening may not reveal the parasite before placement in the home. Keeping your dogs on their monthly preventatives will help decrease their risk of exposure.

You will also want to consider how your current pets will adjust to having a foster dog in your household. Some animals do very well and will be a big help in socializing your foster dog and other animals might have a harder time adjusting. You are the best judge of your pet's personality.

Will I have to find a home for my foster myself?
No, DCDR will take full responsibility in finding your foster a forever home. We do ask that you bring your foster to as many adoption events as you can. We will let you know when an event is taking place and provide you with an "adopt me" bandana/visor to help highlight the dog for potential adopters.

You can help by telling friends, family, and co-workers about your foster dog. You can also promote your foster dog by posting flyers, sending emails, posting his or her picture on Facebook for your friends to see, and even just walking him/her dog through your neighborhood and local parks.

The most effective thing you can do to help your foster's chances of adoption is to do your best to socialize him/her and teach him/her good manners. This will make your foster more appealing to potential adopters and get him/her prepared for a new home.

How long are dogs in foster homes?
It ultimately depends on the dog and the situation. It may be anywhere from a few days or a few months. Some dogs are adopted quickly and others take more time and patience to find the right home. Some dogs may also be recovering from injury or illness and need a longer stay to fully recover before moving into a permanent home. At DCDR, we strive to find the best fit for each of our dogs. We want to ensure that they never end up homeless again.

Can I adopt my foster dog?
ABSOLUTELY! As long as you are approved by DCDR, you can make your foster dog a permanent family member.

What is the process of adoption?

- Potential adopters must first submit an application for adoption. They can do this at www.derbycitydogrescue.org.
- DCDR will contact the potential adopter to discuss certain aspects of adopting a dog.
- DCDR requires a vet reference and 3 personal references from people that live outside of the home.
- DCDR also requires a home visit. At the home visit, we evaluate the pets currently in the home, fencing, and the overall home environment. We want to make sure that our dog is the right fit for the potential adopter and vice versa.
- The meet-and-greet will be scheduled. The potential adopter, all family members in the household, and their current pets will need to be present to ensure everyone is on board and the pets will get along. We will sometimes combine the home visit and meet-and-greet into one visit and will leave the dog in its new home and collect the fee on the spot.
- Once approved, the adopter will be contacted and adoption fees will be processed. The usual adoption fee for any DCDR dog is $150-200. If the foster parent decides to adopt their foster dog, their adoption fee will be equal to the amount of money DCDR has spent on the dog, not to be less than $50 but not to exceed $200.
- The foster dog will go to its new forever home. ☺

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Foster Requirements

A foster dog belongs to Derby City Dog Rescue, and any decisions regarding the dog and the dog's future will be made by Derby City Dog Rescue.

The foster parent -

- Provides adequate food, shelter, exercise, grooming, monthly veterinarian approved preventatives (flea, heartworm and/or tick), transport to authorized DCDR veterinary care, and attention for the foster pet;
- Agrees to a home visit by DCDR at any time;
- Agrees to return the foster to DCDR if the foster parent cannot keep the pet for any reason or at DCDR's request;
- Agrees to attend scheduled "adoption day" events with the foster dog whenever possible;
- Acknowledges that DCDR cannot guarantee any foster animals against parasites, diseases, or destructive behavior;
- Will not hold DCDR responsible, nor seek any compensation for damages, medical fees or other liabilities incurred by the foster;
- Understands that any bites or injuries caused by the foster are to be reported immediately to DCDR;
- Agrees to be personally responsible for the humane housing and care of the foster;
- Agrees that all DCDR foster dogs should remain on a leash or tie-out at all times when outside unless in a secure fenced in area.
- Understands and accepts that it is DCDR's prerogative to decide which home is most appropriate for the individual dog and, therefore will not take issue with the decision.

DCDR will be hosting regular Foster Orientation sessions. It is strongly recommended that you attend at least one session. These sessions are provided to help you feel comfortable fostering and supply you with information needed to become a successful foster parent. It will also be a great opportunity to meet other foster parents and exchange tips and ideas. We will release dates, times and locations of the foster sessions through postings on Facebook and email distribution, as well as at the "Upcoming Events" page at www.derbycitydogrescue.org.

There is a Derby City Dog Rescue Foster/Adopter Forum on Facebook. If you have not been invited to join this group, please let us know so that we can invite you. The Forum was started so that you always have someone to contact with general questions about your foster dog. Please use this to inquire about meet-and-greets, events, or general care questions such as crate training, behavioral issues, or even minor illnesses. If there is a **true emergency** with your foster dog, please contact DCDR by phone. We cannot guarantee that the Forum is monitored closely enough to respond to an emergency in a timely manner.

Preparing for your DCDR Dog

After being approved, we suggest you prepare yourself, your family, and your home for a new canine companion.

Be physically and mentally prepared

- *If you are part of a family, fostering/adopting a dog will be a team effort.* Some adults and children might have a hard time adjusting to a new dog and may also have a difficult time "giving up" a foster dog when it is time for them to go to their new home. Make sure that everyone is prepared for the new dog and, if fostering, that everyone understands what fostering means.
- *Be realistic about your time commitment.* Don't over extend yourself. Puppies and young dogs and ill or injured dogs require more time when fostering. If you are just starting out or worried about your time commitment, please let DCDR know so that we can help find the perfect foster dog for you. Many believe that a shelter is a terrible place and any home environment would be better for a dog. While the shelter can be stressful, so can a home if it is not prepared.
- *Be prepared that the dog might need some basic house training and obedience training*. We have supplied multiple handouts to help you with your training needs. The orientation session and Facebook Foster/Adoption Forum are other great avenues to help with any training needs. Please review all training and behavior handouts so that you get started off right with your dog. We want this to be a wonderful experience for you, your family, and your foster or adopted dog.

Where to keep your dog

Planning where you will keep the dog before you bring him/her home will make the process much easier for everyone.

- When you bring the dog home, you will want to confine the dog in a single room, such as a kitchen or living area so that the dog can get used to you, your current pets, and your home environment. You can use a baby gate to block off other areas of your house during the first part of the dog's stay.
- In the beginning, the dog might have accidents in the house due to stress or adjusting to your routine. If the dog is not housetrained, confining it to a smaller area of your house where you can closely monitor will help get off to a right start.
- Have a crate ready for when you are away from your home. Crate training is the best method to housetrain a dog and also provide the dog with a safe place to stay out of trouble while you are away. Please review the behavior and training section in this handbook to help with crate training, house training, and behavior issues such as destructive chewing.

- If the dog is coming straight out of a shelter, we strongly recommend that you keep the dog separated from your pets for a few days (up to a week). There are viruses that a shelter dog might have been exposed to that have a longer incubation period than others. Even though the dog has been vaccinated and evaluated by a veterinarian and the DCDR members, he/she might still be incubating an illness. We want to do everything that we can to prevent your dogs from becoming ill.
- We also strongly recommend that you pick up the dogs feces as soon as it defecates to prevent your pets from being exposed to intestinal parasites. Please review the medical section of this handbook for information on illnesses that shelter dogs may have been exposed to, vaccinations, and intestinal parasites that shelter dogs might be carrying.

The "Do"s

- Do keep the dog indoors in a location with a crate available.
- Do keep the dog in a warm/cool (depending on season) and dry location.
- Do keep the dog on a leash or tie-out at all times when outdoors unless you have a secured, fenced yard. When in a secured yard, you must monitor your dog closely. It is very common for shelter dogs to try and escape, so always supervise the dog when outdoors.
- Do keep the dog indoors in a kitchen, bathroom, mudroom, or laundry room when they are not being closely monitored. You can use baby gates to help keep the dog in certain locations of the house. It is very important for the dog to be around people and to be properly socialized, but it is also important for your dog to be in a safe and secured location in your house so that he/she stays out of trouble. They are very curious and can quickly get themselves into trouble.

The "Don't"s

- We recommend that you socialize the DCDR dog with other dogs but **do not** place her/him around other strange dogs that you do not know. We might not know a lot about the DCDR dog's history and want to prevent your foster dog from getting into an altercation with a strange dog.
- Never let the dog off leash unless you are in a secure, fully fenced in location; he/she might not have any off leash training and could get lost, hit by a car, or get into an altercation with another dog.
- Do not let the DCDR foster dog stay with anyone else unless you approve that through DCDR. Contact us if you are planning on going out-of-town or need your dog to stay elsewhere for any other reason. A volunteer might be able to help you, or we can suggest an approved boarding facility for your foster dog while you are away. If you have a family member or friend willing to watch your foster dog, this must be approved through DCDR first.

How to dog-proof a room

Walk into the room in which you are going to confine the DCDR dog and ask yourself:

1. Is there room for a dog crate (your foster's safe place)?
2. Is there quick and safe access to outside for quick potty breaks?
3. Is there anything that can be chewed or destroyed such as drapes, couch, rugs, or keepsakes?
4. Are there exposed electrical cords within reach? Check behind easily moved furniture such as a desk or end table.

5. Is there any place the dog can hide? Will you able to get the dog out, if hidden?
6. Are there coffee tables or other stands with objects that can easily be knocked off by a happy, wagging tail?
7. Are there plants in the room? If so, are the plants toxic? Check our toxic plant list in the medical section of this handbook.
8. Where will I set up the crate once hazardous objects are removed? The crate should be in a well-lit, quiet, and comfortable area. The crate should not be in a dark, hidden room or area.
9. Is there a blanket or crate pad in the crate? Your foster dog will need comfortable bedding in his crate.

Transporting

The safest way to travel with the DCDR dog is to put it in a secure crate in the back of a car, wagon, or SUV. If that is not an option, you can purchase a seat belt harness that will keep your dog localized while in the car. Some dogs are very excited or nervous in the car. If loose in the car, they could obstruct your view or get in the way of your driving. They could also be seriously injured if you have to brake quickly or are involved in a car accident. NEVER allow a dog to ride in an open truck bed, even in a crate.

Supply List

- Food and water bowls
- Quality collars and leashes
- High-quality dog or puppy food. We recommend feeding a mostly dry diet but if the dog is nervous in the beginning or recovering from illness or injury, you might need canned food to encourage a healthy appetite.
- Chew toys. We recommend quality toys like the Kong brand toys. Some dogs, especially puppies, have a tendency to destroy toys and ingest pieces. This can pose a serious health risk if your foster dog develops an intestinal blockage due to ingesting parts of a toy. Rawhides and certain bones are an option but you have to pick these carefully and always monitor the dog when chewing. Hard bones are now posing a serious health risk with dogs. The FDA has recently released a statement about these health risks. Owners and fosters should use caution when selecting appropriate bones for their dogs. You can read more about this warning later in this handbook.
- Crate or kennel. We recommend that you crate your foster dog while you are away to keep him/her safe and out of trouble and also to help with house training. The crate should ***never*** be used as punishment. Please review the multiple training and behavior handouts in this handbook.
- Dog beds, blankets, or towels to give your foster dog a comfortable place to sleep.

Becoming a Foster Home

How you can save a life by giving a temporary home to a shelter animal.

By Faith Maloney

Being a foster home is not easy. Taking animals into your own home, loving them, and then letting them go requires a very particular kind of ability.

Fostering isn't for everyone, but for Chaz and Jean Blackmore it's the only way to go. They decided that, along with their own dogs Jaspar and Cody, they would provide a temporary home to one foster dog at a time.

"The dogs do everything with us," says Chaz. "They go jogging with us and they go for car trips. In the case of Tika, a black lab mix, she went with us on our honeymoon. She got to meet moose, deer, and mountain goats, and she found her new family while we were in Aspen. Her new people were vacationing there at the same time as us. They really connected with Tika, so when we got home, we arranged for her permanent adoption.

Every day, thousands of dogs just like Tika don't ever make it into a new home simply because there is no room in shelters and humane societies to take them all. Foster homes offer a vital alternative to this sad situation.

Barbara Conrad of Salt Lake City has been a foster mom to hundreds of cats and dogs over the years. She volunteers her services for the Humane Society of Utah. This year, Best Friends honored her as Person of the Year at our awards ceremony here in our home state of Utah.

Barbara, a modest woman, shrugs off her achievements, pointing out that there are many other people like her who enable precious lives to be saved.

"Fostering is very important to each animal, but especially to cats," said Barbara. "They get so depressed in a shelter, and consequently often get really sick. They seem to be more sensitive than dogs. And their anxiety, known as "cage depression," can make things worse for them because they then don't look good to potential adopters.

"Being able to have them spend time in a foster home before going up for permanent adoption can mean the difference between life and death for a lot of cats."

In California, Linda and her husband Mike provide a foster home for animals from their local rescue group. In three years, they've placed about 150 animals.

> "When they're adopted, he pouts for days. Then he's delighted when the next foster arrives and we go through it all again!"

Chaz and Jean at home with their foster pals

But, however good the new homes, there's always a potential problem when you're fostering an animal. In Linda and Mike's case, Mike falls in love with them all and never wants to let them go!

"With every animal that comes through the door, he begs me to keep it and add it to our own brood. If it's with us for longer than two weeks, he gets really upset when I find it a home. He pouts for days, even when I tell him how happy our own cats are when the interloper is finally gone. Then he's delighted when the next foster arrives and we go through it all again!"

While many people can't let go, others are reluctant to foster in the first place, thinking that it is somehow unfair to take in a dog or cat, establish a bond, and then allow the animal to be adopted out into another home. Isn't that a second abandonment?

I used to feel like that myself. But once I saw how being in a foster home helped a dog or cat find a quality permanent placement, I changed my mind. Taking a stray or frightened animal and showing him or her that people can be kind, that food is available, and that there is a warm place to sleep, creates a marvelous bridge to a new home. And those of us who provide foster space know that there is never a shortage of animals that need this preparation time before finding their own people.

Letting them go isn't easy. Often, a foster home turns into a permanent home. This is why all rescue, shelter, and humane societies are always on the hunt for new foster homes.

Are you ready to give fostering a try? Then contact your local humane society or rescue group and talk to them about it. Maybe there will be some training involved, some papers to sign, and then it's back home with a new temporary family member.

If we are going to make a difference in the number of animals killed each year because there is not enough space to house them, then becoming a foster parent is a priority. It is important, valuable work and, best of all, it saves lives.

You can download the Best Friends manual about foster care from the No More Homeless Pets section of the Best Friends Web site at www.bestfriends.org. Or write to Best Friends for a copy. (Please send a large self-addressed, stamped envelope.)

Reprinted from BEST FRIENDS MAGAZINE January/February 2001

November 3, 2009

Introducing a Dog to Other Pets

The Humane Society of the United States

From "the leader of the pack" to "the top dog," plenty of simplistic metaphors come from the canine world. But relationships between canines can be pretty complex, beginning with the very first meeting.

Like most animals who live in groups, dogs establish their own social structure, sometimes called a dominance hierarchy. This dominance hierarchy serves to maintain order, reduce conflict and promote cooperation among pack members.

Dogs also establish territories, which they may defend against intruders or rivals. Of course, dogs' social and territorial nature affects their behavior whenever a new dog is introduced to the household.

Choose a neutral location

Introduce the dogs in a neutral location so that your resident dog is less likely to view the newcomer as a territorial intruder. Each dog should be handled by a separate person. With both dogs on leashes, begin the introductions in an area unfamiliar to each, such as a park or a neighbor's yard. If you frequently walk your resident dog in a nearby park, she may view that area as her territory, too, so choose a less familiar site. If you are adopting your dog from an animal shelter, you might even bring your resident dog to the local shelter and introduce the two there (some shelters may even require that a new dog meets the resident dog before the adoption is complete).

Use positive reinforcement

From the first meeting, help both dogs experience "good things" when they're in each other's presence. Let them sniff each other briefly, which is normal canine greeting behavior. As they do, talk to them in a happy, friendly tone of voice; never use a

threatening tone. (Don't allow them to investigate and sniff each other for too long, however, as this may escalate to an aggressive response.)

After a short time, get the attention of both dogs and give each a treat in return for obeying a simple command, such as "sit" or "stay." Take the dogs for a walk and let them sniff and investigate each other at intervals. Continue with the "happy talk," food rewards, and simple commands.

Be aware of body postures

One body posture that indicates things are going well is a "play-bow." One dog will crouch with her front legs on the ground and her hind end in the air. This is an invitation to play, and a posture that usually elicits friendly behavior from the other dog. Watch carefully for body postures that indicate an aggressive response, including hair standing up on one dog's back, teeth-baring, deep growls, a stiff-legged gait, or a prolonged stare. If you see such postures, interrupt the interaction immediately by calmly getting each dog interested in something else.

For example, both handlers can call their dogs to them, have them sit or lie down, and reward each with a treat. The dogs' interest in the treats should prevent the situation from escalating into aggression. Try letting the dogs interact again, but this time for a shorter time period and/or at a greater distance from each other.

Taking the dogs home

When the dogs seem to be tolerating each other's presence without fearful or aggressive responses, and the investigative greeting behaviors have tapered off, you can take them home. Whether you choose to take them in the same vehicle will depend on their size, how well they ride in the car, how trouble-free the initial introduction has been, and how many dogs are involved.

If you have more than one resident dog in your household, it may be best to introduce the resident dogs to the new dog one at a time. Two or more resident dogs may have a tendency to "gang up" on the newcomer.

It is important to support the dominant dog in your household, even if that turns out to be the newcomer. This may mean, for example, allowing the dominant dog to claim a special toy or favored sleeping spot as his own. Trying to impose your preference for which dog should be dominant can confuse the dogs and create further problems.

Introducing puppies to adult dogs

Puppies usually pester adult dogs unmercifully. Before the age of four months, puppies may not recognize subtle body postures from adult dogs signaling that they've had enough. Well-socialized adult dogs with good temperaments may set limits with puppies with a warning growl or snarl. These behaviors are normal and should be allowed.

Adult dogs who aren't well-socialized, or who have a history of fighting with other dogs, may attempt to set limits with more aggressive behaviors, such as biting, which could

harm the puppy. For this reason, a puppy shouldn't be left alone with an adult dog until you're confident the puppy isn't in any danger. Be sure to give the adult dog some quiet time away from the puppy, and some extra individual attention as well.

When to get help

If the introductions don't go smoothly, contact a professional animal behaviorist immediately. Dogs can be severely injured in fights, and the longer the problem continues, the harder it can be to resolve. Punishment won't work, and could make things worse. Fortunately, most conflicts between dogs in the same family can be resolved with professional guidance.

The First Week with a DCDR Dog

Introduction

Derby City Dog Rescue prefers for your dog(s) to meet the DCDR dog away from your home before fostering. This is not always possible, but is recommended. Even if your dog has many different canine playmates, you should still bring it to meet the potential foster/adoption. Dogs are like people and sometimes a dog might not like another dog for no apparent reason.

What to do once you are home with the DCDR dog

- Do be alert and make the introduction/reintroduction gradually and calmly. Even if they got along great at the meet and greet, your dog may be territorial at home.
- If possible, go for a walk around your neighborhood with the dogs and multiple handlers (one dog per person is best; but, if that is not possible one person should walk the foster and another should walk your current dogs). Walk the dogs side by side on leashes and allow them to sniff one another and become familiar with one another.
- Do give your own dog(s) LOTS of love and praise.
- Do leave leashes on all the dogs when you are home so that you can get immediate control if needed. You will probably only need to do this for a short time during the initial adjustment period.
- Talk normally letting the dogs know that you are fine, they are fine, and everything is fine!
- Be patient and go slowly with the DCDR dog as they may have been through a stressful, abusive, or neglectful situation.
- Don't leave the DCDR dog unattended with your resident dog(s). Even if they get along when you are there, you should separate them when you are not home. After the initial adjustment period, this may no longer be necessary. Be sure to always remove toys, food, and chews when unsupervised and make sure there is adequate bedding for everyone.

Some common mistakes

- Holding the leash too tightly (i.e., short-leashing or resisting the dog's pull) may cause a dog to react defensively.
- Leaving toys and chews around the house can cause guarding, which could escalate very quickly and result in an altercation.
- Feeding the DCDR dog with your resident dog. It's best to separate them initially and closely monitor them while eating. It is natural for dogs to be protective of their food. We also suggest always feeding your DCDR foster dog in a crate/kennel to further ensure a barrier between dogs with food.
- Over-stimulating the DCDR dog with too many introductions and events at first. It is very important to socialize the foster dog and take them to events where they can meet potential adopters, but too much too fast could cause anxiety and stress.

Introducing your cats to the DCDR dog

Introducing a cat to a dog is similar to introducing dogs but might require a little more time and patience. Some dogs might have lived with cats before and others might have just been tested at a shelter. DCDR tests shelter dogs with cats only by request. We will never put a dog into a home with cats if we think there could be any potential cat aggression, but sometimes this does not become apparent until the dog is in a home with a cat.

- Before you introduce the DCDR dog to your cat, you might want to wait a few days until you have confirmed or instilled some basic obedience in the DCDR dog. You will need to have the dog under control and know what behaviors are appropriate when interacting with a cat.
- Allow the dog to settle in and know your surroundings before you start introductions to unfamiliar animals. Take your time to create a stress-free environment.
- Begin by keeping your cat and the dog in separate areas of your house. Let them each explore the other's areas for short periods of time when the other pet has been removed. This will allow them to pick up on each other's scents and this starts the introduction process.
- After a few days, allow them to meet but keep the dog on a leash. Observe their interactions carefully. A dog that is showing overt aggression, such as snarling, baring teeth, or growling will probably never accept a cat. If all is reasonably calm, walk the dog around the room on a leash but don't let go in case the dog decides to chase the cat. On-leash interactions will allow the cat to approach the dog if it wants.
- It is a natural instinct for a dog to chase a cat, especially if the dog has not been around many cats. Never allow the dog to intimidate the cat by chasing or barking at it. Sternly tell the dog no or "Ah Ah" and let it know that this is not appropriate behavior. Make the dog sit and reward with praise and treats when acting appropriately around the cat.
- On the other hand, if the cat bops the dog on the nose as a warning, this is a good sign and should not be discouraged. When they set up boundaries between themselves, they are beginning to establish a working relationship.
- Let them interact, with the dog on a leash, for 15-30 minutes, and then return them to their separate areas of safety. Praise the dog again with lots of praise and rewards.
- As the days go on, increase the amount of time that they are together each visit. It's important to be patient and take extra time so that your cat is not overwhelmed and the dog understands the rules of interacting with cats. Be encouraging and relaxed and always reward good behavior.
- When you feel comfortable that they can spend time together, you can release the dog but keep the leash connected to its collar in case you need to regain control of the situation.
- Use your best judgment as to when they can begin to interact with the dog off-leash.
- It's always a good idea to have a safety zone for your cat. You can do this by blocking one room with a baby gate or using a hook and eye latch reversed to keep a door slightly open for your cat. In the event of a stressful situation, your cat has a protected area to go where the dog cannot.

10 Ways to Become a Successful FOSTER PARENT

1. Give your foster animal lots of attention and affection.
The animal you are fostering likely has special needs that require time and energy. The animal may have lived a difficult life before coming to your home; your love and attention will help to heal the animal's physical and psychological wounds.

2. Learn as much as you can about pet care.
Before you bring your foster animal home, learn as much as you can about caring for that animal. Read about feeding, grooming, and training. Study the warning signs that may indicate the animal needs veterinary attention.

3. Be prepared to make a financial commitment.
Before volunteering to foster an animal, find out from the shelter what costs you will incur. Depending on your shelter's policies and resources, you may be asked to pay for food, supplies, and/or veterinary care.

4. Make your home pet-friendly.
Before you bring your foster animal home, make sure you "pet proof" your home. For example, remove poisonous plants and protect furnishings. Keep the animal's room warm and comfortable. Also, take steps to prevent the animal from escaping.

5. Keep your pets up-to-date on their vaccinations.
All animals should be current on the vaccinations that protect them from diseases. Before you bring home a foster animal, consult with your veterinarian to make sure your own animals have received the preventive treatment they need.

6. Keep foster animals away from your own pets.
A foster pet may come into your home harboring contagious diseases. Even though your pets are vaccinated against many diseases, it's a good idea to keep the foster animal away from your pets as an added precaution. The length of time will depend on the circumstances, any symptoms the animal may be showing, and/or the results of an initial veterinary visit—and may range from a few days to a few weeks.

7. Recognize your limits.
Fostering requires a great deal of time and energy—both emotional and physical. Don't overextend yourself by fostering animals too frequently; you may burn yourself out.

8. Return the animal to the shelter on time.
The shelter depends on you to make its program work. Be sure to return the animal to the shelter at the scheduled time. If you decide to adopt an animal you foster, go through the shelter's normal adoption process. If a friend or relative wants to adopt the animal you are fostering, that person must go through the shelter's adoption process—not yours.

9. Understand that some foster animals will not survive.
Many animals arrive at the shelter come from unknown backgrounds. Despite your best efforts, the animal you foster may develop a severe illness that cannot be treated. Do the best you can to help the animal, but accept the fact that you cannot save them all.

10. Enjoy being a foster parent.
Although fostering takes a great deal of time and commitment, it can be an incredibly rewarding experience. You are temporarily providing a needy animal with a loving home environment and helping that animal become more suitable for adoption into a responsible, lifelong home.

Provided by The Humane Society of the United States

How to Write Pet Profiles
to Find Good Homes for Your Adoptables

By Elizabeth Doyle

Here are some general rules for writing blurbs to go with your adoptables' photos:

1. Facts are uninspiring.

The fact that Joey is two years old, black and brown, 46 pounds, a mix of German shepherd and pit bull, and has digestion problems will not inspire anyone to adopt him. People may be curious to learn these things, and they should be included. But none of it will get him adopted, and this stuff should never be the focus of the blurb.

2. Tell it from the animal's perspective.

The most compelling thing you can write on behalf of an animal is what you imagine the animal is thinking, feeling or remembering. The fact that he ducks his head when you try to pet him is not all that compelling. But the fact that he "seems to remember something hurtful" whenever a hand is raised draws the reader toward the animal.

3. Make the reader a hero.

Don't tell the reader how great the animal is and how lucky the reader would be to have such an animal. For emotional reasons, this never works. Instead, tell them how lucky the animal would be to have them, how grateful the animal would feel toward the wonderful human being who would bless this animal with a home. This is reverse salesmanship: Don't tell them that this is the animal everyone wants – imply that it's the animal nobody wants. That is what they want to hear. And it keeps them from thinking, "Well … someone else will surely adopt him. He doesn't need me."

4. Be gentle with restrictions.

Restrictions, while often necessary, are always strikes against the pet. For example, even people without children will sometimes be scared off by "Must go to a home without children" because they wonder what's wrong with the animal! Whenever possible, soften a restriction with your wording. For example, "Jo-Jo's such a goofy bundle of energy, he might be a little too much for small children!" is worlds better than "Must go to a home with no children," which leaves the reader raising an eyebrow. Another example: "Matilda would make an excellent companion for another slow, older cat who understands that lazing about on a window sill is enough excitement for one day!" instead of "Must go to a home with older cats only."

5. Adjust the emotional weight to match the urgency.

There is an important trade-off to consider when writing an adoption blurb. The more tragic you make the blurb, the more replies you will get. But on the other hand, some people will resent your heavy-handedness and stop looking at your website. You have to decide. In an emergency, there is a style of blurb that can be written which pretty much guarantees an adoption … but it plays off people's deep-rooted sense of personal injury, particularly their memories of rejection. Best Friends will not print blurbs like that. However, kill shelters absolutely should, because it's life or death. You have to decide what is the right level of sympathy-mongering for you.

6. Remember, be nice.

Anytime you put something in writing, you are taking a risk. To some extent, there's nothing you can do to make sure that nobody will object to anything you write in your blurb. But when it comes to writing adoption blurbs, you can avoid some of the common pitfalls by following this advice:

- Remember that every breed of everything has someone out there lobbying on its behalf. Avoid statements about breeds. Not even this: "While some people may think Rottweilers are mean, this girl is a complete sweetheart!" I got 57 hateful e-mails for a sentence very much like that one. Don't even allude to a breed stereotype.
- Don't ever print anyone's name, except in a flattering light. Especially, don't ever give the name of the person who abandoned the animal, since this can actually cause a legal problem as well as an interpersonal one.

7. There's someone for everyone.

What do you do when you have to write a blurb about an animal who just isn't your favorite? Don't feel bad! It happens to everyone. It's okay to love one cat just a little more than another – we're only human. But with adoption blurbs, you have to treat everyone equally. So the trick is … use your imagination. Imagine you are the kind of person who would love this animal the best – and then write the blurb from this imaginary person's point of view.

For example, if you prefer calmer dogs, you might be inclined to write, "He has a lot of energy, which some people might find overwhelming." But the following would probably be more effective in finding the dog a home: "He's the kind of dog who feels like a real companion when you go out for a walk. He keeps up with you – he wants to keep going – he keeps dancing in appreciation." The potential adopter might read the first sentence and think, "Hmmm … too much energy? Doesn't sound good." But the second blurb might cause this reaction: "Yes! That's what I want."

Some Sample Blurbs

OK, now it's time to practice on some sample blurbs. See if you can figure out what's wrong with these, and do a rewrite.

Common Error: "Jeffrey is just the sweetest dog. He is so cute. You will love him. He licks your hand! He has this cute way of cocking his head. He is so friendly."

Why an error? It's not the dog's point of view. Without a taste of who the dog is, and how he feels, we're not inspired to adopt him.

Try Again: "Jeffrey hasn't known many people who loved him as much as he loved them. Maybe he tries too hard. A lick on the hand, a cock of the head – he doesn't even know he's being cute. He's just trying to say, 'Thank you. Thank you for loving me back.' "

Okay, that's a little bit of hardball. But, not too bad. I would call it "middle ground." But you see how thinking a moment about how Jeffrey feels makes us more drawn to him, more interested in meeting him.

(Another tip: Don't make this stuff up. Spend a few moments with Jeffrey while you guess his thoughts. That way, when people meet him, they'll be able to see what you mean.)

Common Error: "Josephine is the sweetest bunny! You'll just love her tender little affectionate ways. She's a little shy, so she must go to a home without other rabbits. She's a little nippy, so she must go to a home with no children. She's a little scared, so she'll need a very patient person who's home all day. She's a little traumatized, so she'll need to have a home without dogs or cats. But she's so sweet! For the right person, she'll provide a lifetime of love."

Why an error? Yikes! Is there anything redeeming about this rabbit? Vague remarks like "sweet" and "affectionate" are not enough to counteract all the frightening restrictions we just heard. Plus, they don't make sense! She's affectionate, but she doesn't get along with anyone?

Try Again: "Josephine is a dreamy rabbit who lives in a world all her own. At night, she spins imaginative tales of fancy, and during the day, she hides in her alcove … watching, smiling, remembering. Her eyes are always alert. She doesn't miss a beat. Josephine is so lost in herself that it may not work to introduce her to a household full of other creatures or children. But still, she dreams that there's a place for her. Would you like to meet her?"

In this way, we're able to turn her negatives into positives. By imagining an interesting and positive way to describe her phobias, we can keep the blurb from being a list of restrictions. But, we still get our message across.

Common Error: "Today is your lucky day! Penelope, this gorgeous calico you see before you, will go to one lucky home. She is the purrrfect cat. Beautiful, sweet, smart, affectionate … how can you lose? So don't let another moment pass! Grab this girl before someone else does!"

Why an error? If someone else is going to adopt her, then she doesn't need me. While the above blurb might be cute and fun, cute and fun does not necessarily help the animal get adopted. Most adopters don't need a new animal. They're motivated by wanting to help an animal. It doesn't sound from this blurb that Penelope needs anyone's help. And that will hurt her chances.

Try Again: "Why Penelope has not yet been adopted is a mystery! There's absolutely nothing wrong with this elegant cat. She looks like a postcard – she's gorgeous! Her heart is warm and flowing. She exhibits the kind of affection you might associate with a cat who would be the first to find a happy home! Yet, she just hasn't been picked. Perhaps we need to say more about this sweetheart.…"

By changing the focus, we can impress upon the reader that Penelope is a perfect adoption candidate – without making it seem that she doesn't need anyone's help.

Common Error: "Danny the goat was brought here by Leslie and John Shmucko who had shot him twice and then – oh, gee, we feel so bad – changed their minds about killing him and dumped him on us! The Humane Society was no help, of course, as usual. They were just gonna kill him. Gee, thanks! So we had to take him. Why do people like that live in this world? But it's not Danny's fault! He's a sweet guy and is looking for a great home, with someone who's actually nice, for a change."

Why an error? First of all, with all the names that were dropped, it may be time to hire a lawyer! Second, while hard-luck stories do help to get the animal adopted, and should be used, they should be presented in a manner that draws sympathy to the animal, rather than wrath toward the folks who hurt him or didn't care about him. Wrath doesn't inspire adoption, but sympathy does.

Try Again: "Danny has had a terrible lot in life, so far. His family didn't want him, and please don't tell him, but there was even talk of shooting the poor little guy. At a regular shelter, his fate might not have been any better. So we took him, hoping there might be somebody out there who'd want to hug a little goat like this. He just loves everyone – is there someone who might finally love him, too?"

In this way, we can tell his story without expressing anger toward anyone, only sympathy toward the goat. In addition, we've elevated the tone of the language, giving ourselves as an organization a gentler, more sophisticated image than the first blurb presented. Remember that everything you say reflects not only on the animal or on the people who abandoned him … but on you, too. You never want to sound angry or out of control. No matter what you're writing, you always want to sound like someone who is calm and patient enough to be entrusted with a large and lovely donation.

Elizabeth Doyle is a staff writer for Best Friends. She writes the animal bios and articles for the website, magazine, and newsletters. She's also a much-published romance novelist from Texas.

Derby City Dog Rescue

...saving hearts one paw at a time.

When it is time to say goodbye to your Foster…remember

YOU developed and prepared your foster to be ready to be adopted into his/her **"FUR-EVER" family!**

Letting go of your foster, even to a wonderful home, can be difficult emotionally.

Some people worry that it is unfair to a dog to be moved from a foster home to a permanent home. They worry the pet has bonded to them and will experience a second abandonment. Is this true? Not at all! Being a foster home is a lifesaving bridge for a stray, frightened, ill or injured pet. It gives the animal a chance to recover and get used to life in a home environment. It's an opportunity for the dog to learn that people can be kind and loving, that food is always available and there is a warm, safe place to sleep and be loved.

You may decide to be there when your foster goes home to the new family. Seeing your foster ride off with their new family or seeing your foster in the new family's home, will help you remember that he/she has found a new and loving family.

Many foster families get photos and updates about their foster dogs enjoying their new homes. Pictures and updates may also be added to the Facebook Foster/Adopter Forum; this is a wonderful way to stay in touch. Of course, DCDR will pass along and share any information that we receive.

Knowing you were part of saving this dog's life and helping to find it a new home is tremendously rewarding.

Thank you so much *for becoming a part of Derby City Dog Rescue's amazing foster/volunteer team. We could not help the dogs we do without foster homes like yours. We hope that you enjoy your foster experience and look forward to working with you again in the future!*

~ Derby City Dog Rescue

Emergency Information

In the event of a true emergency, please take your foster dog to an emergency center. An emergency is any situation in which a foster dog's life is in danger. What constitutes an emergency?

1. Severe illness includes lethargy, severe vomiting, and/or diarrhea or signs that the dog is in pain.
2. Any kind of traumatic injury

If the injuries or illness are severe and the dog's life is in danger, **please take the dog to the nearest veterinarian.** If it is after hours there are 3 emergency hospitals in Louisville.

Please contact any DCDR board member ASAP:

Shannon Riley - 502-727-7088

Christy Duff - 502-931-7076

Jeff Duff - 502-322-6681

Melissa Kleber- 502-592-3343

Melissa Miller - 502-291-4351

Carlyn Nugent - 502-526-2128

Todd Bybee - 502-618-6215

Emergency Hospitals:

- **Blue Pearl (formerly LVSES**)
  DCDR's preferred emergency center
  13160 Magisterial Drive Louisville, KY 40223
  (502) 244-3036

- **MVS (Metropolitan Veterinary Specialists)**
  11800 Capital Way Louisville, KY 40299
  (502) 266-7007

- **Jefferson Animal Hospital**
  4504 Outer Loop Louisville, KY 40291
  (502) 961-6525

If the emergency is dire and if time does not allow you to get to LVSES, MVS and Jefferson are acceptable alternatives.

Derby City Dog Rescue

...saving hearts one paw at a time.

Signs that your foster dog needs to see a vet…

DCDR covers all medical expenses for our foster dogs. We use our preferred vets because we have a relationship with them and trust our foster dogs in their care. If you would rather take your foster dog to your regular vet, the cost will be your responsibility. *You agree to be responsible for food, daily care, and monthly flea/tick/heartworm preventatives.*

Sometimes it can be difficult to tell if a dog needs to be examined by a veterinarian. If you are concerned about your foster dog, contact DCDR to discuss the dog's symptoms. We can help decide if the dog needs veterinary care. If there is ever a true emergency, go straight to an emergency clinic (preferably Blue Pearl) and contact DCDR. We have provided a list of signs that your foster dog might be ill and also a list of symptoms that constitute an emergency.

Contact DCDR and seek veterinary care if your dog has any of the following symptoms for **more than one or two days:**

- Poor appetite
- Lethargy
- Vomiting
- Diarrhea
- Lameness
- Weakness
- Excessive salivation
- Excessive thirst (increased water intake)
- Frequent and/or inappropriate urination
- Constipation
- Excessive scratching or dull, dry, or flaky hair coat
- Shaking head and/or scratching ears
- Wheezing or frequent panting
- Nasal discharge or congestion
- Displays of mild-moderate pain (crying when a specific area is touched or action is taken).

Immediately contact DCDR and go to an emergency hospital if you observe any of the following signs:

- Hit by a car or other major trauma
- Blue, white, or very pale gums
- Labored breathing
- Collapse or loss of consciousness
- Dizziness, imbalance, or circling
- Inability to walk
- Extremely bloated abdomen
- Constant vomiting or retching

- Seizures that are constant or don't stop. (A note on seizures: epilepsy is common in dogs and not always an emergency.) Contact Shannon or Christy if your foster dog has a seizure and we can decide together if the dog needs to go to an emergency clinic or wait to see a regular vet the following day. *If your foster dog has a continuous seizure that doesn't stop, go straight to an emergency clinic.*
- Signs of severe acute pain (such as crying out very loudly and excessively)
- Body temperature taken rectally over 104 or under 98. NOTE: ***Do not leave a dog in the car unattended.** Temperatures can rise very quickly inside of a car even if the windows are cracked. It is extremely dangerous to leave a dog in a car unattended even for a few minutes during the warm seasons.

Steps to take if your foster dog is ill

- Contact a DCDR board member if your foster dog is ill to approve funding for treatment. Shannon and Christy are the primary contacts for medical treatment, but you may also contact another board member (see Emergency page for all numbers).

  Shannon: (502) 727-7088
  Christy: (502) 931-7076

- If your foster dog needs to be seen by a veterinarian, DCDR's preferred vets are:
  - **East Bullitt Animal Clinic**-Routine care such as vaccinations, spay/neuter, and illness.
    10774 Hwy 44 Mount Washington, KY 40047
    Phone: 502-904-9800
    (On Call Emergency Care is available)
    Business Hours: Monday: 8:30am to 6:00pm
    Tuesday: 8:30am to 4:00pm
    Wednesday: 8:30am to 6:00pm
    Thursday: 8:30am to 6:00pm
    Friday: 8:30am to 6:00pm

  - **Dixie Animal Hospital**-Routine care such as vaccinations, spay/neuter, and illness. Has extended weekend/evening hours for urgent care.
    9428 Dixie Highway
    Louisville, KY 40272
    Phone: 502-937-2987
    After hours: 502-366-6214
    Business Hours: M-F 9 a.m.-8 p.m.
    Saturday 9 a.m.-4 p.m.
    Sunday noon-4 p.m.

  - **Elk Creek Animal Hospital**-Orthopedic treatments and also an option for regular vetting if East Bullitt or Dixie are not available
    57 Commerce Drive Fisherville, KY 40023
    Phone: 502-477-1477
    Emergency Line during office hours: 502-477-1477
    Emergency line after hours: 502-422-2571.
    Business hours: M-F: 7:30-5:30 pm
    Sat 8:00am-12:00pm

- **Iroquois Animal Hospital**-heartworm treatment
  5017 S 3rd Street Louisville, Ky 40214
  Phone: 502-366-1940
  Business hours: M, W, F 8:00am-5:00pm
  Sat 9:30am-12:00pm

- **All Pets Veterinary Center**
  1219 Dorsey Lane Louisville, Ky 40223
  Phone: 502-384-0551
  Business hours: M, T, Th, F: 8:00am-7:00pm
  W: 8:00am-4:00pm
  Sat: 9:00am-1:00pm

Physical Exam Checklist for Pets

To identify an illness or abnormal situation, you must first be able to recognize what is normal for your pet. You know your pet better than anyone else and will have to decide when an abnormal situation warrants professional help. Sometimes the condition is so serious it leaves no doubt. Frequently, the changes are subtle or happen over a long period of time and it is important that they are recognized and addressed. Early recognition of a serious problem can save your pet's life.

The following information teaches you how to examine your pet and determine what is normal. The primary suggestion is to give your pet a "mini" physical exam occasionally when there is nothing wrong so you get used to what is normal for your pet. Record the normal values using the guide at the end of this article.

Hands-on Physical Exam

Before starting a hands-on exam, stand back and look at your pet for a few minutes. The posture, breathing, activity level, and general appearance can tell you a lot.

Now start the physical exam, making sure to look at the following areas. Consult a veterinarian if an abnormal condition exists or you are concerned about any exam findings. A hands-on physical exam in the comfort of your own home is the best way to learn what is normal for your pet.

Nose

Normal: Moist and clean

Abnormal:

- Dry or cracked
- Nasal discharge (such as thick greenish mucus)
- Bleeding

Skin

The skin is an important indicator of overall health. Feel your pet's skin and haircoat, noting any masses or sores. Many older pets can develop accumulations of fatty tissue known as lipomas. In order to differentiate these benign masses from cancerous ones, it is important to have your pet evaluated by your veterinarian and have an aspirate performed. This simple and

quick procedure can help your veterinarian determine the nature of the lump and help you decide if further tests or treatment are needed.

Normal

- Shiny and smooth haircoat
- Soft and unbroken skin
- Minimal odor

Abnormal

- Sparse or patchy haircoat
- Open sores or sounds
- Oily or greenish discharge
- Foul or rancid odor

Eyes

Normal

- Bright, moist, and clear
- Centered between the eyelid
- Pupils equal in size
- Whites of the eye should not appear colored (such as red or yellow) and should have only a few visible blood vessels
- Pupils shrink equally when bright light is shined into either eye
- Pupils enlarge equally when the eyes are held closed or the room darkened.

Abnormal

- Dull, sunken eyes. Eyes that appear dry. Thick discharge from eyes.
- One or both eyes not centered.
- Pupils unequal in size.
- Abnormal colors that indicate problems are yellow (jaundice), or red (bloodshot).
- Pupils fail to respond or respond differently when bright light is shined into either eye.
- Pupils fail to respond or respond differently to the dark.

Pay close attention to the color of the whites of your pet's eyes, as well as the pupils' response to changes in light.

Ears

Chronic ear problems are common in pets, and are often a result of allergies to inhaled pollen (like hay fever in people) that are then complicated by secondary infections with bacteria or fungus. Ear infections can be painful and head shaking can lead to an accumulation of blood (or hematoma) in the floppy part of the ear called the pinna.

Normal

- Skin smooth and without wounds
- Clean and dry
- Almost odor-free
- Typical carriage for breed
- Pain-free

Abnormal

- Wounds or scabs on skin. Lumps or bumps on skin. Any sign of rash
- Crust, moisture, or other discharge in ear canal
- Any strong odor from the ear
- Atypical carriage for breed; for example, a droopy ear in a breed with normally erect ears
- Painful or swollen ears.

Your pet's ears should be clean and odor-free.

Mouth

Normal

- Teeth are clean and white
- Gums are uniformly pink.

Abnormal

- Tartar accumulation around the base of the teeth
- The gums are red, pale, inflamed, or sore in appearance.

Press on the gum tissue with your finger or thumb and release quickly. Watch the color return to the gums. This checks the capillary refill time (CRT) and is a crude assessment of how well the heart and circulatory system are working. A normal CRT is 1 to 2 seconds for color to return. This can be a difficult test to interpret sometimes (for example, if your pet has dark or pigmented gums), and should not be relied upon as definitive evidence that your pet is sick or healthy.

Gums should be pink -- teeth should be clean and white.

Neck, Chest, and Breathing

Normal

- It is difficult to hear the pet breathe at all except when he or she is panting.
- The chest wall moves easily to and fro during respiration.
- Most of the act of breathing is performed by the chest wall.

Abnormal

- Any unusual noise heard while the pet is breathing could indicate a problem, especially if the noise is new for the pet.
- There is noticeable effort by the pet to move the chest wall.
- The abdomen is actively involved in the act of inhaling and exhaling.
- The pet stands with elbows held out further than normal or, is unable to rest or lie down.

Abdomen (Stomach)

Touch and feel (palpate) the stomach. Start just behind the ribs and gently press your hands into the abdomen, feeling for abnormalities. If your pet has just eaten, you may be able to feel an enlargement in the left part of the abdomen just under the ribs. Proceed toward the rear of the body, passing your hands gently over the abdomen.

Normal

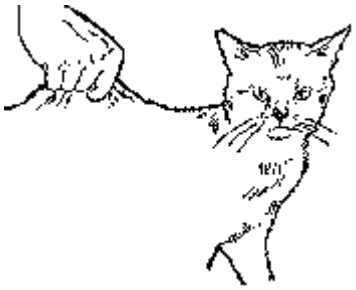
- No lumps, bumps, or masses
- No discomfort on palpation
- No distension of the abdominal wall.

Abnormal

- Any lump, bump, or mass may be abnormal.
- Palpation causes groaning or difficulty breathing. Any evidence or indication of pain is a serious finding. Use caution to avoid being bitten.
- The abdomen feels hard or tense and it appears distended.

Any pain felt during an abdominal palpation could be a problem. Consult your veterinarian.

Skin Turgor Test



The skin turgor test may be the most helpful one to determine whether an animal is well hydrated. (See dehydration.) This test can be affected by several factors other than hydration status, such as weight loss, age and general skin condition, but it can help you make a rough determination of your pet's hydration status. To perform this test, pull the skin over the chest or back into a tent and release it quickly; avoid the skin of the neck as it's often too thick for this test. Observe the skin as it returns to its resting position.

Normal

- The skin snaps back into position quickly.

Abnormal

- The skin returns slowly or remains slightly tented. This is a sign of possible dehydration.

Pulse and Heart Rate

Learn to locate the pulse on your pet before a crisis. The best place on a cat or dog is the femoral artery in the groin area. Place your fingers around the front of the hind leg and move upward until the back of your hand meets the abdominal wall. Move your fingertips back and forth on the inside of the thigh until you feel the pulsing sensation as the blood rushes through the artery. Count the number of pulses in 15 seconds and multiply by 4. This will give you the pulse rate in beats per minute (bpm). Pulse rate is a highly variable finding and can be affected by recent exercise, excitement or stress. Do not use the heart rate at the sole evidence that your pet is sick or healthy.

Resting heart rates listed are for healthy animals at rest at home, not for animals evaluated in a veterinary clinic where higher heart rates than those listed might be detected due to excitement, stress of a visit to the clinic, or disease.

Normal

- Cats: 100 to 160 beats per minute (bpm). A relaxed cat may have a slower pulse.
- Dogs: 60 to 160 bpm. Relaxed or athletic dogs tend to have slower heart rates.
- Pulse is easily palpated, strong, and regular.
- Normal resting rate is 15 to 60 breaths per minute. A sleeping or resting cat would be near the low end, while an active cat would be higher.
- An increased resting respiratory rate may be a sign that a disease is progressing. If you know your cat's normal resting rate is 15 breaths a minute, and after living with heart disease the resting rate goes up to 30 while the cat is asleep, the doubled rate means it's time to see the veterinarian again.

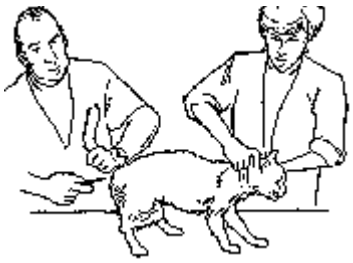
Abnormal

- Too rapid or too slow

- Pulse is weak, irregular, or hard to locate.

Learn how to properly take your pet's pulse.

Temperature



Taking your pet's temperature is an easy and important procedure. Use a digital rectal thermometer. The ear ones are less reliable and a rectal one should be used. Digital thermometers are easier to read and can be inexpensively purchased at a pharmacy.

Rectal temperatures are more accurate than axillary (between the front leg and the body) temperatures. Lubricate the thermometer with petroleum jelly. Gently and slowly insert the thermometer into the rectum about 1 or 2 inches. If it does not slide in easily, do not force it. Leave it in for 2 minutes, then read and record the temperature.

Normal

- Temperature is between 101F and 102.5F.
- The thermometer is almost clean when removed.

Abnormal

- Temperature is below 100F or above 103F.
- There is evidence of blood, diarrhea, or black, tarry stool on the thermometer.

It may be easier to take your cat's temperature if you have someone to help you. Do not risk taking your pet's temperature if you feel there is a risk of being bitten.

Normals: A Final Note

Know the normals for your pet. Record the results of your pet's home examination using the outline on the following page. Watch your pet closely so you know when something is wrong. Become familiar with these normals before a crisis so you can recognize an abnormal finding.

Normal Values for my Pet

My pet _____ has the following normal values:
Normal Weight: _____pounds
Resting Heart Rate (Pulse): _____ beats per minute
Resting Respiratory Rate: _____ breaths per minute
Rectal Temperature: _____ degrees Fahrenheit
Normal Gum Color: _____
Normal Whites of the Eyes: _____

This information is intended as a general reference for the lay public, and is not intended to replace the advice of a veterinarian. A veterinarian should be consulted before starting, stopping or changing any medications.

Date Published: 12/31/1994
Date Reviewed/Revised: 04/27/2011

A Poison Safe Home

Foods to Avoid Feeding Your Pet

Alcoholic beverages
Avocado
Chocolate (all forms)
Coffee (all forms)
Fatty foods
Macadamia nuts
Moldy or spoiled foods
Onions, onion powder
Raisins and grapes
Salt
Yeast dough
Garlic
Products sweetened with xylitol

Warm Weather Hazards

Animal toxins—toads, insects, spiders, snakes and scorpions
Blue-green algae in ponds
Citronella candles
Cocoa mulch
Compost piles Fertilizers
Flea products
Outdoor plants and plant bulbs
Swimming-pool treatment supplies
Fly baits containing methomyl
Slug and snail baits containing metaldehyde

Medication

Common examples of human medications that can be potentially lethal to pets, even in small doses, include:
Pain killers
Cold medicines
Anti-cancer drugs
Antidepressants
Vitamins
Diet Pills

Cold Weather Hazards

Antifreeze
Liquid potpourri
Ice melting products
Rat and mouse bait

Common Household Hazards

Fabric softener sheets
Mothballs
Post-1982 pennies (due to high concentration of zinc)

Holiday Hazards

Christmas tree water (may contain fertilizers and bacteria, which, if ingested, can upset the stomach.
Electrical cords
Ribbons or tinsel (can become lodged in the intestines and cause intestinal obstruction—most often occurs with kittens!)
Batteries
Glass ornaments

Non-toxic Substances for Dogs and Cats

The following substances are considered to be non-toxic, although they may cause mild gastrointestinal upset in some animals:
Water-based paints
Toilet bowl water
Silica gel
Poinsettia
Cat litter
Glue traps
Glow jewelry

17 Poisonous Plants

Lilies Members of the *Lilium spp.* are considered to be highly toxic to cats. While the poisonous component has not yet been identified, it is clear that with even ingestions of very small amounts of the plant, severe kidney damage could result.

Marijuana Ingestion of *Cannabis sativa* by companion animals can result in depression of the central nervous system and uncoordination, as well as vomiting, diarrhea, drooling, increased heart rate, and even seizures and coma.

Sago Palm All parts of *Cycas Revoluta* are poisonous, but the seeds or "nuts" contain the largest amount of toxin. The ingestion of just one or two seeds can result in very serious effects, which include vomiting, diarrhea, depression, seizures and liver failure.

Tulip/Narcissus bulbs The bulb portions of *Tulipa/Narcissus spp.* contain toxins that can cause intense gastrointestinal irritation, drooling, loss of appetite, depression of the central nervous system, convulsions and cardiac abnormalities.

Azalea/Rhododendron Members of the *Rhododenron spp.* contain substances known as grayantoxins, which can produce vomiting, drooling, diarrhea, weakness and depression of the central nervous system in animals. Severe azalea poisoning could ultimately lead to coma and death from cardiovascular collapse.

Oleander All parts of *Nerium oleander* are considered to be toxic, as they contain cardiac glycosides that have the potential to cause serious effects—including gastrointestinal tract irritation, abnormal heart function, hypothermia and even death.

Castor Bean The poisonous principle in *Ricinus communis* is ricin, a highly toxic protein that can produce severe abdominal pain, drooling, vomiting, diarrhea, excessive thirst, weakness and loss of appetite. Severe cases of poisoning can result in dehydration, muscle twitching, tremors, seizures, coma and death.

Cyclamen *Cylamen* species contain cyclamine, but the highest concentration of this toxic component is typically located in the root portion of the plant. If consumed, *Cylamen* can produce significant gastrointestinal irritation, including intense vomiting. Fatalities have also been reported in some cases.

Kalanchoe This plant contains components that can produce gastrointestinal irritation, as well as those that are toxic to the heart, and can seriously affect cardiac rhythm and rate.

Yew *Taxus spp.* contains a toxic component known as taxine, which causes central nervous system effects such as trembling, incoordination, and difficulty breathing. It can also cause significant gastrointestinal irritation and cardiac failure, which can result in death.

Amaryllis Common garden plants popular around Easter, *Amaryllis* species contain toxins that can cause vomiting, depression, diarrhea, abdominal pain, hypersalivation, anorexia and tremors.

Autumn Crocus Ingestion of *Colchicum autumnale* by pets can result in oral irritation, bloody vomiting, diarrhea, shock, multi-organ damage and bone marrow suppression.

Chrysanthemum These popular blooms are part of the *Compositae* family, which contain pyrethrins that may produce gastrointestinal upset, including drooling, vomiting and diarrhea, if eaten. In certain cases depression and loss of coordination may also develop if enough of any part of the plant is consumed.

English Ivy Also called branching ivy, glacier ivy, needlepoint ivy, sweetheart ivy and California ivy, *Hedera helix* contains triterpenoid saponins that, should pets ingest, can result in vomiting, abdominal pain, hypersalivation and diarrhea.

Peace Lily (AKA Mauna Loa Peace Lily) *Spathiphyllum* contains calcium oxalate crystals that can cause oral irritation, excessive drooling, vomiting, difficulty in swallowing and intense burning and irritation of the mouth, lips and tongue in pets who ingest.

Pothos Pothos (both *Scindapsus* and *Epipremnum*) belongs to the Araceae family. If chewed or ingested, this popular household plant can cause significant mechanical irritation and swelling of the oral tissues and other parts of the gastrointestinal tract.

Schefflera *Schefflera* and *Brassaia actinophylla* contain calcium oxalate crystals that can cause oral irritation, excessive drooling, vomiting, difficulty in swallowing and intense burning and irritation of the mouth, lips and tongue in pets who ingest.

No Bones About It:

Bones are Unsafe for Your Dog

The idea that it's natural for dogs to chew on bones is a popular one. However, it's a dangerous practice and can cause serious injury to your pet.

"Make sure you throw out bones from your own meals in a way that your dog can't get to them."

"Some people think it's safe to give dogs large bones, like those from a ham or a roast," says Carmela Stamper, D.V.M., a veterinarian in the Center for Veterinary Medicine at the Food and Drug Administration. "Bones are unsafe no matter what their size. Giving your dog a bone may make your pet a candidate for a trip to your veterinarian's office later, possible emergency surgery, or even death."

"Make sure you throw out bones from your own meals in a way that your dog can't get to them," adds Stamper, who suggests taking the trash out right away or putting the bones up high and out of your dog's reach until you have a chance to dispose of them. "And pay attention to where your dog's nose is when you walk him around the neighborhood—steer him away from any objects lying in the grass."

Here are 10 reasons why it's a bad idea to give your dog a bone:

1. **Broken teeth.**
   This may call for expensive veterinary dentistry.

2. **Mouth or tongue injuries.**
   These can be very bloody and messy and may require a trip to see your veterinarian.

3. **Bone gets looped around your dog's lower jaw.**
   This can be frightening or painful for your dog and potentially costly to you, as it usually means a trip to see your veterinarian.

4. **Bone gets stuck in esophagus, the tube that food travels through to reach the stomach.**
   Your dog may gag, trying to bring the bone back up, and will need to see your veterinarian.

5. **Bone gets stuck in windpipe.**
   This may happen if your dog accidentally inhales a small enough piece of bone. This is an emergency because your dog will have trouble breathing. Get your pet to your veterinarian immediately!

6. **Bone gets stuck in stomach.**
   It went down just fine, but the bone may be too big to pass out of the stomach and into the intestines. Depending on the bone's size, your dog may need surgery or upper gastrointestinal endoscopy, a procedure in which your veterinarian uses a long tube with a built-in camera and grabbing tools to try to remove the stuck bone from the stomach.

7. **Bone gets stuck in intestines and causes a blockage.**
   It may be time for surgery.

8. **Constipation due to bone fragments.**
   Your dog may have a hard time passing the bone fragments because they're very sharp and they scrape the inside of the large intestine or rectum as they move along. This causes severe pain and may require a visit to your veterinarian.

9. **Severe bleeding from the rectum.**
   This is very messy and can be dangerous. It's time for a trip to see your veterinarian.

10. **Peritonitis.**
    This nasty, difficult-to-treat bacterial infection of the abdomen is caused when bone fragments poke holes in your dog's stomach or intestines. Your dog needs an emergency visit to your veterinarian because peritonitis can kill your dog.

"Talk with your veterinarian about alternatives to giving bones to your dog," says Stamper. "There are many bone-like products made with materials that are safe for dogs to chew on."

"Always supervise your dog with any chew product, especially one your dog hasn't had before," adds Stamper. "And always, if your dog 'just isn't acting right,' call your veterinarian right away!" FDA

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Fairleigh Pet Center
1212 Bardstown Rd.
Louisville, KY 40204

CANINE HEARTWORM DISEASE

What causes heartworm disease?

Heartworm disease or dirofilariasis is a serious and potentially fatal disease in dogs. It is caused by a blood-borne parasite called *Dirofilaria immitis.*

Heartworms are found in the heart and adjacent large blood vessels of infected dogs. The female worm is 6 to 14 inches long (15 to 36 cm) and 1/8 inch wide (5 mm). The male is about half the size of the female. One dog may have as many as 300 worms.

How do heartworms get into the heart?

Adult heartworms live in the heart and pulmonary arteries of infected dogs. They have been found in other areas of the body, but this is unusual. They live up to five years and, during this time, the female produces millions of offspring called microfilaria. These microfilariae live mainly in the small vessels of the bloodstream. The immature heartworms cannot complete their life cycle in the dog. The mosquito is required for some stages of the heartworm life cycle. The microfilaria are not infective (cannot grow to adulthood) in the dog – although they do cause problems.

As many as 30 species of mosquitoes can transmit heartworms. The female mosquito bites the infected dog and ingests the microfilariae during a blood meal. The microfilariae develop further for 10 to 30 days in the mosquito and then enter the mouthparts of the mosquito. The microfilariae are now called infective larvae because at this stage of development, they will grow to adulthood when they enter a dog. The mosquito usually bites the dog where the hair coat is thinnest. However, having long hair does not prevent a dog from getting heartworms.

When fully developed, the infective larvae enter the bloodstream and move to the heart and adjacent vessels where they grow to maturity in two to three months and start reproducing, thereby completing the full life cycle.

Where are heartworms found?

Canine heartworm disease occurs all over the world. In the United States, it was once limited to the south and southeast regions. However, the disease is spreading and is now found in most regions of the United States and Canada, particularly where mosquitoes are prevalent.

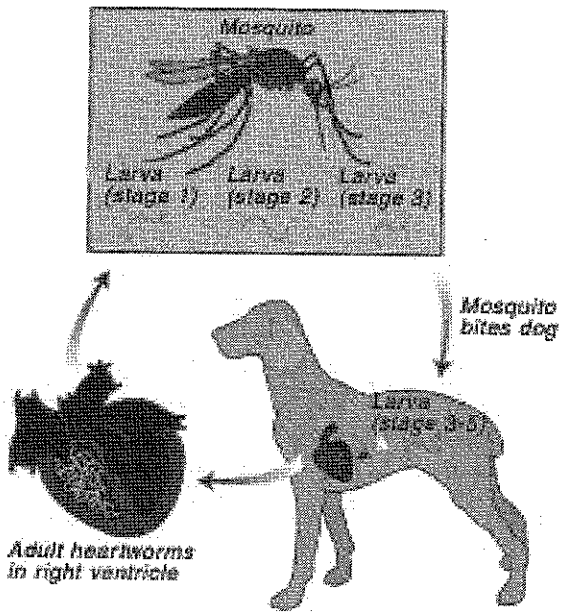
How do dogs get infected with them?

The disease is not spread directly from dog to dog. An intermediate host, the mosquito, is required for transmission. Spread of the disease therefore coincides with mosquito season. The number of dogs infected and the length of the mosquito season are directly correlated with the incidence of heartworm disease in any given area.

It takes a number of years before dogs show outward signs of infection. Consequently, the disease is diagnosed mostly in four to eight year old dogs. The disease is seldom diagnosed in a dog less than one year of age because the young worms (larvae) take up five to seven months to mature after infection.

What do heartworms do to the dog?

Adult heartworms: Adult heartworms cause disease by clogging the heart and major blood vessels leading from the heart. They interfere with the valve action in the heart. By clogging the main blood vessels, the blood supply to other organs of the body is reduced, particularly blood flow to the lungs, liver and kidneys, leading to malfunction of these organs.



LIFE CYCLE OF THE HEARTWORM

Most dogs infected with heartworms do not show any signs of disease for as long as two years. Unfortunately, by the time clinical signs are seen, the disease is well advanced. The signs of heartworm disease depend on the number of adult worms present, the location of the worms, the length of time the worms have been present, and the degree of damage to the heart, lungs, liver, and kidneys from the adult worms and the microfilariae.

The most obvious signs are a soft, dry cough, shortness of breath, weakness, nervousness, listlessness, and loss of stamina. All of these signs are most noticeable following exercise, when some dogs may even faint.

Listening to the chest with a stethoscope will often reveal abnormal lung and heart sounds. In advanced cases, congestive heart failure may be apparent and the abdomen and legs will swell from fluid accumulation. There may also be evidence of weight loss, poor condition, and anemia.

Severely infected dogs may die suddenly during exercise or excitement.

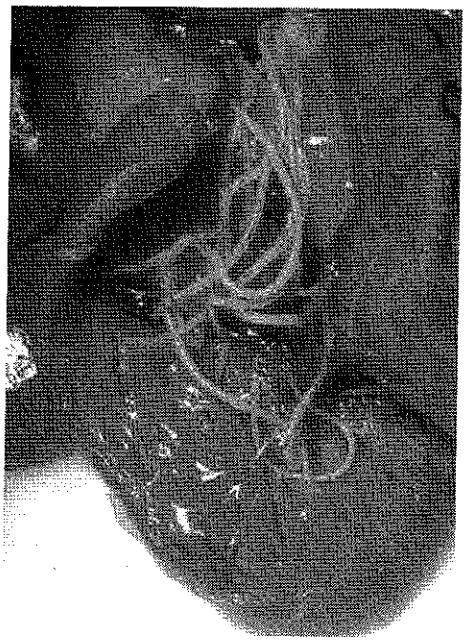
Microfilariae (Young heartworms): Microfilariae circulate throughout the body but remain primarily in the small blood vessels. Because they are as wide as the small vessels, they may block blood flow in these vessels. The body cells being supplied by these vessels are deprived of the nutrients and oxygen normally supplied by the blood. The lungs and liver are primarily affected.

Destruction of lung tissue leads to coughing. Cirrhosis of the liver causes jaundice, anemia, and general weakness because this organ is essential in maintaining a healthy animal. The kidneys may also be affected and allow poisons to accumulate in the body.

How is heartworm infection diagnosed?

In most cases, diagnosis of heartworm disease can be made by a blood test that can be run in the veterinary hospital or by a veterinary laboratory. Further diagnostic procedures are essential to determine if the dog can tolerate heartworm treatment. Depending on the case, we will recommend some or all of the following procedures before treatment is started.

Serological test for antigens to adult heartworms: This is a test performed on a blood sample. It is the most widely used test because it detects antigens (proteins) produced by adult heartworms. It will be positive even if the dog does not have any microfilaria in the blood. This occurs in about 20% of the cases. Dogs with less than five adult heartworms will not have enough antigen to give a positive test result, so there may be an occasional false negative result in dogs with early infections. Because the detected antigen is only produced by the female heartworm, a population of only male heartworms will also give a false negative. Therefore, there must be at least five female worms present for the most common heartworm test to diagnose heartworm disease.



Blood test for microfilariae: A blood sample is examined under the microscope for the presence of microfilariae. If microfilariae are seen, the test is positive. The number of microfilariae seen gives us a general indication of the severity of the infection. However, the microfilariae are seen in greater numbers in the summer months and in the evening, so these variations must be considered. Approximately 20% of dogs do not test positive even though they have heartworms because of an acquired immunity to this stage of the heartworm. Because of this, the antigen test is the preferred test. Also, there is another blood parasite that is fairly common in dogs that can be hard to distinguish from heartworm microfilariae.

Blood chemistries: Complete blood counts and blood tests for kidney and liver function may give an indication of the presence of heartworm disease. These tests are also performed on dogs diagnosed as heartworm-infected to determine the function of the dog's organs prior to treatment.

Radiographs (X-rays): A radiograph of a dog with heartworms will usually show heart enlargement and swelling of the large artery leading to the lungs from the heart. These signs are considered presumptive evidence of heartworm disease. Radiographs may also reveal the condition of the heart, lungs, and vessels. This information allows us to predict an increased possibility of complications related to treatment.

Electrocardiogram: An electrocardiogram (EKG or ECG) is a tracing of the electric currents generated by the heart. It is most useful to determine the presence of abnormal heart rhythms.

Echocardiography: An ultrasonic examination that allows us to see into the heart chambers and even visualize the heartworms.

How are dogs treated for heartworms?

There is some risk involved in treating dogs with heartworms, although fatalities are rare. In the past, the drug used to treat heartworms contained arsenic so toxic effects and reactions occurred more frequently. A newer drug is now available that does not have the toxic side-effects, allowing successful treatment of more than 95% of dogs with heartworms.

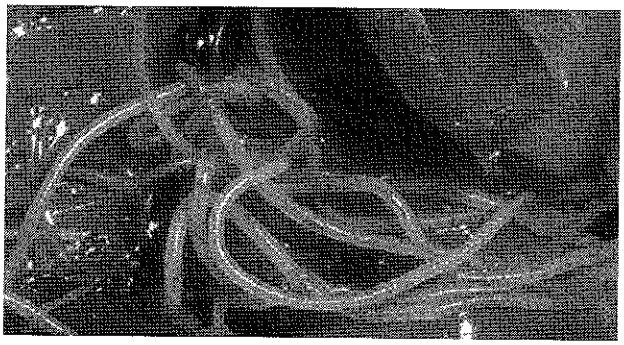
Some dogs are diagnosed with advanced heartworm disease. This means that the heartworms have been present long enough to cause substantial damage to the heart, lungs, blood vessels, kidneys, and liver. A few of these cases will be so advanced that it will be safer to treat the organ damage rather than risk treatment to kill the heartworms. Dogs in this condition are not likely to live more than a few weeks or months.

Treatment to kill adult heartworms: An injectable drug to kill adult heartworms is given. It kills the adult heartworms in the heart and adjacent vessels. These injections may be divided and given thirty days apart.

Complete rest is essential after treatment: The adult worms die in a few days and start to decompose. As they break up, they are carried to the lungs, where they lodge in the small blood vessels and are eventually reabsorbed by the body. This can be a dangerous period so it is absolutely essential that the dog be kept quiet and not be allowed to exercise for one month following treatment. The first week after the injections is critical because the worms are dying. A cough is noticeable for seven to eight weeks after treatment in many heavily infected dogs.

Prompt treatment is essential if the dog has a significant reaction in the weeks following the initial treatment, although such reactions are rare. If a dog shows loss of appetite, shortness of breath, severe coughing, coughing up blood, fever, and/or depression, you should notify us. Response to antibiotics, cage rest, and supportive care and intravenous fluids is usually good in these cases.

Treatment to kill microfilaria: Approximately one month following treatment to kill the adults, the dog is returned to the hospital for administration of a drug to kill the baby heartworms or microfilariae. Your dog needs to stay in the hospital for the day. Your dog is started on heartworm preventive after this treatment.



Other treatments: In dogs with severe heartworm disease, it may be necessary to treat them with antibiotics, special diets, diuretics to remove fluid accumulations, and drugs to improve heart function prior to treatment for the heartworms.

Dogs with severe heart disease may need lifetime treatment for the heart failure, even after the heartworms have been killed. This includes the use of diuretics, heart drugs, and special low salt, low protein diets.

Response to treatment: Dog owners are usually pleasantly surprised at the change in their dog following treatment for heartworms, especially if the dog had been showing signs of

heartworm disease. The dog has a renewed vigor and vitality, improved appetite, and weight gain.

Are changes made in the treatment protocol for dogs that have severe heartworm disease?

Yes. The state of heart failure is treated as described above. However, we also treat the adult heartworms in a two-stage process. Only one treatment with the drug to kill the worms is given initially. This causes the death of approximately half of the worms. One month later, the full treatment is given to kill the remaining worms. By killing them in two stages, the severe effects on the lungs are much less likely to occur. This protocol is also used in moderate cases to provide a safer treatment.

How can I prevent this from happening again?

When a dog has been successfully treated for heartworms, it is essential to begin a heartworm prevention program to prevent future recurrence. With the safe and affordable heart preventives available today, no pet should ever have to endure this dreaded disease.

This client information sheet is based on material written by Ernest Ward, DVM.

The Pet Health Care Library

Heartworm: The Parasite

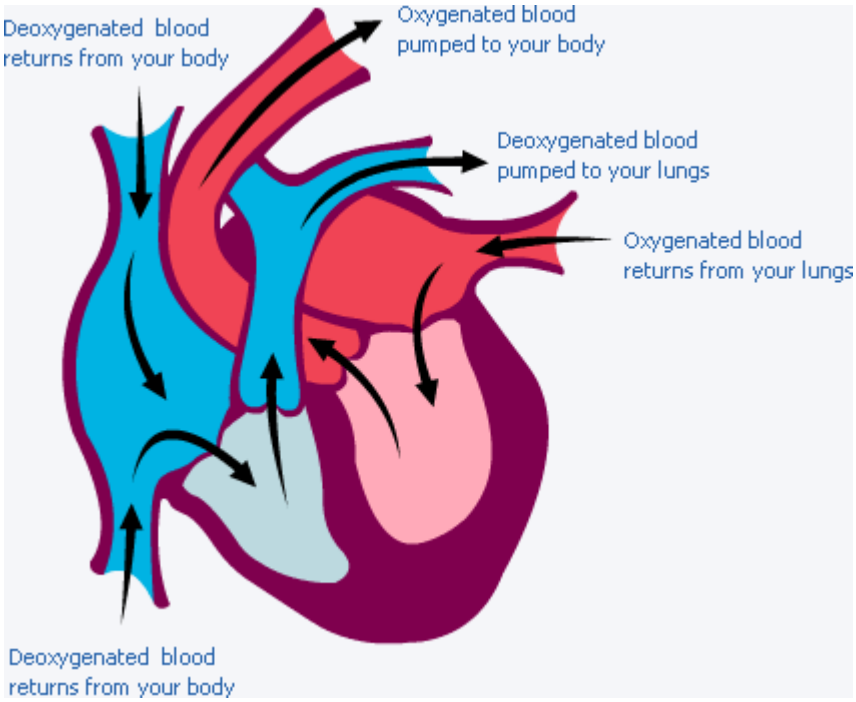
Heartworm (*Dirofilaria immitis*) is a fairly large worm, up to 14 inches long, that in adulthood lives in the heart and pulmonary arteries of an infected dog. Dogs acquire this infection through mosquito bites as mosquitoes readily pick up larval heartworms from infected dogs and carry them to new dogs. Some geographic areas have severe heartworm problems while other areas have virtually none. In order for the parasite to establish its presence in an area, the following conditions must be met:

- Types of mosquitoes capable of carrying larval heartworms must be present.
- The weather must be warm enough to allow heartworm larval development within the mosquito.
- There must be infected dogs (or coyotes) in the area.
- There must be vulnerable host dogs in the area.

When these conditions come together, an area becomes endemic for heartworm disease.

The detailed version of the heartworm story:
Let's follow the worm's life cycle.

The Adult Heartworm
Blood going to the lung to pick up oxygen is received first by the right atrium of the heart, then sent to the right ventricle (the pumping chamber) and then sent out to the lung via the pulmonary arteries. This path is outlined in the blue pathway in the graphic below.



The adult heartworm is fairly large, several inches in length, and it prefers to live, not in the heart, but in the pulmonary arteries. It swims into a cozy tubular artery, where it is massaged and nourished by the blood coursing past it. In the pulmonary arteries of an infected dog, the

worm's presence generates a strong inflammatory response and a tendency for blood to inappropriately clot. If enough worms are present, the heart must work extra hard to pump blood through the plugged up arteries.

If the worm infection is a heavy one (over 25 worms for a 40 lb dog), the worms begin to back up into the heart's right ventricle (the chamber which pumps blood through the lung). The worms actually take up a significant amount of space within the heart, space that could have been taken up by blood. With less blood going through the heart, there is less blood being pumped out to the lung.

When over 50 worms are present, the ventricle is completely full and the atrium, the chamber receiving blood from the rest of the body, begins to fill with worms.

When over 100 worms are present, the entire right side of the heart is filled with worms and there is very little room for any blood to be pumped. This drastic phenomenon is called "Caval Syndrome" and most dogs do not survive it.

Graphic reprinted with permission from Merial

Microfilariae (First Stage Larvae)

microfilariae in a blood smear

With adult male and female worms present, mating begins to occur. Heartworms do not lay eggs like other worm parasites; instead they give live birth and the baby worms are called microfilariae.

Microfilariae are released into the circulatory system in hopes that they will be slurped up by a mosquito taking a blood meal and carried to a new host. Microfilariae may live up to two years within the host dog in whom they were born. If, after this period, a mosquito has not picked them up, they die of old age. Microfilariae may also be transmitted across the placental barrier to unborn puppies if the mother dog is infected with heartworm. It is important to realize that such puppies will not develop adult heartworms or heartworm disease from these microfilariae; in order for a heartworm to reach adulthood, it must be passed through a mosquito.

Parasitic worms have 5 larval stages and are termed L1, L2, L3, etc. Heartworm microfilariae are first stage larvae: L1s.

Note: Ivermectin, and milbemycin based heartworm preventives will kill microfilariae after prolonged use. Dogs on these heartworm preventives, even if infected with adult heartworms, will not test positive for microfilariae. Moxidectin based heartworm preventives (Advantage Multi®) and selamectin based heartworm preventives (Revolution®) will not reliably wipe out microfilariae; infected dogs who have received these products may or may not test positive.

Inside the Mosquito

So, let us continue to follow the young heartworm's development inside the mosquito who has taken it in with a blood meal. Within the mosquito's body, the microfilariae will develop to L2's and finally to L3's, the stage capable of infecting a new dog. How long this takes depends on the environmental conditions. In general, it takes a few weeks. A minimum environmental temperature of 57 degrees F is required throughout this period. The process goes faster in warmer weather.

Infecting a New Dog

When a dog is bitten by an infected mosquito, the L3 is not deposited directly into the dog's bloodstream. Instead, it is deposited in a tiny drop of mosquito "spit" adjacent to the mosquito bite. For transmission to occur there must be adequate humidity to prevent evaporation of this fluid droplet before the L3's can swim through the mosquito bite and into the new host.

Once safely inside the new host, the L3 will spend the next week or two developing into an L4 within the host's skin. The L4 will live in the skin for three months or so until it develops to the L5 stage and is ready to enter the host's circulatory system. The L5, which is actually a young adult, migrates to the heart and out into the pulmonary arteries (if there is room) where it will mate, approximately 5 to 7 months after first entering the new host.

Note: All commercially available heartworm preventives act by wiping out the freshly delivered L3's and the L4's living in the skin. The ivermectin products are also able to kill the younger L5's.

Also note: because the heartworm tests on the market either look for microfilariae or for adult worm proteins, they will not detect infection with immature worms. This is why it takes 5 to 7 months from the time of exposure to get a valid heartworm test and this is also why there is no point in testing puppies less than 5 to 7 months of age.

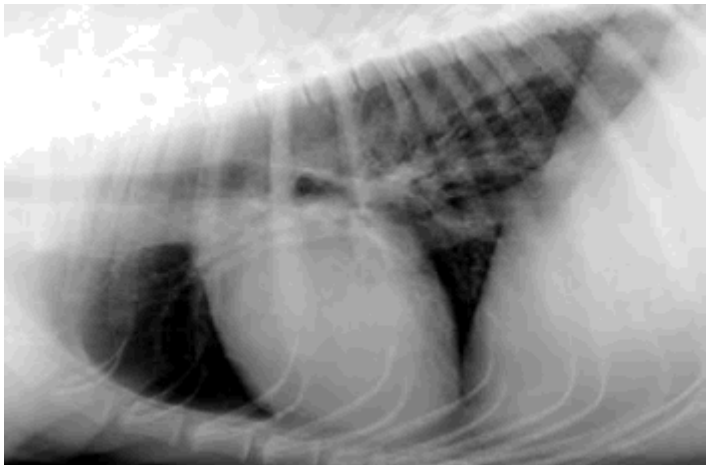
Pet Pharmacy

Heartworm Treatment

It has been said that the treatment of heartworm infection is somewhat of an art. There are several strategies that can be used depending on the dog's medical condition including the option of not treating at all. The important concept to realize is that harsh arsenic-based drugs are necessary to kill adult heartworms and that treating for heartworm infection is neither simple nor safe in itself. What are some of the dangers and options in clearing the body of this parasite?

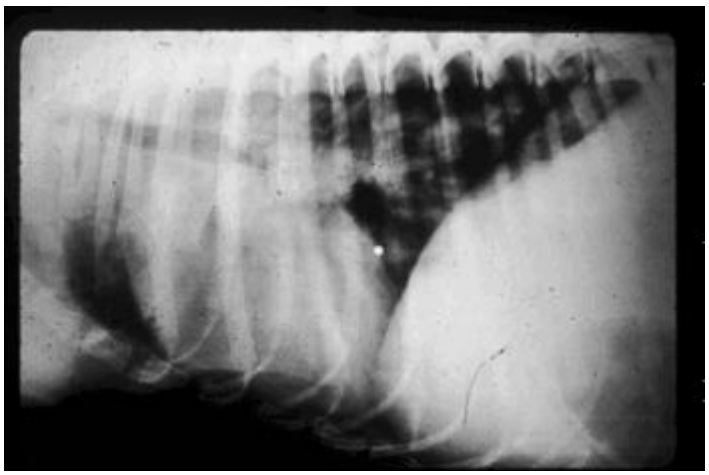
Patient Evaluation

Prior to therapy, the heartworm patient is assessed and rated for risk into one of four categories. Important factors include: how many worms are thought to be present based upon the tests performed, the size of the dog; the age of the dog; concurrent health factors; severity of the heart disease; and the degree to which exercise can be restricted in the recovery period. Some hospitals use computerized formulas to categorize heartworm infected patients. The categories into which patients are grouped are as follows:



Chest radiograph from a mildly affected dog

- Class I: Lowest Risk. Young healthy dogs with minimal disease evident on radiographs, normal blood work, and no symptoms of illness. They may cough only occasionally if ever, they only fatigue with exercise, and their chest radiographs are normal.
- Class II: Moderately Affected. Healthy dogs with minimal signs as above, occasional coughing, fatigue only with exercise but with radiographs that show definite evidence of heart disease. Lab testing shows mild anemia, urine dipsticks show some protein, but not severe urinary protein loss.



Chest radiograph from a severely affected dog

- Class III: Severely Affected. Dog is suffering from weight loss, cough, difficulty breathing, blatant damage to the vasculature is apparent on radiographs, laboratory work reveals a more severe anemia and marked urinary protein loss.
- Class IV: Caval Syndrome. Dog is collapsing in shock and dark brown urine is evident.
  Heartworms visible by ultrasound in the AV valve of the right side of the heart, and blood work is abnormal. These dogs are dying and can only be saved by the physical removal of adult heartworms via an incision through the jugular vein. If such a dog can be saved from this crisis, further heartworm infection treatment cannot be contemplated until the dog is stable enough to fit into one of the other categories above.

See a video of the physical removal of adult heartworms from the jugular vein of a dog with caval syndrome.

After knowing what class the patient fits in, treatment can be determined. Dogs have three groups of heartworms in their body:

- The microfilariae, which are the newborn children of the adult worms living in the heart and pulmonary arteries. The microfilariae are swimming freely in the bloodstream, possibly in large numbers, and it is the microfilariae that can spread to other dogs through a mosquito. The microfilarias are killed so as to keep the dog from spreading the infection.
- The new arrival heartworm larvae, delivered from mosquito bites in the last 6 to 7 months. These are L3 and L4 larvae living in the skin (having arrived within the last 3 months). These will continue their maturation and repopulate the heart and pulmonary arteries if they are not killed before the adult worms.
- The L5 larvae and adult worms living inside the heart and pulmonary arteries. This group requires the arsenic compounds for destruction while the other two groups can be killed with less toxic products.

Killing the Microfilaria and Migrating Worms

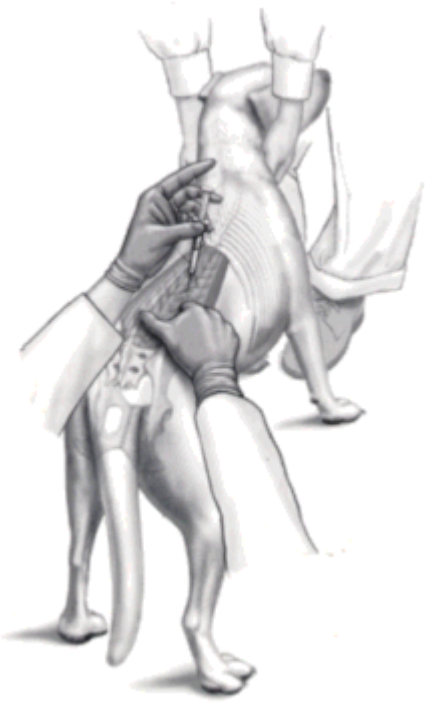
The first step in treatment is clearing the migrating immature worms. If we were to jump directly to killing the adult worms first, the adult worms we remove could be readily replaced shortly afterwards by those that were in the process of migration at the time of treatment. By addressing the migrating immature worms first, we minimize the number of

adult worms we must kill in the second step. Fewer adult worms dying at once means less risk.

Happily, the microfilariae, L3, and L4 larvae can all be killed by monthly ivermectin-based heartworm preventive products (i.e. Heartgard, Tri-Heart, etc.). The milbemycin-based products (Sentinel and Interceptor) will also do the same job but will kill the microfilariae much faster, which can create circulatory shock if there are large numbers of microfilariae dying all at one time. The newer products using selamectin and moxidectin do not clear microfilaria well enough to be used in the treatment of an active infection, so right now the ivermectin-based products seem to be the best for this use. The American Heartworm Society recommends 1 to 3 months of a preventive prior to treating the adult worms. How long you choose to wait depends on how urgent the dog's need is to have the adult worms removed. After all, it is the adult worms that cause heartworm disease, not the immature worms addressed by the preventives.

Killing the Adult Worms

The only product currently available for the treatment of adult heartworms is melarsomine dihydrochloride (Immiticide® by Merial). If you follow the manufacturer's recommendations, treatment can be done in two doses or three doses depending on the class of infection. Most universities, however, opt to treat all patients with the three-dose protocol as it creates a more gradual kill of the adult worms, which is safer in terms of embolism and shock.



The patient receives an intramuscular injection deep in the lower back muscles as shown above. This is a painful injection with a painful substance, and it is common for the patient to be quite sore afterwards at home. Pain medication may be needed. Be careful of the injection site as it may hurt enough to cause a dog to bite. An abscess may form at the site, which would require use of warm compresses. Approximately 30% of dogs experience some sort of reaction at the injection site that resolves in 1 to 4 weeks. Some dogs develop a permanent firm lump at the site of injection.

In the two-dose protocol, the dog receives a second injection the next day on the opposite side of the lower back. In the three-dose protocol, the dog comes back one month later for two doses 24 hours apart (the first dose represents an introductory treatment to kill some of the more sensitive worms.) Keep in mind, too many worms dying at once creates circulatory shock.

After treatment, the patient must be strictly confined for one month following the final treatment. No walks, no running around. The dog must live the indoor life. The reason for this is that embolism to some degree is, to some degree, inevitable and it is important to minimize embolism-related problems. Exercise increases heart rate and oxygen demand and we need the heart to rest during this recovery period.

Watch for:

- Coughing

- Fever
- Nose bleeds

If any of these occur, report them to the vet as soon as possible. The most critical time period is 7 to 10 days following a melarsomine treatment, but these signs can occur anytime in the following month.

Ivermectin Only

Melarsomine treatment is expensive and often out of reach for rescue groups, shelters, and many individuals. If the dog is stable (Class I), one option is to simply leave the dog on an ivermectin-based preventive. This option has led to a great deal of misconception about the ability of ivermectin to kill adult heartworms. Let us lay the rumors to rest now:

- Ivermectin does not kill adult heartworms.
- Ivermectin does shorten the lifespan of adult heartworms.
- Ivermectin does sterilize adult heartworms.
- Ivermectin does kill microfilaria (keeping the dog from being a source of contagion)
- Ivermectin does kill L3 and L4 larvae (preventing new infections).

This means that if you opt to treat a heartworm positive dog with an ivermectin-based heartworm preventive only, you can expect the dog to remain heartworm positive for as long as two years and the heartworm disease will be progressing during those two years. This is not good for the dog but certainly beats getting no treatment of any kind. This approach should only be considered for patients who are Class I and may be able to withstand prolonged heartworm infection.

What is *Wolbachia*?

Micrograph of a* Wolbachia *organism.

Wolbachia is a genus of rickettsial organisms, sort of like bacteria but not exactly. They live inside the adult heartworm. These organisms seem to be protective or beneficial to the heartworms; treating the dog with the antibiotic doxycycline, which kills *Wolbachia*, seems to sterilize female heartworms, meaning they cannot reproduce. *Wolbachia* is also thought to be involved in the embolism and shock that result when heartworms die. The role of this organism is still being investigated. If your veterinarian wants to pre-treat your heartworm-positive dog with doxycycline, it may be because of concerns regarding this organism.

The Pet Health Care Library Preventing Heartworm Infection in Dogs (Chemoprophylaxis)

Brands:

Ivermectin-based Products: Heartgard, Heartgard Plus, Iverhart Plus, Iverhart Max, Tri-Heart Plus
Milbemycin-based Products: Interceptor, Sentinel
Selamectin-based Products: Revolution
Moxidectin-based Products: Advantage Multi, Proheart6

Heartworm preventive medications are used to periodically kill larval heartworms that have managed to gain access to the dog's body. At this point, the products available are intended for monthly use. This means that they kill all the heartworm larvae (stage L3 and L4) that have accumulated in the past month each time they are given. Some products offer the ability to kill older larvae which helps keep the pet protected in case someone is late giving the heartworm preventive medication at some point. There are presently many choices, both topical and oral, plus, while the subject of this page is canine heartworm prevention, all the products discussed have feline formulations.

Ivermectin-based Products:
Heartgard, Heartgard Plus made by Merial
Iverhart Plus, Iverhart Max made by Virbac
Tri-Heart Plus made by Schering Plough

The approval of ivermectin in 1987 represented a huge breakthrough in heartworm prevention. Preventive medication for the first time could be given once a month instead of every day. These monthly medications utilize an extremely low dose of ivermectin that is adequate to kill any L3 and L4 larval stages inhabiting the pet's skin tissues at the time the medication is given. In other words, infection takes place but is halted every month when the medication is administered.

If Given to a Heartworm Positive Dog by Accident

In most cases, no reaction of any kind occurs when an ivermectin-based heartworm preventive is given to a heartworm-positive dog.

In fact, giving an ivermectin-based heartworm preventive to an infected dog is the first step in heartworm treatment. Ivermectin kills the developing larval worms and clears the circulating microfilariae, thus rendering the dog unable to spread its infection and minimizing the number of adult worms to be killed in the second phase of treatment when the adult worms are specifically addressed.

If the larval worms die too quickly, a shock-like circulatory reaction can occur so for this reason the American Heartworm Society recommends that the first dose of ivermectin be given under veterinary supervision. This allows the dog to be observed for several hours following the oral dose in case of trouble. That said, in most cases no reaction of any kind occurs and the larval worms are cleared without event. This does mean, however, that giving this product to a dog with heartworm will kill all circulating microfilariae and the dog will test erroneously heartworm negative by Difil or Knott testing. (ELISA test kits should still be accurate). In addition to killing microfilariae, ivermectin will also suppress reproduction in the adult female worms and shorten the overall life span of adult worms. Ivermectin does not kill adult heartworms (just the immature ones) although, as said, it

cuts their life expectancy.

The Reach Back Effect

There is also a phenomenon called the reach back effect. This means that if a dog goes off heartworm preventive medication for a prolonged period (four months was the time tested), re-starting preventive could still curb adult heartworm infection in the heart and pulmonary arteries. In the 1988 experiment by Atwell, dogs who went off heartworm preventive for four months and then restarted with ivermectin had 95% fewer adult heartworms than dogs who went without ivermectin, although it should be noted that some heartworms were still able to establish infection. This means that if you skip several doses of ivermectin accidentally, it is still worth picking up where you left off.

Other Parasites Covered

Ivermectin at the heartworm preventive dose is not strong enough to kill common intestinal parasites. Because of this fact, pyrantel pamoate, a dewormer, was added to cover hookworms and roundworms in the original Heartgard product. As other ivermectin-based products have entered the market, these have also added pyrantel pamoate to extend the spectrum of protection.

Whipworms are not covered by any of the ivermectin-containing products at this time, but in order to remain competitive in the market, manufacturers may pay for treatment for whipworm infections acquired while their product is administered. The products containing both ivermectin and pyrantel pamoate are Heartgard Plus, Iverhart Plus, and Tri-Heart Plus. Iverhart Max includes both pyrantel pamoate and praziquantel so as to cover tapeworms as well.

Breed Sensitivity

There are breed-related sensitivities with ivermectin (i.e. collie-related breeds have some difficulties) though at the low doses used in the prevention of heartworm disease are not a problem for any breed.

Use of Large Animal Products

It is neither safe nor legal to obtain large animal ivermectin products for use in dogs for heartworm prevention. Discussions of doses have circulated around the Internet and in other sources advocating the use of highly concentrated ivermectin formulas for heartworm prevention in dogs. These doses are not comparable to the miniscule doses in licensed heartworm preventive products and using them represents an element of gambling. Large animal ivermectin products are vastly more concentrated than those meant for dogs and it becomes problematic to dilute them properly. Even small doses of these products are unnecessarily high and if they are inadvertently given to a sensitive individual, death can result.

For information on these products from their manufacturers visit:
http://heartgard.us.merial.com/home/
www.iverhart.com
www.triheartplus.com

Milbemycin Oxime-based Products
Interceptor & Sentinel made by Novartis

This product is also given monthly, also clears microfilariae, acts by killing all L3s and L4s

accumulated in the month prior to administration, and will suppress female worm's ability to reproduce. There are a few important differences to note between this product and the ivermectin-based products, though.

If Given to a Heartworm Positive Dog by Accident

If milbemycin is inadvertently given to a dog who has active heartworm infection, the microfilariae are killed much faster than with the ivermectin products. This might sound like a good thing but in fact it increases the likelihood of the previously mentioned shock-like reaction when all the first stage larvae die at once. In a dog with a light infection this might not be important, but in a heavily infected dog it is safer not to use milbemycin to clear the microfilariae.

Of course, heartworm preventives are meant to be used in heartworm negative dogs. If these products are used according to their labeled instructions, this issue should never arise. Milbemycin-based preventives are safe and highly effective in preventing heartworms in dogs that are heartworm negative to begin with.

The Reach Back Effect

When milbemycin is given to a dog after a prolonged period without heartworm preventive (the Atwood experiment), the dog is expected to have 41% fewer heartworms than if heartworm prevention was not resumed. This was not as good a result as with the ivermectin products because ivermectin is better at killing older heartworm larvae. If one finds oneself in the situation of having skipped several months of heartworm prevention in the middle of heartworm season, one might do better to restart an ivermectin-based product rather than a milbemycin-based product.

Other Parasites Covered

Milbemycin, however, does not require the addition of other dewormers in order to provide a broad spectrum of parasite control. The milbemycin products control roundworms, hookworms, and whipworms without the addition of a second parasiticide. Milbemycin is also available combined with lufenuron for the control of fleas in the form of Sentinel. Lufenuron is an oral flea sterilizer that prevents any fleas feeding on the dog from laying viable eggs.

Milbemycin can also be used in the treatment of demodectic mange. A specific dosing schedule is needed to accomplish this; heartworm preventive doses are not adequate but milbemycin does offer a convenient treatment option for collie-type breeds.

There are no breed-related sensitivities for milbemycin.

For more information on Interceptor or Sentinel, see the Novartis Animal Health heartworm section.

Selamectin-based Products:
Revolution made by Pfizer

Ivermectin's entrance onto the anti-parasite warfront represented a culmination in the trend for broader and broader spectrum parasite control. Selamectin is a closely related cousin of ivermectin. It is designed for broad coverage of small animal parasites and will protect dogs not only against heartworm but also against ear mites, sarcoptic mange mites, ticks, and fleas. Cats are protected against heartworm, fleas, ear mites, roundworms, and hookworms. The product is topical, applied monthly and is fully approved for safe use in heartworm infected animals. Selamectin is not as effective at clearing microfilariae as other

products and thus is not generally used in the treatment of active heartworm infections.

See more information on Revolution from the manufacturer.

Moxidectin-based Products:
Advantage Multi made by Bayer
Proheart6 made by Fort Dodge

Moxidectin is another relative of ivermectin. In 2007 it was combined with imidacloprid, the active ingredient in Advantage, to create a broad spectrum topical for dogs and cats. The product prevents heartworm infection, kills roundworms, hookworms, and whipworms. The imidacloprid will kill the pet's fleas. As with selamectin, it can be given to heartworm positive dogs and it will decrease the number of circulating microfilariae but it is not a good choice in the treatment of active heartworm disease.

Moxidectin is available in Australia and Europe in a long-acting injectable form that is given once a year for heartworm prevention. A similar product, Proheart6, was previously available in the U.S. but it was withdrawn from the market due to adverse events. The long-acting products were developed to address the problem of accidental failure to administer the preventive on schedule. Since adverse events have not been problematic in Australia or Europe, it is possible that this mode of heartworm prevention may return to the U.S. as there is the potential to prevent a great deal of heartworm infection. Currently, however, the only moxidectin product available for small animals in the U.S. is Advantage Multi, which is given once a month as a topical.

See more information on Advantage Multi.

Proheart6 is an injection given once every six months, obviating the need for the owner to remember to use a monthly product. The moxidectin is contained in "microspheres," enabling the drug to last a full six months (or in the case of the Australian version of the same product, a larger volume is given and it lasts 12 months). In other countries, Proheart6 rapidly captured 40-50% of the entire heartworm prevention market but in this country, it was voluntarily withdrawn from the market in 2004 after a number of adverse reactions were reported. There has been great deal of controversy regarding these adverse reaction reports, especially since similar reactions have not been reported in the international market using the identical product made in the same manufacturing plant as the U.S. product. In June of 2008, Proheart6 returned to the U.S. market with some restrictions so that true reactions to the product can be tracked and not confused with other diseases or reactions to other medications. The FDA is studying the situation. The current restrictions are up for review in one year.

The restrictions in place are:

- All veterinarians prescribing Proheart6 must receive specific certification.
- Proheart6 may not be used in dogs under age 6 months or over age 7 years.
- A baseline blood panel is required prior to injection to rule out concurrent illness that could be confused with a drug reaction.
- The Proheart6 injection may not be given within 30 days of vaccination (to rule out any confusion between adverse drug reaction and vaccine reaction).
- The dog must be negative for heartworm infection before receiving the injection.
- The owner must sign a consent form prior to injection.
- The owner must receive an information sheet provided by Fort Dodge explaining the product and its use.

Proheart6 is also effective in controlling hookworm infection.

Learn more about Proheart6 made by Fort Dodge Animal Health.

When to Start Giving Heartworm Preventive Each Year?

Obviously the answer to this question is regional. Indeed it may be simplest to just use preventive medications all year round or to see what your regular veterinarian recommends for your area.

There is more to transmission than the simple presence of mosquitoes; it must also be warm enough for a long enough time period to allow the development of microfilariae to infect L3s within the mosquito's body. A simple formula involves counting the degrees above 57F reached each day. Each degree is called a heartworm development unit and when 234 heartworm development units have accumulated within a 30-day period, conditions have been reached that will allow the transmission of L3 heartworm to new hosts. A monthly heartworm pill, chewable, or topical must be given at the end of a month in which 234-heartworm development units has accumulated.

When 30 days pass and 234 heartworm development have not accumulated, mosquitoes will be dying from the cold before any microfilariae they carry can develop to the infective stage. Monthly heartworm preventive needs not be given after a month under these conditions.

If all this sounds complicated, it is. In addition, most of us have better things to do besides monitoring average weather temperatures. It may be simpler to use the product all year round or just go by the recommendations of a practicing veterinarian in the region in question.

Immiticide supplies run dry

August 9, 2011
By: Jennifer Fiala
For The VIN News Service

The only heartworm adulticide approved by the U.S. Food and Drug Administration (FDA) for use in canines is temporarily unavailable, with no known re-release date.

News of the Immiticide (melarsomine dihydrochloride) shortage surfaced last week with an open letter to practitioners from drugmaker Merial that warns of an outage expected to "last several weeks to months." The letter, dated Aug. 4, asked practitioners to help conserve Merial's dwindling Immiticide supplies by ordering product only to treat dogs with severe heartworm infestation. However, the notice of the shortage caused a run on remaining stock. The company's technical services department confirmed today that Merial is "officially out" of the drug.

"After mailing the Dear Doctor letter we experienced an unprecedented surge in Immiticide orders and depleted inventory much more rapidly than anticipated," explains Natasha Mahanes, a Merial spokeswoman.

Immiticide availability has been shaky since early last year, when Merial, the animal health arm of Sanofi, reported that its U.S. supplier could no longer obtain the product's active ingredient, and the FDA was hesitant to allow Merial's overseas supplier to fill American orders. As a result, Merial stopped allowing veterinarians to simply order and stock the drug in an effort to conserve U.S. supplies and implemented a "restricted distribution program." Translation: Veterinarians treating only severe cases of heartworm disease could access the drug on a case-by-case basis with approval from the company.

In an email exchange with the VIN News Service, Mahanes noted that Merial's latest Immiticide supply problems are not tied to the troubles of 2010. Rather, it is "a new and separate manufacturing challenge," she writes.

"This situation is related to technical issues providing finished product to us. The finished product is made by a manufacturing company in the U.S.," she explains. "… We are working diligently to mitigate this situation, and there is a possibility that an alternate source of supply may be identified."

That's encouraging news for veterinarians such as Dr. Skip Fix, a practitioner in Houston. With two boxes of Immiticide left in his clinic, Fix is pondering how best to ration it.

"At this moment I have a 50-pound dog that I'm going to treat," he says. "There are five bottles to a box, and he's going to need two-and-a half of them. We're trying to find out from the shelter near us if they need the remainder for a small dog so we can use every last drop of this.

"This shortage could take a month, it could take forever," Fix adds. "I usually have a couple heartworm cases going every week, so it is a concern."

Once his in-house supply runs dry, Fix plans on turning to a heartworm preventative and doxycyline to manage infestation — a protocol supported by the American Heartworm Society, slated soon to release updated guidance for practitioners on treating heartworm-positive dogs without Immiticide.

Dr. Tom Nelson, a past president of the American Heartworm Society and a practitioner at the Animal Medical Center in Anniston, Ala., notes that the use of doxycyline in combination with heartworm preventive has been shown to reduce pathology, the number of adult worms and the infective potential of microfilaria in canine patients.

"The shortage of Immiticide is unfortunate, but we're going to have to deal with it," he says.

Treating heartworm is tricky business. An infected dog, for example, must not vigorously exercise because an increase in heart rate raises the risk that fragments of dead worms in its blood vessels could cause thromboembolism — the formation of an embolism, in this case of dead worms — to the lungs, which usually presents as acute dyspnea. The condition is treatable with steroids but may prove fatal. Nelson notes that Immiticide quickly kills worms, thereby shortening the time that a dog's exercise must be restricted.

Slow-kill therapies, such as the use of heartworm preventatives, potentially allow for greater opportunity in which worms might block blood vessels, leading to worsened pulmonary pathology.

"Exercise should be restricted during the duration of the treatment. We're normally talking about 12 to 18 months," Nelson says.

AMERICAN HEARTWORM SOCIETY™ ESTABLISHED 1974

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The American Heartworm Society: Guidance for Heartworm Disease Management During the Adulticide Unavailability

Background

August 9, 2011: The American Heartworm Society became aware of a pending product unavailability of the only available heartworm adulticide product, IMMITICIDE®, for an undetermined duration.

Because there are no other approved products available for killing adult heartworms, the American Heartworm Society Board and Scientific Committee has developed and approved the following management plan for heartworm positive dogs during this period of adulticide unavailability. While the unavailability persists, heartworm-positive dogs should be managed to achieve three primary goals:

- Reduce potential pathology from the infection.
- Maintain the health of the dog until it can be appropriately treated.
- Prevent additional heartworm infection of the dog.

These goals may be achieved by strict adherence to the following:

- Limit the activity level of the dog to reduce pathology.[1,2]
- Carefully place the non-protected dog on heartworm prevention.[3,4,5,6,7]
- Administer doxycycline to reduce pathology and infective potential of heartworms.[8]

The Management Plan: Heartworm-Positive Dogs and Dogs Not Completing a Full Course of Adulticidal Therapy

1. **Verify any positive antigen test by performing a second antigen test, sourced from a different manufacturer.** If a dog is confirmed antigen positive or for dogs already initiated on, but not completed adulticidal therapy (due to product unavailability), a microfilariae test should be performed. In rare cases, the administration of heartworm preventives to microfilaremic dogs can result in shock-type reaction. For this reason professional observation is **highly** recommended.

    - **If *microfilariae are detected*, the dog should be pretreated with corticosteroids with or without antihistamines[9] and then administered a dose of heartworm preventive (macrocyclic lactone).[10]**
        - While all heartworm preventives affect microfilariae, the resulting immunologic reaction of the dog to the microfilariae can vary dramatically.[3,4,5,6,7] Therefore dogs should be kept under clinical observation for at least 8 hours following the initial dose of heartworm preventive to allow rapid, appropriate medical treatment should a shock reaction occur.
        - **Anti-inflammatory pretreatment:** Dexamethasone at 0.25 mg/kg intravenously and diphenhydramine at 2.2 mg/kg intramuscularly, **or** 1 mg/kg of prednisolone orally 1 hour before and 6 hours after administration of the first dose of preventive.[9]
        - Elimination of every single microfilaria is not the goal; the health, safety, and maintenance of the patient is the goal.

- Microfilariae will **likely** persist following preventive dosing.
- If the positive dog is already on prevention, continue regular monthly oral or topical dosing or twice yearly injections of preventives.

- **If the dog is negative for microfilariae, a heartworm preventive should be administered.**

2. **Dogs should then be ***maintained*** continuously on heartworm preventive to limit further infection of the dog until the adulticide product is again available.**

3. **Dogs should also receive doxycycline at 10 mg/kg BID for 4 weeks.** This dosing should be repeated quarterly until adulticide is available. (*Dose may be reduced to 5 mg/kg BID if tolerance issues exist.*)
   - Doxycycline has been demonstrated to affect the viability of subsequent heartworm stages.
   - Microfilariae will still be able to infect mosquitoes, but the infective larvae from these mosquitoes will be less capable of infecting another dog.
   - The doxycycline protocol would be 1 month on, 2 months off, 1 month on, 2 months off, etc.
   - The combination of macrocyclic lactone and doxycycline is proven to be more effective than macrocyclic lactones alone. Research studies have demonstrated macrocyclic lactone/doxycycline combinations will:
     - Shorten the life span, but not eliminate the adult worm infection.
     - Lessen the pathology associated with worm death.
     - Disrupt heartworm transmission.

4. **Restrict ALL activity of the dog! Limit ALL exercise!**
   - The severity of heartworm disease is directly related to the activity level of the dog.
   - As physical activity increases, pathology associated with adult heartworms increases.

5. **Any dogs that are symptomatic for heartworm infection should be treated medically to relieve signs of respiratory distress.** Surgical options should be weighed for dogs exhibiting cardiovascular compromise.

6. **When adulticide product is again available:**
   - Adult heartworms will **likely** persist in the dogs managed under this protocol.
   - Nevertheless, dogs should be retested to revalidate the presence of an adult heartworm infection.
   - If positive, the dog should be appropriately treated for adult heartworms with the approved adulticidal product.

REMEMBER THE GOALS:
- Reduce potential pathology from the infection.
- Maintain the health of the dog until it can be appropriately treated.
- Prevent additional heartworm infection of the dog.

For further background information considered in development of this management protocol, refer to the American Heartworm Society's Current Canine Guidelines under the Veterinary Resources at www.heartwormsociety.org.

This American Heartworm Society guidance statement is based upon the cumulated knowledge and expertise of the American Heartworm Society's Board of Directors and AHS Scientific Committee experts, considering the latest information on heartworm disease, disease processes, known drug activity, and impact of these factors on disease management as of August 2011.

The American Heartworm Society needs your support. Please help us by becoming a member so that we can continue to provide information and guidance to the profession. Membership applications are available at www.heartwormsociety.org.

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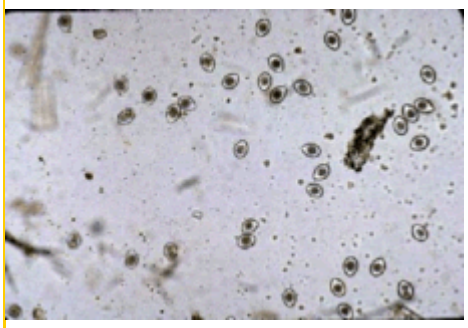
The Pet Health Care Library

Coccidia

What on Earth are Coccidia?

Coccidia are single-celled organisms that infect the intestine. They are microscopic parasites detectable on routine fecal tests in the same way that worms are, but coccidia are not worms and are not susceptible to deworming medications. They are also not visible to the naked eye. Coccidia infection causes a watery diarrhea that is sometimes bloody; it can be a life-threatening problem, especially to a young or small pet.



There are many different species of coccidia but for dogs and cats, the most common infections are with coccidia of the genus* Isospora *(pictured here). The information presented here pertains to* Isospora *species.

Where do Coccidia come from?

Oocysts (pronounced o'o-sists), like those shown above, are passed in stool. In the outside world, the oocysts begin to mature or sporulate. After they have adequately matured, they are infective to any host (dog or cat) that accidentally swallows them.

To be more precise, coccidia come from fecal-contaminated ground. They are swallowed when a pet grooms/licks the dirt off. In some cases, sporulated oocysts are swallowed by mice and then the host is infected after eating the mouse. Coccidia infection is especially common in young animals housed in groups, such as shelters, rescue areas, kennels, etc. This is a common parasite and is not necessarily a sign of poor husbandry.

What Happens Inside the Host?

The sporulated oocyst breaks open and releases eight sporozoites. Each of these sporozoites finds an intestinal cell and begins to reproduce inside it. Ultimately, the cell is so full of what are called merozoites at this stage that the cells bursts, releasing merozoites that seek out their own intestinal cells so the process begins again. It is important to note how thousands of intestinal cells can become infected and destroyed as a result of accidentally swallowing a single oocyst.

As the intestinal cells are destroyed in larger and larger numbers, intestinal function is disrupted and a bloody, watery diarrhea results. The fluid loss can be dangerously dehydrating to a young or small pet.

How are Coccidia Detected?

A routine fecal test is a good idea for any new puppy or kitten whether there are signs of diarrhea or not as youngsters are commonly parasitized. This sort of test is also a good idea for any patient with diarrhea and is recommended at least once a year for healthy dogs and cats as a screening test. The above photograph shows coccidia oocysts seen under the microscope in a fecal sample. Coccidia are microscopic and a test such as this is necessary for diagnosis. Small numbers of coccidia can be hard to detect, so just because a fecal sample tests negative, this doesn't mean the pet isn't infected. Sometimes several fecal tests are performed, especially in a young pet with a refractory diarrhea (one that won't go away); parasites may not be evident until later in the course of the condition.

How is Coccidia Treated?

The most common medicines used against coccidia are called coccidiostats. They inhibit coccidial reproduction. Once the numbers stop expanding, it is easier for the patient's immune system to catch up and wipe the infection out. This also means, though, that the time it takes to clear the infection depends on how many coccidia organisms there are and how strong the patient's immune system is. A typical treatment course lasts about a week or two, but it is important to realize that the medication should be given until the diarrhea resolves, plus an extra couple of days. Medication should be given for at least 5 days total. Sometimes courses as long as a month are needed. In dogs and cats, sulfa-based antibiotics are the most commonly used coccidiostats.

The use of sulfa drugs in pregnancy can cause birth defects. Sulfa drug use can also lead to false positive test results for urine glucose.

There is another medication that is worth mentioning called ponazuril, a large animal product. This medication is actually able to curtail a coccidial infection in five doses or less and has been used in thousands of shelter puppies and kittens with no adverse effects. This product would seem to be superior to the usual sulfa drugs, but the problem that keeps it from becoming a mainstream treatment is the fact that it is available only as a paste for horses and must be diluted down to create an appropriate small animal formula. The large volumes of product yielded are not cost effective if only occasional patients are treated for this parasite. Ponazuril is thus most commonly used in kennels, catteries, and animal shelters though one may be pleasantly surprised to find it in stock at a regular veterinary office.

Can People or other Pets Become Infected?

While there are species of coccidia that can infect people (*Toxoplasma* and *Cryptosporidium,* for example), the *Isospora* species of dogs and cats are not infective to people. Other pets may become infected from exposure to infected fecal matter but it is important to note that this is usually an infection of the young (i.e. the immature immune system tends to let the coccidia infection reach large numbers whereas the mature immune system probably will not.) In most cases, the infected new puppy or kitten does not infect the resident adult animal.

The Pet Health Care Library

Fleas: Know your Enemy

Despite numerous technological advances, fleas continue to represent a potentially lethal plague upon our pets. Current products are effective so there is little reason for this; the problem seems to be one of understanding.

There are over 1900 flea species in the world. Pet owners are concerned with only one: Ctenocephalides felis, the cat flea. This is the flea that we find on our pets (cats, dogs, rabbits, and other species) in 99.9% of cases and in order to understand how to control the damage caused by this tiny little animal, you should learn all you can about it.

What Kind of Damage Can Fleas Cause?

It would be a grave mistake to think of the flea as simply a nuisance. A heavy flea burden is lethal, especially to smaller or younger animals. The cat flea is not at all selective about its host and has been known to kill dairy calves through heavy infestation. Conditions brought about via flea infestation include:

• Flea Allergic Dermatitis (fleas do not make animals itchy unless there a flea bite allergy)

• Flea Anemia

• Feline Infectious Anemia (a life-threatening blood parasite carried by fleas)

• Cat Scratch Fever/Bartonellosis (does not make the cat sick but the infected cat can make a person sick)

• Common Tapeworm infection (not harmful but cosmetically unappealing)

Fleas can kill pets.

This is so important that we will say it again: Most people have no idea that fleas can kill. On some level, it is obvious that fleas are blood-sucking insects but most people never put it together that enough fleas can cause a slow but still life-threatening blood loss. This is especially a problem for elderly cats who are allowed to go outside. These animals do not groom well and are often debilitated by other diseases. The last thing a geriatric pet needs to worry about is a lethal flea infestation and it is important that these animals be well protected.

Also consider that in about 90% of cases where an owner thinks the pet does not have fleas, a veterinarian finds obvious fleas when a flea comb is used. Despite the TV commercials, the educational pamphlets, the common nature of the parasite, there are still some significant awareness problems and a multitude of misconceptions.

Myths Veterinarians Hear Nearly Every Day

• My pet cannot have fleas because he lives entirely indoors.

Fleas thrive particularly well in the well-regulated temperatures in the home.

• My pet cannot have fleas because if there were any fleas they would be biting (insert name

of a person in the family reportedly sensitive to flea bites). Since this person is not being bitten, there must not be any fleas.

Despite *Ctenocephalides felis'* ability to feed of a wide variety of hosts, this flea definitely does not prefer human blood and won't eat it unless absolutely necessary. A newly emerged adult flea is hungry and may well take a blood meal from the first warm body it finds. An adult flea knocked off its normal host will also be desperate to find a new host and may feed on the nearest warm body it can find. In general, adult fleas regard human blood as a last choice and humans tend not to be bitten unless flea population numbers are high.

• We do not have fleas because we have only hard wood floors.

Fleas love to develop in the cracks between the boards of hard wood floors.

• My pet cannot have fleas because I would see them.

You cannot expect to see fleas as many animals are adept at licking them away. Sometimes all that is seen is the characteristic skin disease.

Fleas are adaptive and their life cycle is always active: eggs are laid, larvae are developing, pupae are growing, etc. The environmental temperature controls how fast this occurs. If you want to eradicate the flea population in a specific home, it is best to attack when numbers are low in the winter. It is a mistake to stop flea control products in the winter as it will be much harder to gain the upper hand in the spring and summer when the populations are rising.

The MORAL OF THE STORY IS THAT FLEAS SHOULD NOT BE UNDERESTIMATED AND IT IS IMPORTANT TO HIT THE FLEA POPULATION WHEN IT IS WEAKEST. HIT THEM HARD!!

The Flea Life Cycle

Learn it, know it, live it. There are four life stages of the flea and it is important to know how to break this life cycle in more than one place. This two-step approach provides the most rapid control and the least resistance to flea control agents in future flea generations.

The Egg

At any given time about one third of the flea population in someone's home is in the egg stage. The adult female flea lays up to 40 eggs daily. The eggs are laid on the host where they fall off to hatch in the environment. Eggs incubate best in high humidity and temperatures of 65 to 80 degrees Fahrenheit. (18.3-26.6 Celsius).

The Larvae

At any given time about 57% of the fleas in someone's home are in the larval stage. Larvae are like little caterpillars crawling around grazing on the flea dirt that is generally in their vicinity. Flea eggs and flea dirt both fall off the host. When the eggs hatch, there is a bounty of food prepared lovingly by all the host's fleas waiting for the hatchlings. This is the stage that picks up tapeworm eggs, which are likely to be in the vicinity, as they graze.

As they get to a certain age and size, a molt occurs. The first larval stage is called the first instar. After the first molt, the larva becomes the second instar. After the third molt, the larva

is called a third instar larva and is capable of spinning a cocoon and pupating.

The time between hatching and pupating (i.e., the time spent in the larval stage) depends on environmental conditions. It can be as short as 9 days.

Note: Larvae are killed at 95 degrees. This means that they must live in some area where they are protected from summer heat. This means the shade of the yard or indoors.

The Pupae

By this life stage most young fleas have been killed off by an assortment of environmental factors. Only 8% make it to the pupal stage but once they have spun cocoons they are nearly invincible. The cocoon is sticky and readily picks up dust and dirt. Inside the developing cocoon, the pupa is turning into the flea that we are familiar with. They are especially protected under carpet, which is why carpet has developed such a reputation as a shelter for fleas.

The pupa can remain dormant in its cocoon for many months, maybe even up to a year as it waits for the right time to emerge.

The Unfed Adult Flea

After the pupa develops, it does not automatically emerge from its cocoon. Instead, it is able to remain in the cocoon until it detects a nearby host. The mature pupa is able to detect the vibrations of an approaching host, carbon dioxide gradients, and sound and light patterns. When the mature pupa feels the time is right, he emerges from the cocoon, hungry and eager to find a host.

A common scenario occurs when a dog is boarded during the owner's vacation. The owner picks up the dog from the boarding kennel and returns home. The mature pupae have been waiting for a host and when the dog enters the home, a huge number of adult fleas emerge at once and attack the dog creating a sudden, heavy infestation. Often the boarding kennel is blamed for giving the dog fleas. What really happened was that the pupae waited to emerge while there was no host present and then they all emerged suddenly when the host arrived.

An unfed flea is able to live for months without a blood meal but during that time it is aggressively using all its powers to locate a host. Once it finds a host, it will never purposely leave the host.

The Fed Flea

After the adult flea finds a host and takes its first blood meal, metabolic changes occur that alter the flea forever. The flea is now called a fed flea and, if separated from its host, will die in only a few weeks without a blood meal. The female flea begins to produce eggs within 24 to 48 hours of her first blood meal and will lay eggs continually until she dies.

The average life span of the adult flea is 4 to 6 weeks, depending on the grooming abilities of the host.

ON AVERAGE, THE TIME PERIOD FROM EGG TO ADULT FLEA IS ABOUT 3 WEEKS.

A Few Words on the Common Tapeworm

There are many species of tapeworm but the one most of us are familiar with is the common

tapeworm, Dipylidium caninum. You should be familiar with this species and its life cycle.

Years ago, flea control meant foggers, shampoos, powders, collars, and sprays. While these products are still available, they have fallen largely aside in favor of the next generation products.

The next generation started in 1995 with the introduction of Program, an oral product that could be given once a month to a dog or cat and would sterilize - but not kill - any flea that bit the pet. The following year came Advantage and Frontline, topical products that could efficiently kill fleas for a month following an easy application. From there, Advantage has been modified to control additional parasites such as ticks and heartworm (Advantix, Advantage Multi), Frontline has been supplemented with flea sterilizers (Frontline Plus), and new insecticides (Revolution, Comfortis, Vectra, Promeris, Capstar) have been introduced.

At this point there are so many different products with so many additional effects that it is easiest to review them in table form. LINK Flea Product Comparison Tables

Is Resistance Futile?

We learned long ago that insecticide use represents a selection factor in a flea population. The resistant individuals survive and pass their genes on to offspring. Eventually a resistant population is produced. We want to avoid creating a population of fleas who laugh at our best insecticides. There are two ways of doing this:

The First Way to Avoid Resistance: Change Products Periodically
This seems simple and even obvious. If you want to make a resistant population, then keep exposing the population to the same insecticide and after enough generations your population will be resistant. If you switch to another insecticide, the group will be totally sensitive to the new insecticide. After a few more generations, change again.

Working against this method is the fact that advertisers encourage people to continue to use a product they like and this is, in fact, what people tend to do. The power of marketing is strong though, technically, it is better in the long run if a household alternates between two flea products each year.

The Second Way to Avoid Resistance: Use a Flea Sterilizer
A group of fleas that survives exposure to Frontline or Advantage cannot pass on their resistance genes if they have been sterilized by a second product. Program interferes with the production of chitin (the hard material making up the insect exoskeleton). The adult flea has already made its chitin but its off-spring need to develop a chitin egg-tooth to escape their eggs after development into larvae. A larva whose mother has had a big drink of lufenuron-laden blood will not be able to hatch.

Another such sterilizer is methoprene (the "plus" in Frontline Plus). Methoprene was developed as an additive to flea sprays and foggers. It is totally non-toxic - it doesn't even kill fleas - and represents a group of insect control agents called insect growth regulators or juvenoids. Methoprene mimics a youth hormone of the flea so that larvae who consume it in flea dirt cannot mature and eggs laid by female fleas who have been topically treated with it cannot develop. Twenty years ago, this compound was a miracle in flea control. For the first time it enabled the life cycle to be broken in two places. Now methoprene is rather old hat but it has been included in Frontline to prevent Frontline resistance. Newer insect growth regulators have been released and are also in use (see flea comparison chart).

Resistance is an important phenomenon and it should not be ignored. You may inadvertently

be promoting resistance without realizing it.

Look for this clue:

• At first the product worked really well but now it must be applied again after 2 to 3 weeks. It doesn't last the whole month anymore.

When someone starts to use the product more frequently in this way, they are increasing the selection pressure and creating resistance more rapidly. What they should do in this situation instead, is add a sterilizer or change to another product.

In conclusion, fleas are here to stay one way or the other. Know as much about this pest as you do about the dogs and cats that it feeds upon. You cannot know too much when it comes to flea control.

Additional Questions

Q: On a given dog or cat, sometimes the fleas look smaller than average. Are these baby fleas?

A. No. Remember the flea life cycle. The fleas you see on a dog or cat are adult fleas. They vary in size depending on the nutrients they got in prior development as well as individual genetic make-up. Adult fleas have an exoskeleton made of chitin, as do all insects. They can't grow bigger than they are.

Q: I put the topical product on the dog 3 weeks ago but now I'm seeing fleas again. Do I need to put more on?

A: No. Remember how these products work. In the first 20 days or so, the topicals reliably kill fleas before they have a chance to bite the host. In the last 10 days, they don't kill as quickly. Seeing fleas does not mean the product isn't working and you definitely should not reapply the product more frequently (they will get resistance). If you don't like seeing any fleas at all in the last 10 days of the topical application, a few Capstar tablets for home use ought to take care of this situation.

Q: Is it OK to save money by getting a large tube of one of the topical products and dividing it up with a syringe into smaller doses?

A. Yes and no, depending on the product. Some products are licensed as insecticides through the EPA and some are licensed as drugs through the FDA. Of those that are drugs, some are over-the-counter and some are prescription. Advantage and Frontline are insecticides and they may not be used in any manner other than the way they are labeled. Larger sizes cannot be broken up into smaller doses legally.

The products that are labeled as drugs include: Program, Revolution, and Capstar. These products can be used with some leeway but only according to the doctor's discretion, so ask your veterinarian.

Q: Why is buying product from the Internet or from the pet supply store some kind of a big deal?

A: With the flea product revolution of 1995, the market for flea products changed from being primarily pet supply store / over-the-counter outlets to primarily directly through veterinarians. The pharmaceutical companies like this arrangement as they feel that their products are now being marketed by trained personnel who can explain best how the product

should be used or not used. The veterinarians also like this arrangement as they have more input regarding what their patients are using. The pet supply stores do not like this arrangement at all as they have lost their market-share. In an effort to gain it back, they have resorted to a number of black market techniques (paying large sums of money to veterinarians to order product for them, going to other countries to buy product and smuggling it back to the U.S. for re-sale, even counterfeiting product). We caution anyone who buys flea products from a black market source. Product purchased through pet supply stores or from an online source that is not a veterinary hospital is not guaranteed by the manufacturer.

THE PET HEALTH LIBRARY
By Wendy C. Brooks, DVM, DipABVP
Educational Director, VeterinaryPartner.com

Giardia

When stained, the *Giardia* organism appears to have a funny face.

Giardia is the genus of a protozoan parasite that is infectious to both humans and pets all over the world. *Giardia* consists of flagellates, which mean they move by means of several whip-like structures called flagella. They live as a form called a trophozoite, or "troph" for short, in the intestine where they cause diarrhea. In fresh fecal samples, trophozoites can sometimes be captured. They swim around in a jerky fashion characteristic of flagellates and appear as a funny face (the two nuclei form the eyes and median bodies form the mouth).

After a short period of time outside the host's intestine, the trophozoites round up and form cysts, which enable them to survive environmental conditions without a host to protect them. The cyst can live for many months with two incompletely formed trophozoites inside, ready to infect a new host. Contaminated water is the classical source of a *Giardia* infection.

After it has been swallowed, the cyst shell is digested away freeing the two trophozoites who go forth and attach on the intestinal lining. The troph has a structure called a ventral disc, which is like a suction cup and attaches the organism's body to the intestine. If the troph wants to move to another spot, it lifts itself up and swims to a new spot via its flagella (trophs tend to live in different intestinal areas in different host species, and depends on the host's diet). The troph may round itself up and form a cyst while still inside the host's body. If the host has diarrhea, both trophs and cysts may be shed in the diarrhea; either form can be found in fresh stool.

After infection, it takes 5 to 12 days in dogs or 5 to 16 days in cats for *Giardia* to be found in the host's stool. Diarrhea can precede the shedding of the *Giardia*. Infection is more common in kennel situations where animals are housed in groups.

How Does *Giardia* Cause Diarrhea?

No one is completely sure but infection seems to cause problems with normal intestinal absorption of vitamins and other nutrients. Diarrhea is generally not bloody. Immune-suppressive medications such as corticosteroids can re-activate an old *Giardia* infection.

Diagnosis

In the past, diagnosis was difficult. The stool sample being examined needed to be fresh, plus *Giardia* rarely show up on the usual fecal flotation testing methods used to detect other parasites. Traditionally, a fecal sample is mixed in a salt or sugar solution such that any parasite eggs present will float to the top within 10 to15 minutes. Some tricks that have been used to facilitate

finding *Giardia* include:

- Being sure to examine a direct smear of the fecal sample in hope of finding swimming trophs.
- Floating the sample in zinc sulfate, a solution that has been found superior in getting *Giardia* cysts to float.
- Staining the sample with some sort of iodine under the microscope to make the *Giardia* show up easier.

What has made *Giardia* testing infinitely easier is the development of a commercial ELISA test kit, which similar in format to home pregnancy test kits. A fecal sample is tested immunologically for *Giardia* proteins. This method has dramatically improved the ability to detect *Giardia* infections and the test can be completed in just a few minutes while the owner waits.

Giardia shed organisms intermittently and may be difficult to detect. Sometimes pets must be retested in order to find an infection.

Treatment

A broad spectrum dewormer called fenbendazole (Panacur®) seems to be the most reliable treatment at this time. Metronidazole (Flagyl®) in relatively high doses has been a classical treatment for *Giardia* but studies show it to only be effective in 67% of cases. The high doses required to treat *Giardia* also have been known to result in temporary neurologic side effects or upset stomach. For some resistant cases, both medications are used concurrently. The ELISA test for *Giardia* should go negative within 2 weeks of treatment indicating success.

Because cysts can stick to the fur of the infected patient and be a source for re-infection, the positive animal should be bathed at least once in the course of treatment.

Not all patients with *Giardia* actually have diarrhea but because *Giardia* is the most common intestinal parasite affecting humans in North America, treatment is generally recommended for the pet who tests positive even if no symptoms are seen. The idea is to reduce human exposure.

Environmental Decontamination

The most readily available effective disinfectant is probably bleach diluted 1:32 in water, which in one study required less than one minute of contact to kill *Giardia* cysts. Organic matter such as dirt or stool is protective to the cyst, so on a concrete surface basic cleaning should be effected prior to disinfection. Animals should be thoroughly bathed before being reintroduced into a "clean" area. A properly chlorinated swimming pool should not be able to become contaminated. As for areas with lawn or plants, decontamination will not be possible without killing the plants and allowing the area to dry out in direct sunlight.

A Footnote on Vaccination

A vaccine against *Giardia* was previously available, not to prevent infection in the vaccinated animal but to reduce the shedding of cysts by the vaccinated patient. In other words, the vaccine was designed to reduce the contamination of a kennel where *Giardia* was expected to be a problem. This would be helpful during an outbreak in a shelter or rescue situation but is not particularly helpful an average owner wants to simply prevent infection. Because of limited usefulness of the vaccine, its manufacture was discontinued in 2009.

The Pet Health Care Library

Hookworms

The hookworm (*Ancylostoma caninum, Ancylostoma braziliense, Uncinaria stenocephala*) is one of the classical internal parasites of puppies, the others being roundworms, tapeworms, and coccidia. Hookworm infection has several features that are of interest to the caretakers of dogs:

- Hookworms (particularly *Ancylostoma caninum*) suck blood.
- Hookworms can be transmitted to unborn pups.
- Hookworms can infect humans.

adult hookworm (note teeth)

Before elaborating on these aspects of hookworm infection, it is important to understand the life cycle of the hookworm, encompassing how infection happens, how the parasite lives, etc.

Hookworms living inside the intestines

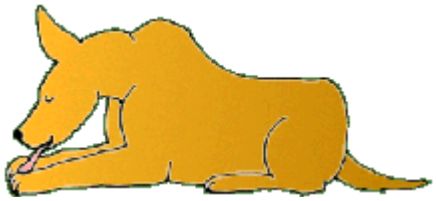
Life Cycle of the Hookworm

The adult hookworm lives in the small intestine of its host. It hangs on to the intestinal wall using its six sharp teeth. Unlike other worms that just absorb the digested food through their skin as it passes by; the hookworm feeds by drinking its host's blood. The adult worm lives and mates within the host and ultimately, the female worm produces eggs. Hookworm eggs are released into the intestinal contents and passed into the world mixed in with the host's stool.

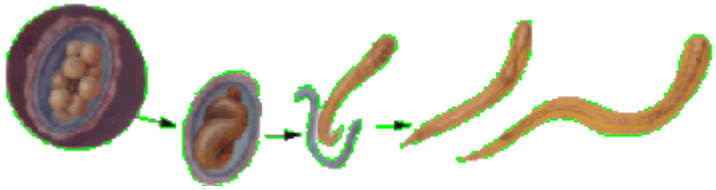
hookworm eggs

hookworms living in soil

The egg hatches in the environment and develops from a first stage larva (the hatchling) to a second stage larva and finally a third stage larva, which is ready to infect a new host.



The larva can infect its new host in several ways. One way is to penetrate the host's skin directly through the feet or belly or whatever part of the skin is touching the ground. Another way for the larva to gain entry to the new host is to be present in soil that is licked and swallowed by the host as it cleans itself.



Hookworm eggs develop into larvae, ready to infect host through the skin

Once the larvae are inside the host, they make their way to the intestine where some worms simply stay and mature into adulthood. Other individuals are bolder, tunnel out of the intestine, and migrate to the lung tissue. In the lung, the larvae develop into fourth stage larvae and when they are ready they break out of the lung, climb up the trachea, get coughed into the throat and swallowed. Once back in the intestine, these well-traveled worms will complete their maturation to adulthood, rejoining friends that never left the intestine on a migration.

Not all the worms that begin this treacherous migration complete it. As they emerge from one tissue to move on to the next, some fall into a state of arrest where they go dormant and encyst. These larvae remain inactive periodicallyemerging and continuing their migration.

The adult worms live by sucking blood from the intestine. Their eggs are passed by the host into the environment where a new host picks them up. The developing larvae may migrate widely through the new host's body before settling down to complete their maturation.

Now let us return to the points we want to emphasize.

Hookworms Suck Blood

Hookworm infection can be looked at as a natural check in the canine population as it is frequently lethal to young puppies. A young puppy is growing and that includes making enough new blood to serve not only its needs but also the needs of its growth. Growing requires a tremendous red blood cell production from the puppy's bone marrow, yet in the hookworm-infected puppy this process is being sabotaged by numerous tiny vampires within. The puppy may be effectively bled to death.

Infected puppies are commonly pale, weak, and have long-standing deficiencies. They may or may not have diarrhea.

Treatment involves deworming with one of several products: mebendazole (Telmintic®), fenbendazole (Panacur ®), or pyrantel pamoate (Nemex ®, Drontal ®, Strongid T ®). Deworming should be repeated in approximately 30 days. These products are not absorbed into the host's body from the GI tract and can only kill the worms living within the GI tract. The point of the second deworming is to kill worms in the process of migration at the time of the first deworming, allowing them an additional month to complete their migration. We currently do not have a deworming strategy effective against the encysted larvae in other areas of the host's body.

Simply killing the worms will not be sufficient to save the life of a severely affected puppy. Like any other blood loss, a transfusion may be needed to keep the puppy alive until it can replace its own lost red blood cells. An iron supplement is frequently needed as well.

Hookworms are Transmitted to Unborn Pups

Infection of a very young puppy can occur in two ways not addressed in the above description of transmission.

Typically an infected mother dog will have encysted larvae all around her body. Throughout the adult dog's life, some larvae will awaken, break out of their cysts, and complete their migration to the GI tract.

Pregnancy hormones unfortunately serve as little wake-up calls to encysted hookworm larvae, only this time the little worms migrate to the unborn puppies and to the mammary gland.

Some members of the litter will be born infected. Others will become infected by drinking the contaminated milk of their own mother. If this is not enough to infect the entire litter, others will become infected from the soil of their own nest, which will quickly become contaminated, with the stool of the infected litter.

It is clear why puppies are at risk over adult dogs when it comes to hookworms. The Centers for Disease Control and Prevention recommends automatically deworming puppies for hookworms beginning at age 2 weeks in areas where hookworms are common.

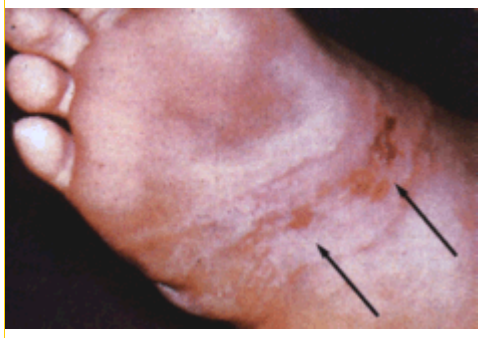
Can We Prevent Transmission from the Mother?

The answer is yes but daily deworming is required through the second half of pregnancy and into the nursing period. A regular single deworming will not be effective in protecting the litter. A special protocol using fenbendazole (Panacur ®) has been found to be effective in preventing both roundworm and hookworm infection in unborn puppies.

Ask your veterinarian about this method if you are contemplating breeding a female dog. Female dogs using Proheart6 for heartworm prevention are believed to pass fewer hookworm larvae on to their pups.

Hookworms Can Infect Human Beings

Cutaneous Larva Migrans (CLM) occurs as red, inflamed lesions in the skin where the larvae of canine hookworms burrow under the skin



Contaminated soil is an important hookworm source when it comes to a human disease called cutaneous larva migrans. Running barefoot through the park or beach may seem pleasant but if the soil has been contaminated with canine fecal matter, the eager infective larvae may be waiting to penetrate your skin.

Hookworm infection in the skin is intensely itchy but usually treatable. The local restrictions on bringing dogs to local beaches and the strict clean-up laws reflect concern for hookworm (and roundworm) infection in people.

Humans can also become infected by eating improperly washed vegetables, which may harbor contaminated soil. Humans have been found with hookworm intestinal infection. This would be a challenging diagnosis as it is not usually expected but the good news is that it is treated fairly easily when it is discovered.

Please visit the CDC's hookworm fact sheet at:
http://www.cdc.gov/ncidod/dpd/parasites/hookworm/factsht_hookworm.htm

Decontaminating the Environment

Many people are concerned about how to decontaminate the backyard or property that has housed an infected dog. The good news is that unlike roundworms that are extremely hardy in the environment, hookworm eggs deplete their energy reserves in a few months and die. Further, hookworm eggs do not survive freezing temperatures.
If you use bleach to clean an area, the protective coating is removed from the hookworm egg and the egg will become dehydrated and will die. Borates raked into the soil will also kill hookworm eggs but will kill grass and vegetation as well.

Prevention

Most heartworm preventives will also prevent hookworm infection.

Feline Hookworms

There are two species of hookworms in cats: *Ancylostoma tubaeforme* and *Ancylostoma braziliense*, the former being the most aggressive blood sucker. The story is pretty much the same for cats with a few exceptions:

- Kittens cannot be infected before birth nor can they be infected by nursing. Cats are generally infected by larvae invading the skin or by eating an infected prey animal.

- Dogs can become infected by eating an infected vertebrate host and so can cats but there is an important invertebrate can infect a cat: the cockroach. A scuttling bug can be a tempting toy for a cat but eating the cockroach can transmit hookworm larvae.

- The Companion Animal Parasite Control Council recommends deworming kittens beginning at age 3 weeks with pyrantel pamoate.

- There are numerous products approved for the treatment of feline hookworm infection: ivermectin, milbemycin oxime, emodepside (active ingredient in Profender®), selamectin, and moxidectin.

The Pet Health Care Library

Roundworms: Dogs & Puppies

Toxocara Canis and *Toxocara Leonina*: Roundworms of Dogs and Puppies

There are two species of roundworms affecting dogs and puppies: *Toxocara canis* and *Toxascaris leonina*. Both are treated with the same medication protocol so when eggs are seen on a fecal flotation exam it may not be necessary to determine which species is present. *T. leonina* can infect both dogs and cats, so identifying this roundworm might be helpful in indicating which pets in the household are at risk for further contagion.

Note: Fresh feces are not infectious.

Toxocara Canis

How Infection Occurs

In dogs, there are four ways by which infection with *Toxocara canis* occurs:

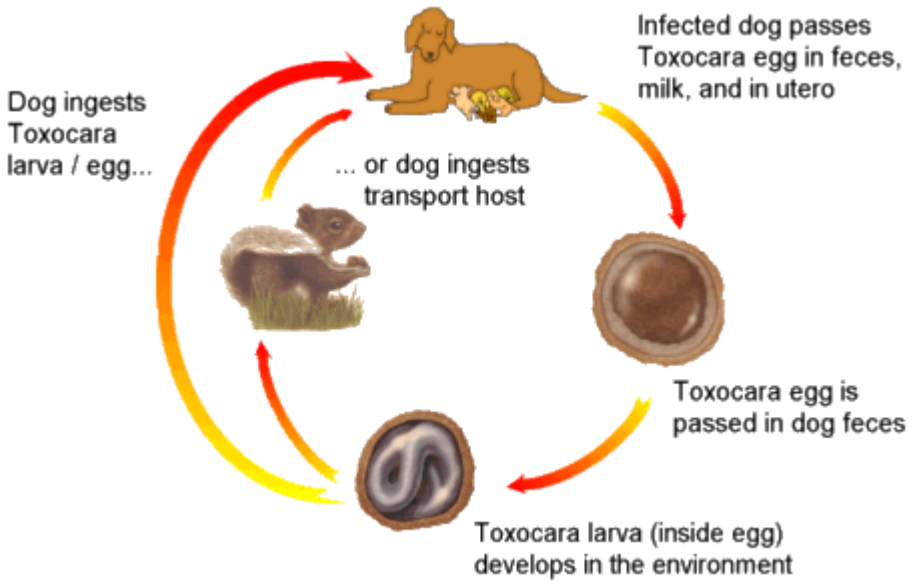
- Consuming infective worm eggs from soil in the environment (generally through normal grooming).
- Nursing from an infected mother dog.
- Consuming a prey animal (usually rodent) that is carrying developing worms.
- During embryonic development when an infected mother dog is pregnant (most puppies are infected this way).

Note: cats cannot be infected with *Toxocara canis.*

adult Toxocara worms

Life as a Roundworm

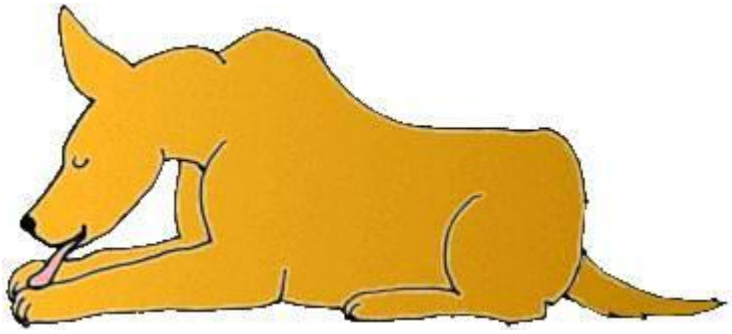
Toxocara canis has one of the most amazing life cycles in the animal kingdom. It is crucial to understand this life cycle if effective treatment is to be pursued.



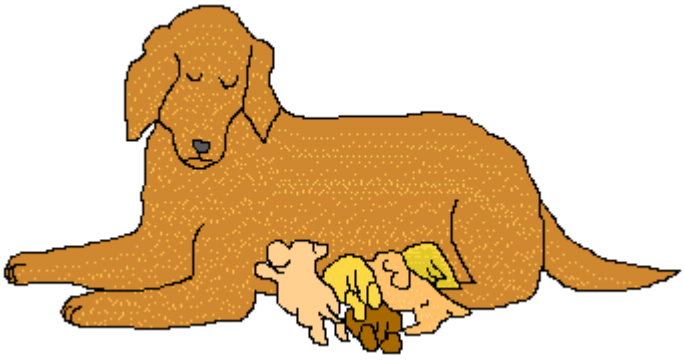
Step One: Toxocara eggs are passed in the host's feces.

If a fecal sample is tested, the eggs can be detected but the eggs are too young to infect a new host at this stage; the worm inside must develop for a month or so before it can establish infection. During this time of worm egg development, the feces has melted into the environmental soil and is no longer evident; the worm eggs are loose in the garden (or other environmental) dirt. If environmental conditions are favorable, it takes about a month for the egg to become infective but *Toxocara* eggs are famous for weathering harsh environmental conditions. Eggs can remain infective for months to years.

Note: Fresh feces are not infectious. **Soil contaminated with feces is infectious.**



Step Two: The egg containing what is called a second stage larva is picked up from the dirt by a dog or by some other animal, usually in the course of normal self-grooming. The egg hatches in the new host's intestinal tract and the young worm burrows its way out of the intestinal tract to encyst in the host's other body tissues. If the new host is a dog, the life cycle proceeds. If the new host is a member of another species, the larvae wait encysted until the new host is eaten by a dog.



Step Three: These second stage larvae can remain encysted happily for years. If the host is a dog, the larvae mostly encyst in the host's liver. When the time comes to move on, the larvae excyst and migrate to the host's lungs where they develop into third stage larvae. They burrow into the small airways and travel upward towards the host's throat. A heavy infection can produce a serious pneumonia. When they get to the upper airways, their presence generates coughing. The worms are coughed up into the host's throat where they are swallowed thus entering the intestinal tract for the second time in their development.

If the host is pregnant, the larvae do not migrate to the lung after they excyst; instead they home to the uterus and infect the unborn puppies. The second stage larvae make their way to the puppies' lungs to develop into third stage larvae.

If the host is a nursing mother, second stage larvae can migrate to the mammary gland instead of the lung after excysting. Puppies can be infected by drinking their mother's milk, though, due to the intrauterine cycle described above, the litter would probably already be infected.

Note: When dogs are dewormed with traditional dewormers, this affects only worms in the intestinal tract. It does not affect encysted larvae. It is difficult to prevent mother-to-puppy transmission and routine deworming is not adequate. It is possible to prevent infection in unborn puppies by using a specific daily protocol of fenbendazole (your veterinarian can provide details) or with the new generation product AdvantageMulti® that contains moxidectin.

Step Four: Once back in the intestine, the larvae complete their maturation and begin to mate. The first eggs are laid about one week after the fourth stage larvae have arrived in the intestine and about 4 to 5 weeks after infection has first occurred. From here the cycle repeats.

Why is Infection Bad?

Roundworm infection can have numerous negative effects. It is a common cause of diarrhea in young animals and can cause vomiting as well. Sometimes the worms themselves are vomited up which can be alarming as they can be quite large with females reaching lengths of up to seven inches. The worms consume the host's food and can lead to unthriftiness and a classical "pot-bellied" appearance. Very heavy infections can lead to pneumonia as the worms migrate and, if there are enough worms, the intestine can actually become obstructed.

It should also be noted that human infection by this parasite is especially serious (see below). It is important to minimize the contamination of environmental soil with the feces of infected animals so as to reduce the exposure hazard to both humans and other animals.

How do we Know if our Dog is Infected?

You may not know if your dog is infected, and this is one of the arguments in favor of regular deworming. Regular deworming is especially recommended for dogs that hunt and might consume the flesh of hosts carrying worm larvae. Puppies are frequently simply assumed to be infected and automatically dewormed.

Toxocara egg

Of course, there are ways to find out if your dog is infected. If a dog or puppy vomits up a worm, there is a good chance this is a roundworm (especially in a puppy). Roundworms are long, white and described as looking like spaghetti. Tapeworms can also be vomited up but these are flat and obviously segmented. If you are not sure what type of worm you are seeing, bring it to your veterinarian's office for identification.

Fecal testing for worm eggs is a must for puppies and a good idea for adult dogs having their annual check up. Obviously, if there are worms, they must be laying eggs in order to be detected, but by and large fecal testing is a reliable method of detection.

How do we get rid of Roundworms?

Numerous deworming products are effective. Some are over the counter and some are prescription. Many flea control and/or heartworm prevention products provide a monthly deworming that is especially helpful in minimizing environmental contamination. Common active ingredients include:

- Febantel (active ingredient in Drontal and Drontal plus)
- Pyrantel pamoate (active ingredient in Strongid, Nemex, Heartgard Plus and others)
- Piperazine (active ingredient in many over the counter products)
- Fenbendazole (active ingredient in Panacur)
- Milbemycin oxime (active ingredient of Interceptor, Sentinel, and Trifexis)
- Moxidectin (active ingredient in AdvantageMulti).

There are two important concepts to keep in mind about deworming. Medications essentially anesthetize the worm so that it lets go of its grip on the host's intestine and passes out with the stool. Once it has been passed, it cannot survive in the environment and dies.

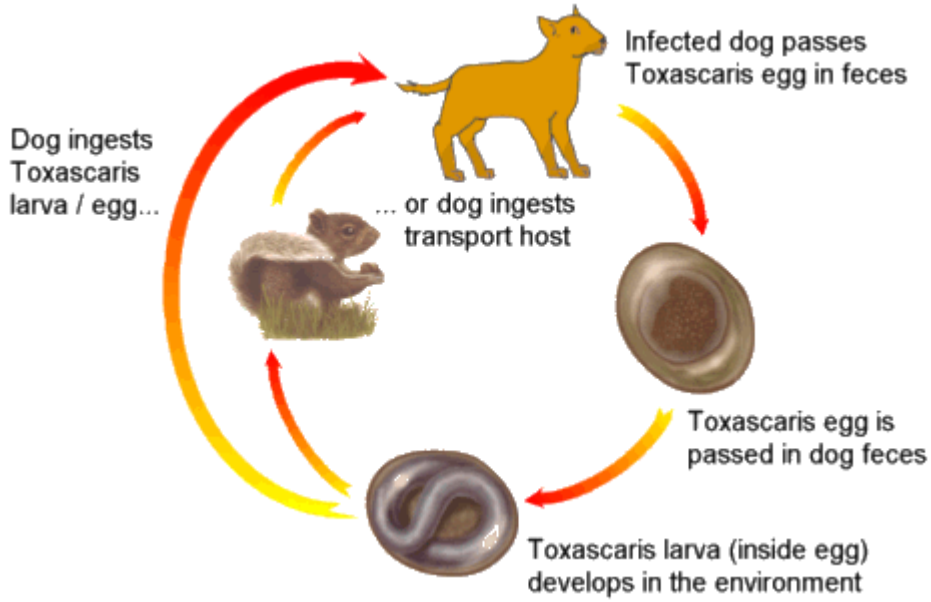
This means that you will likely see the worms when they pass, so be prepared as they can be quite long and may still be alive and moving when you see them.

The other concept stems from the fact that all the larvae in migration cannot be killed by any of these products. After the worms are cleared from the intestine, they will be replaced by new worms completing their migration. This means that a second and sometimes even a third deworming is needed to keep the intestine clear. The follow-up deworming is generally given several weeks following the first deworming to allow for migrating worms to arrive in the intestine where they are vulnerable.

Do not forget your follow-up deworming.

What about *Toxascaris Leonina*?

The life cycle of *Toxascaris leonina* is not nearly as complicated. They do not migrate through the body in the way that *Toxocara* does. Instead, the *Toxascaris* second stage larva is consumed and simply matures in the intestine, a process that takes 2 to 3 months. Like *Toxocara, Toxascaris* can infect hosts of other species, though with *Toxascaris* the larvae can develop into third stage larvae in these other hosts while with *Toxocara* larval development is arrested in species other than the dog.



Note: *Toxascaris leonina* can infect both dogs and cats alike.

For More Information

The Companion Animal Parasite Council has an educational site for pet owners on roundworms. See Pets and Parasites for more information.

See more on roundworms in cats, and on roundworms in people.

The Pet Health Care Library

Tapeworms (Common tapeworms, *Dipylidium caninum*)

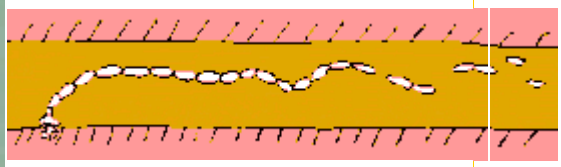
The Common Tapeworm: *Dipylidium caninum*

Biology of the Parasite

The adult *Dipylidium caninum* lives in the small intestine of dogs or cats. It is hooked onto the intestinal wall by a structure called a rostellum, which is sort of like a hat with hooks on it. The tapeworm also has six rows of teeth it uses to grab on to the intestinal wall. Most people are confused about the size of a tapeworm because they only see its segments, which are small; the entire tapeworm is usually 6 inches or more.

Adult* Dipylidium. *The segments a easily seen. The thick end is the t where segments drop off.

***Head of* Diplylidium**



Adult tapeworm segment

Microscopic view of a tapeworm segment

Once docked like a boat to the host's intestinal wall, the tapeworm begins to grow a long tail. The tapeworm's body is basically a head segment to hold on with, a neck, and many tail segments. Each segment making up the tail is like a separate independent body, with an independent digestive system and reproductive tract. The tapeworm absorbs nutrients through its skin as the food being digested by the host flows past it. Older segments are pushed toward the tip of the tail as new segments are produced by the neckpiece. By the time a segment has reached the end of the tail, only the reproductive tract is left. When the segment drops off, it is basically just a sac of tapeworm eggs.

As Rover sleeps, tapeworm segments are passed

The sac is passed from the host's rectum and out into the world, either on the host's stool or on the host's rear end. The segment is the size of a rice grain and is able to move. Eventually the segment will dry up and look more like a sesame seed. The sac breaks and tapeworm eggs are released. These eggs are not infectious to mammals. The tapeworm must reach a specific stage of development before it can infect a mammal.

tapeworm segments

Larval fleas are generally hatching in this vicinity and these larvae are busy grazing on organic debris and flea dirt (the black specks of digested blood shed by adult fleas to nourish their larvae). The flea larvae do not pay close attention to what they eat and innocently consume tapeworm eggs.

Tapeworm segments and flea dirt are found together in Rover's bed.

1) Tapeworm segment breaks, releasing eggs 2)Eggs are eaten by grazing flea larva 3) Flea larva pupates

Rover licks himself and swallows fleas

As the larval flea progresses in its development, the tapeworm inside it is also progressing in development. By the time the flea is an adult, the tapeworm is ready to infect a dog or cat.

The young tapeworm is only infectious to its mammal host at this stage of development. The flea goes about its usual business, namely sucking its host's blood, when to its horror it is licked away by the host and swallowed.

Inside the host's stomach, the flea's body is digested and the young tapeworm is released. It finds a nice spot to attach and the life cycle begins again. It takes 3 weeks from the time the flea is swallowed to the time tapeworm segments appear on the pet's rear end or stool.

Controlling fleas is essential to prevent recurring infections with this species of tapeworm.

See information on flea control.

FAQ

Why is it Called a Tapeworm?

This creature gets its name because its segments and body are very flat and look like a piece of tape.

What do they look like?

Inside a pet, the adult tapeworm can be a half a foot long or more. It is made of small segments, each about the size of a grain of rice. The tapeworm's head hooks onto the pet's intestine with tiny teeth and the worm absorbs nutrients through its skin. Each segment contains a complete set of organs but as new segments grow in at the neck area and older segments progress to the tip of the tail, the organs disintegrate except for the reproductive organs. When the segment drops off from the tail tip, it is only a sac of eggs.

This segment is white and able to move when it is fresh and, at this time, looks like a grain of white rice. As the segment dries, it looks more like a sesame seed.

Where do they Come from?

There is no other way for a pet to get *Dipylidium caninum* except from fleas.

Many people who had thought their pet could not possibly have fleas find out about the infestation this way. The tapeworm segment breaks open, releasing its eggs. A larval flea consumes the egg along with the flea dirt that it normally eats. As the larval flea matures, so does the baby tapeworm. When a grooming dog or cat licks the flea and swallows it, the dead flea is digested in the dog's stomach, releasing the baby tapeworm. The tapeworm is passed to its new home in the dog or cat's small intestine, where it attaches and lives its life.

This parasite does not harm the pet in any way as there are plenty of nutrients passing by to serve both the host and its tapeworm (tapeworms require very little nutrients.) Still, high performance dogs, who need every calorie working for them, may show a decrease in performance because of a tapeworm infection.

There is another type of tapeworm that may be confused with *Dipylidium caninum* and that is the *Taenia* genus of tapeworms. This tapeworm has a segment that looks different and has a different mechanism of infection.

How do you Know if your Pet has them? Why do they Sometimes Fail to Show up in a Fecal Test?

Because the eggs are passed by the pet in packets (segments), they often do not show up on the fecal exam; the packet must break open for the eggs to be seen. Consider that the pet has tapeworms if segments are seen under its tail, around its anus, or on its feces. Segments can be passed in small groups connected to each other, leading the owner to describe a worm that sounds larger than a grain of rice. Tapeworm segments are also quite flat.

Some people will mistake maggots in the stool for tapeworms. Maggots are not seen in freshly passed stool and are not flat.

Can People get them?

Theoretically, yes, people can get them but they must be infected the same way dogs and cats are: by swallowing an infected flea.

How do we Get Rid of Them?

Tapeworms are killed by different medications (one is called praziquantel), which is administered by injection, tablet, or topically. The tapeworm is killed and digested with the pet's food. It is not passed in the stool later.

Why do some Veterinarians Recommend Two Treatments and others only Recommend One Treatment?

Only one treatment is needed to kill the tapeworms in the body; however, many clinics recommend a second injection in three weeks. The reason for the second injection is this: If the owner finds out at the time of their office visit that they need to control fleas to control tapeworms, they will need at least a month or so to control the fleas.

After the first treatment is given, there is no reason why the pet cannot immediately get reinfected. It probably will reinfect itself at some point. By seeing the animal in three weeks and giving another treatment after the fleas are controlled, there is a good chance that the tapeworms will not be back three weeks later. It takes three weeks from the time the pet swallows the tapeworms to the time segments can be seen by the owner.

On the other hand, who knows when the pet will swallow another infected flea? Our recommendation is that a single treatment be administered whenever segments are seen.

If One Pet Has Tapeworm Segments, can it be Assumed that they all Do?

No, just because one pet in the household has swallowed an infected flea does not mean they all have. Our recommendation is to deworm only the pets who have obvious tapeworms.

Why Might a Pet Continue to get Tapeworm Infections?

While many people would like to blame the medication as ineffective, the truth is that there must be an on-going flea population in the pet's environment. The key to eradicating *Dipylidium caninum* is flea control.

Ticks: Arthropod Parasites

Authored by: Becky Lundgren, DVM

VP Client Information Sheets

Ticks are skin parasites that feed on the blood of their hosts. Ticks like motion, warm temperatures from body heat, and the carbon dioxide exhaled by mammals, which is why they are attracted to such hosts as dogs, cats, rodents, rabbits, cattle, small mammals, etc. The bite itself is not usually painful, but the parasite can transmit diseases and cause tick paralysis, which is why tick control is so important. (Removing the ticks leads to rapid improvement of the paralysis.)

It takes several hours for an attached tick to transmit disease, so owners can usually prevent disease transmission to their pets by following a regular schedule to look for and remove ticks.

Tick Life Cycle

Most types of ticks require three hosts during a two-year lifespan. Each tick stage requires a blood meal before it can reach the next stage. Hard ticks have four life stages: egg, larva, nymph, and adult. Larvae and nymphs must feed before they detach and molt. Adult female ticks can engorge, increasing their weight by more than 100 fold. After detaching, an adult female tick can lay approximately 3,000 eggs.

During the egg-laying stage, ticks lay eggs in secluded areas with dense vegetation. The eggs hatch within two weeks. Some species of ticks lay 100 eggs at a time, others lay 3,000 to 6,000 per batch. Once the eggs hatch, the ticks are in the larval stage, during which time the larvae move into grass and search for their first blood meal. At this stage, they will attach themselves for several days to their first host, usually a bird or rodent, and then fall onto the ground. The nymph stage begins after the first blood meal is completed. Nymphs remain inactive during winter and start moving again in spring. Nymphs find a host, usually a rodent, pet, or human. Nymphs are generally about the size of a freckle. After this blood meal, ticks fall off the host and move into the adult stage. Throughout the autumn, male and female adults find a host, which is again usually a rodent, pet, or human. The adult female feeds for 8 to 12 days. The female mates while still attached to her host. Both ticks fall off, and the males die. The female remains inactive through the winter and in the spring lays her eggs in a secluded place. If adults cannot find a host animal in the fall, they can survive in leaf litter until the spring.

What are the best ways to deal with these blood-sucking parasites?

Environmental Control

Treating the yard and outdoor kennel area, if any, is an important tool in the arsenal against ticks. There are productsm containing fenvalerate, that can be used to spray the outdoor area. Fenvalerate is not harmful to the environment. During prime tick months in the summer, spraying may be necessary every 1 to 2 weeks.

If ticks are indoors, flea and tick foggers, sprays, or powders can be used. Inside, ticks typically crawl (they don't jump) up and may be in cracks around windows and doors. A one-foot barrier of insecticide, where the carpeting and wall meet, can help with tick control.

Prevent Ticks from Attaching

If your pet goes outside regularly, you can use some type of residual insecticide. Frontline (fipronil) is a liquid applied to the skin between a dog’s shoulders that discourages ticks from

staying or implanting. Revolution (selamectin) is labeled for one kind of tick. A permethrin spray can be used on dogs (but not in cats, for whom it can be fatal) as a tick repellent and killer.

If you use a liquid spray treatment, cats and skittish dogs typically prefer a pump bottle because of the noise from aerosol cans. Avoid topical powders if your pet has a respiratory condition. Powders are fairly easy to apply, but they can make a real mess, and they often contain permethrin. Shampoos are useful only for ticks that are already on your pet. An amitraz collar, such as PreventicÒ, has some efectiveness against ticks. Like Frontline, amitraz cannot keep all ticks off your pet, but it discourages ticks from implanting or staying on. The collar might be somewhat more water resistant than a residual insecticide, so if your dog likes to swim, the collar might be a better choice. Flea combs can be used to help remove ticks. Wash your pet's bed frequently.

Some people use a topical spray, but don't realize they should not use more than one insecticide or repellent. Doubling the amount of anti-tick product, or using two at once, may cause toxicity problems. DEET, found in many over-the-counter insecticides, is toxic to pets. Any spray insecticide labeled for use on clothing should not be sprayed directly on pets.

Find and Remove the Ticks

The best way to find ticks on your pet is to run your hands over the whole body. Check for ticks every time your pet comes back from an area you know is inhabited by ticks. Ticks attach most frequently around the pet's head, ears, neck, and feet, but are by no means restricted to those areas.

The safest way to remove a tick is to use rubbing alcohol and a pair of tweezers. Dab rubbing alcohol on the tick, and then use the tweezers to take hold of the tick as close to the dog's skin as you can; pull slowly and steadily. Try not to leave the tick's head embedded in the dog's skin. Don't squeeze the tick because it might inject some disease-causing organisms, such as bacteria, viruses, protozoa, or other agents, into the animal during the process. Risk of disease transmission to you, while removing ticks, is low but you should wear gloves if you wish to be perfectly safe. Do not apply hot matches, petroleum jelly, turpentine, nail polish, or just rubbing alcohol alone (the tick must be pulled out after application of alcohol) because these methods do not remove the ticks and they are not safe for your pet.

Once you have removed a live tick, don't dispose of it until you have killed it. Put the tick in alcohol or insecticide to kill it.

Watch for Infection and Diseases

After you pull a tick off, there will be a local area of inflammation that could look red, crusty, or scabby. The tick's attachment causes irritation. The site can get infected; if the pet is scratching at it, it is more apt to get infected. A mild antibiotic, such as over-the-counter triple antibiotic ointment can help, but usually is not necessary. The inflammation should go down within a week. If it stays crusty and inflamed longer than a week, it might have become infected.

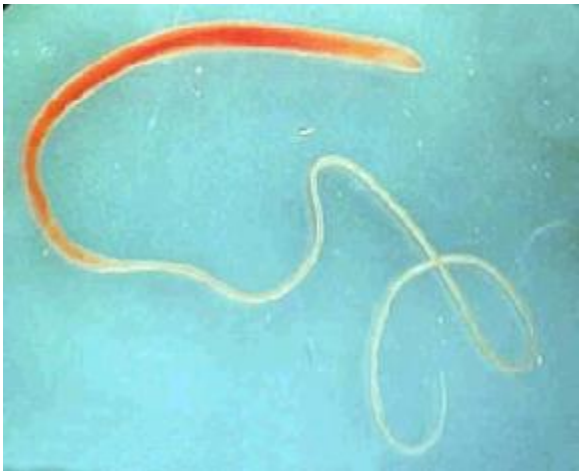
Ticks can transmit diseases to pets and humans that the ticks contract from a previous host. Ticks can parasitize many different mammal species, birds, and reptiles. Lyme disease is one that most people have heard about, but ehrlichiosis is a possibility; it is a rickettsial disease, and its progression from an acute to a chronic stage can be prevented by early treatment. Babesiosis causes red blood cell destruction and anemia. Rocky Mountain spotted fever is the most prevalent rickettsial disease in humans.

Although ticks can transmit diseases, they are usually nothing more than a nuisance. The best approach is to prevent them from embedding, and once embedded, to remove them quickly. As long as you stay on top of the situation, your pets should cruise right through the tick season with no problems.

Whipworms

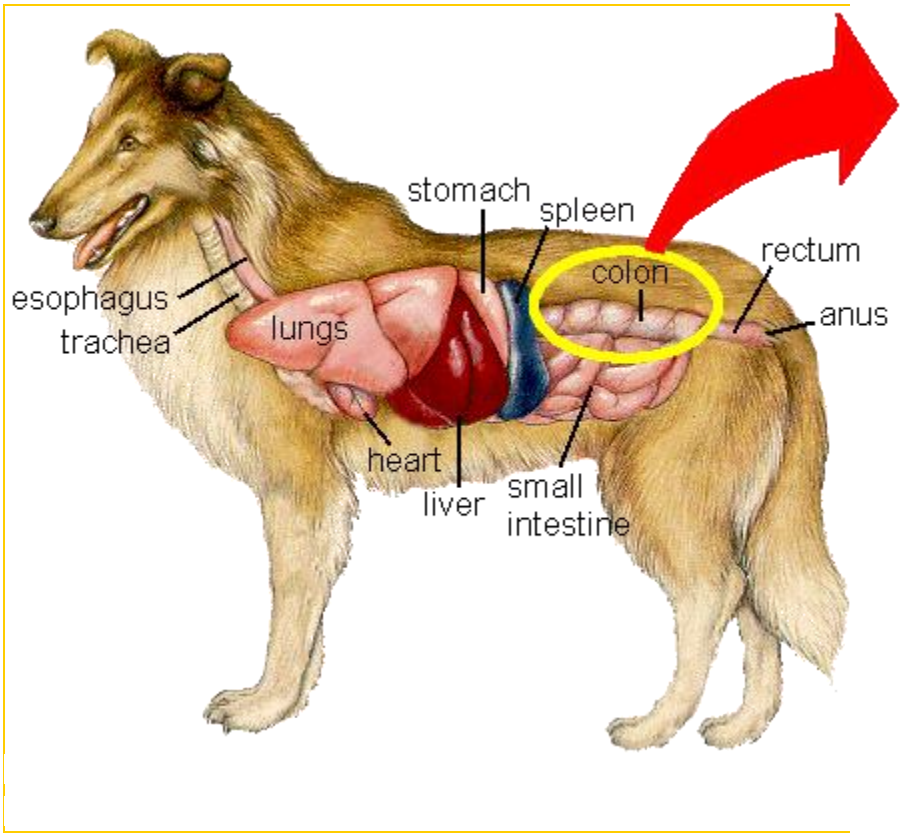
Authored by:
The Pet Health Care Library

(*Trichuris Vulpis* and relatives)



Adult whipworm

This worm is one of the "big four" intestinal parasites with which our canine friends must contend: roundworms, tapeworms, hookworms, and whipworms. The whipworm that affects dogs (*Trichuris vulpis*) is substantially smaller than the other worms (a mere 30-50 mm in length, about two inches maximum) and is rarely seen as it lives in the cecum (the part of the large intestine where the small and large intestine meet). The head (or more accurately, the digestive end of the worm) is skinny versus its stout tail (or reproductive end), which gives the worm a whip shape, hence the name.

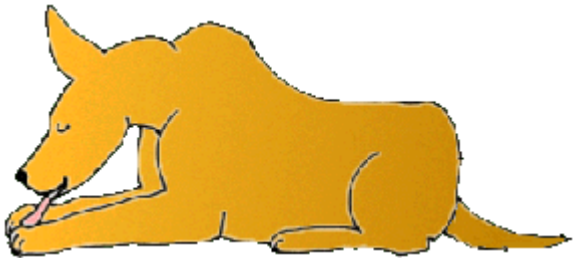


In the host's digestive tract, food passes from mouth to esophagus to stomach to small intestine to large intestine to rectum and then to the outside world. This means the large intestine is one of the last stops for nutrients and by this point in the journey, nutrients have largely been broken down and absorbed. The large intestine, also called the colon, serves to absorb water, store fecal material, and provide a home for a spectacular number of bacteria that are able to digest leftover food. The large intestine is the home of the whipworm. The adult worms bite the tissue of the intestine, actually embedding their heads inside, and suck blood there.

Whipworm egg isolated from a stool sample. Note the characteristic double plug appearance.

Whipworms developing in the soil. Note the characteristic plugs on either end of the egg.

Eggs are laid inside the large intestine and pass with the stool. Once in the outside world, the eggs require about 2 to 4 weeks to form embryos and become capable of infecting a new host. (This means that contaminated soil is the source of infection, not fresh feces.)



The new host is infected by consuming the egg, usually during grooming. The egg hatches in the small intestine releasing a larva. The larva dives into the local glandular tissue and after about a week emerges into the small intestine and is carried downstream into the large intestine with the digested food. Once in the cecum or large intestine, its permanent home, it embeds in the tissue there, and after a total 74 to 87 days from the time the egg was swallowed, the young whipworm is ready to mate.

A few whipworms generally do not pose a problem for the host but if large numbers of worms are embedding themselves in the large intestine tissue, tremendous inflammation can result leading to a bloody, gooey diarrhea. Usually there is not enough blood loss to be dangerous but the diarrhea readily becomes chronic and hard to control. A second syndrome of infection has emerged but is not well understood, this being symptoms mimicking those of Addison's disease (hypoadrenocorticism). Here, a waxing and waning weakness with inability to conserve salt ultimately creates a dehydration crisis. The syndrome mimics Addison's disease in every way except that testing for Addison's disease will be negative and deworming yields a complete recovery.

Because female whipworms only periodically lay eggs (whereas other female worms lay eggs continuously), a fecal sample tested may easily be negative for eggs. This makes confirmation of a whipworm infection a challenge. It is common to deworm for whipworms if the symptoms are suggestive of them even if the fecal test is negative. Most common deworming agents do not work on whipworms so something special must be selected. The most common products are fenbendazole(Panacur®), and febantel (Drontal Plus®). Because of the long maturation cycle of young worms, a second deworming some 75 days or so after the first deworming is needed to fully clear the infection (easy to forget). Often another deworming in between these doses is recommended to further control the whipworm numbers.

More recently, regular heartworm prevention products have been developed to remove and control whipworms: Sentinel and Interceptor both will cover whipworms and their regular use covers the second deworming as well. Heartgard products do not carry a high enough dose of ivermectin to kill whipworms, though at other doses ivermectin could be used with appropriate cautions.

Soil contaminated by whipworm eggs is contaminated for years. It is virtually impossible to remove the eggs from the soil or kill them. Happily, however, this is one pet intestinal parasite that is not readily transmissible to humans.

Feline Whipworm Infection

There are species of whipworms that can infect cats: *Trichuris serrata* in North America and *Trichuris campanula* in Europe. Cats are clean animals and fastidious around feces, and they rarely get infected. When they do, worm numbers are so small that symptoms hardly ever occur. Whipworms are more of an interesting incidental finding in cats when whipworm eggs happen to come up on a routine fecal check. In other words, feline whipworm infection is generally not considered to be much of a problem.

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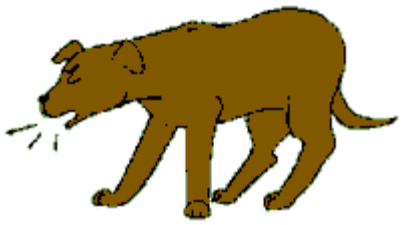
Kennel Cough
(Infectious Tracheobronchitis)

What is it?



Kennel cough is an infectious bronchitis characterized by a harsh, hacking cough that most people describe as sounding like "something stuck in my dog's throat." It is analogous to a chest cold for humans and is only a serious condition in special circumstances (see below); in general, it resolves on its own. A dog with kennel cough generally feels active and maintains a normal appetite despite frequent fits of coughing. There is usually no fever or listlessness, just lots of coughing.

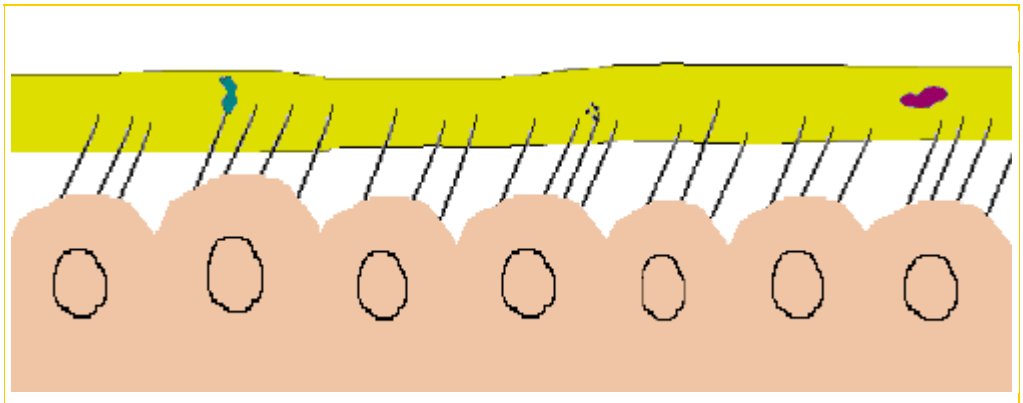
Not sure what a Coughing Dog sounds like?

Dogs can make an assortment of respiratory sounds. Usually a cough is recognizable but it is important to be aware of another sound called a reverse sneeze. The reverse sneeze is often mistaken for a cough, a choking fit, sneezing, retching, or even gasping for breath. In fact, the reverse sneeze represents a post-nasal drip or tickle in the throat. It is considered normal especially for small dogs or dogs and only requires attention if it is felt to be excessive. The point here is to know a cough when you see one. A cough can be dry or productive, meaning it is followed by a gag, swallowing motion, production of foamy mucus (not to be confused with vomiting). Here are some videos that might help.

A coughing dog that has a poor appetite, fever, and/or listlessness should be evaluated for pneumonia.

How Infection Occurs

An infected dog sheds infectious bacteria and/or viruses in respiratory secretions. These secretions become aerosolized and float in the air and can then be inhaled by a healthy dog.



Depiction of mucociliary escalator

The normal respiratory tract has substantial safeguards against invading infectious agents. The most important of these is probably what is called the mucociliary escalator. This safeguard consists of tiny hair-like structures called cilia that protrude from the cells lining the respiratory tract and extend into a coat of mucus over them. The cilia beat in a coordinated fashion through the lower and more watery

mucus layer called the sol. A thicker mucus layer called the gel floats on top of the sol. Debris, including infectious agents, get trapped in the sticky gel and the cilia move them upward towards the throat where the collection of debris and mucus may be coughed up and/or swallowed.

The mucociliary escalator is damaged by the following:

- shipping stress
- crowding stress
- heavy dust exposure
- cigarette smoke exposure
- infectious agents (viruses such as reovirus, adenovirus, parainfluenza virus, and even the distemper virus can be initiating infections).
- cold temperature
- poor ventilation

Without this protective mechanism, invading bacteria, especially *Bordetella bronchiseptica*, the chief agent of kennel cough, may simply march down the airways unimpeded.

Bordetella bronchiseptica organisms have some tricks of their own as well:

- They are able to bind directly to cilia, rendering them unable to move within 3 hours of contact.
- They secrete substances that disable the immune cells normally responsible for consuming and destroying bacteria.

Because it is common for *Bordetella* to be accompanied by at least one other infectious agent (such as one of the viruses listed below), kennel cough is actually a complex of infections rather than infection by one agent.

Members of the kennel cough complex:

- Parainfluenza virus
- Canine adenovirus type 2
- Canine distemper virus
- Canine herpes virus
- Canine reovirus (type 1, 2, or 3)

Any of these viruses can produce a minor sore throat and cough ultimately allowing a way in for the more toxic *Bordetella bronchiseptica* bacteria.

Classically, dogs get infected when they are kept in a crowded situation with poor air circulation and lots of warm air (i.e., a boarding kennel, vaccination clinic, obedience class, local park, animal shelter, animal hospital waiting room, or grooming parlor). In reality, most causes of coughing that begin acutely in a dog are due to infectious causes and usually represent some form of kennel cough.

THE INCUBATION PERIOD IS 2 TO 14 DAYS

How is Diagnosis Made?

Usually the history of exposure to a crowd of dogs within the proper time frame plus typical examination findings (a coughing dog that otherwise feels well) is adequate to make the diagnosis. Radiographs show bronchitis, although severe cases can progress to pneumonia, especially if the canine distemper virus is involved.

How Contagious is it?

Bordetella infection can be picked up by rabbits, guinea pigs, pigs, cats (if they are very young and housed in groups), and other dogs. *Bordetella* is generally not considered contagious to humans although it is closely related to *Bordetella pertussis*, the agent of whooping cough. Immune-suppressed humans potentially could be infected.

Among dogs, kennel cough is fairly contagious depending on stress level, vaccination status, and exposure to minor viruses. Dogs shed *Bordetella* organisms for up to 3 months after infection.

Some veterinarians recommend keeping all dogs current on* Bordetella *vaccinations because you never know when they will be in an unexpected situation.

How is Kennel Cough Treated?

Although most cases will go away on their own, we like to think we can hasten recovery with antibiotics to directly kill the *Bordetella* organism. Kennel cough may be treated with cough suppressants to provide comfort during natural recovery. Alternatively, antibiotics and cough suppressants can be combined.

When is it a Serious Condition?

Very young puppies, especially those with a recent shipping history (i.e., pet store puppies) are especially prone to severe cases of infectious tracheobronchitis that frequently progress to pneumonia.

In dogs where the distemper virus is involved (usually shelter or pet store puppies), there is tremendous potential for serious consequences.

Vaccination Options

There are basically two options for kennel cough vaccination: injectable and intranasal. It is important to realize that not all members of the kennel cough complex have a vaccine. Also, because kennel cough is a localized infection (meaning it is local to the respiratory tract), it is an infection that does not lend itself to prevention by vaccination. Vaccination must be regularly boosted and often vaccination simply muffles the severity of infection without completely preventing it.

Injectable Vaccine
Injectable vaccination is a good choice for aggressive dogs who may bite if their muzzle is approached. For puppies, injectable vaccination provides good systemic immunity as long as two doses are given (approximately one month apart) after age 4 months. Boosters are generally given annually.

There is some controversy over whether previously vaccinated dogs generate better immunity receiving injectable or nasal boosters for kennel cough.

Parainfluenza, adenovirus type 2, and canine distemper, all members of the kennel cough complex, are all covered by the standard DHLPP vaccine, the basic vaccine for dogs. Adenovirus type 2 serum also immunizes against adenovirus type 1, the agent of infectious canine hepatitis.

Nasal Vaccine
Intranasal vaccination may be given as early as 3 weeks of age and immunity generally lasts 10 to 12 months. (Usually this vaccine is boosted annually but if you are expecting imminent exposure as in boarding, competition, or other event where dogs are together, it is optimal to boost if over 6 months have elapsed.) The advantage here is that the local immunity is stimulated right at the site where the natural infection would be trying to take hold.

It takes four days to generate a solid immune response after intranasal vaccination so it is best if vaccination is given at least four days prior to the exposure. Some dogs will have some sneezing or nasal discharge in the week following intranasal vaccination. As a general rule, nasal vaccination provides faster immunity than injectable vaccination.

There is some evidence that young puppies in a high risk environment may benefit from both injectable and nasal vaccination (rather than simply receiving one or the other).

IF A NASAL VACCINE IS ACCIDENTALLY GIVEN AS AN INJECTION, AN ABSCESS CAN RESULT UNDER THE SKIN.
Nasal vaccines cannot be given as injections.

VACCINATION IS NOT USEFUL IN A DOG
ALREADY INCUBATING KENNEL COUGH.

If boarding is planned and more than 6 months have passed since the last booster shot, ideally the vaccine should be boosted 5 days or more before the start of boarding.

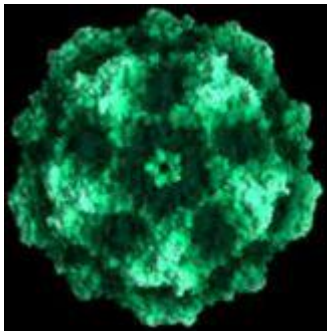
What if Kennel Cough doesn't Improve?

As previously noted, this infection is generally self-limiting. It should be at least improved partially after one week of treatment. If no improvement has been observed in this time, a re-check exam (possibly including radiographs of the chest) would be a good idea. Failure of kennel cough to resolve suggests an underlying condition. Kennel cough can activate a previously asymptomatic collapsing trachea or the condition may have progressed to pneumonia. There is also another respiratory infection called canine influenza, which seemed to be a racing greyhound issue exclusively until late 2005. This infection produces fever and pneumonia but starts looking like a routine kennel cough. This particular infection is much more severe, highly contagious, but for now seems to be uncommon.

If you have questions about a coughing dog, do not hesitate to bring them to your veterinarian, or use the Ask A Vet feature on the home page of Veterinary Partner.

The Pet Health Care Library

What is Parvo?



Canine parvovirus. Reprinted with permission by Jean-Yves Sgro. © 1994 JY. Sgro UW-Madison

Parvoviruses are a large group; almost every mammal species (including humans) seems to have its own parvovirus. Fortunately, each virus is specific for which animal species it can infect (i.e. the pig parvovirus will not infect people, the canine parvovirus will not infect cats, etc.) The canine parvovirus will affect most members of the dog family (wolves, coyotes, foxes etc.).

Parvoviruses are smaller than most viruses and consist of a protein coat (a capsid) and a single strand of DNA inside. It is hard to believe that such a simply constructed organism could be so deadly; however, this virus has proved especially effective at infecting rapidly dividing host cells such as intestinal cells, bone marrow cells, cells of the lymph system, and fetal cells. Parvoviruses are not enveloped in fat the way many other viruses are. This makes parvoviruses especially hardy in the environment and difficult to disinfect away.

While the parvoviruses of other species have been well known for decades, the canine parvovirus is a relative newcomer. The original canine parvovirus, discovered in 1967 and called **CPV-1** did not represent much of a medical threat except to newborn puppies but by 1978, a new variant, **CPV-2** appeared in the U.S. This newer version seems to represent a mutation from the feline parvovirus (which is more commonly known as the feline distemper virus). Because this virus was (and is) shed in gigantic numbers by infected animals, and because this virus is especially hardy in the environment, worldwide distribution of the virus rapidly occurred. At this time, the virus is considered to be ubiquitous, meaning **that it is present in EVERY ENVIRONMENT unless regular disinfection is applied.**

Attempting to shield a puppy from exposure is completely futile.

In 1978, no dog had any sort of immunity against this virus. There was no resistance and the epidemic that resulted was disastrous. To make matters worse, a second mutation creating **CPV-2a** had occurred by 1979, and it seemed to be even more aggressive. Vaccine was at a premium and many veterinarians had to make do with feline distemper vaccine as it was the closest related vaccine available while the manufacturers struggled to supply the nation with true parvo vaccines.

Over thirty years have passed since then. The most common form of the virus is called CPV-2b. Virtually all dogs can be considered to have been exposed to it at least to some extent, which means that most adult dogs, even those inadequately vaccinated, can be considered to have at least some immunity. It is also worth mentioning the new particularly virulent strain of parvovirus: CPV-2c, which is rapidly becoming the second most common form of canine parvovirus. CPV-2c was discovered in the year 2000 and is able to infect cats. Cats vaccinated against feline distemper can be considered protected. Currently available vaccines cover all variants of canine parvo including CPV-2c as do all the commercially available diagnostic test kits.

For more specific information about Canine Parvovirus-2c, see the American Veterinary Medical Association's FAQ.

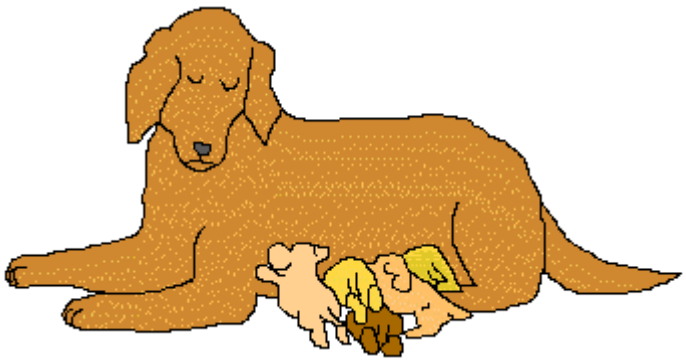
Parvoviral infection has become a disease almost exclusively of puppies and adolescent dogs.

Parvoviral infection must be considered as a possible diagnosis in any young dog with vomiting and/or diarrhea. With proper hospitalization, survival rates approach 80%. Still, there are many myths and misunderstandings about this virus, how it is spread, and how to prevent it. The purpose of this web site is to clear up these misconceptions and provide the public with an accurate information source.

The Pet Health Care Library

Parvo Vaccination Options/Prevention

Maternal Antibody: Our Biggest Obstacle



The biggest problem in protecting a puppy against this infection ironically stems from the natural mechanism of protection that has evolved. As mentioned previously, puppies obtain their immunity from their mother's first milk, the colostrum, on the first day of life. This milk contains the mother's antibodies against parvovirus, and until these antibodies wane to ineffective levels they will protect the puppy.

The problem is that they will also inactivate vaccine.

Vaccine is a solution of inactivated virus, either live and weakened (attenuated or modified) or killed. This virus is injected into the puppy. If there is still adequate maternal antibody present, this vaccine virus will be destroyed just as if it were a real infection. There will be a period of about a week when there is not enough maternal antibody to protect the puppy but too much to allow a vaccine to work. (This period is called the window of vulnerability.) After this period, vaccine can be effective.

The next problem is that the age at which vaccine can be effective is different for each individual puppy.

To get around this, we vaccinate puppies in a series, giving a vaccine every 2 to 4 weeks until age 16 weeks. By age 16 weeks, we can be certain that maternal antibodies have waned and vaccine should be able to take. It should be recognized that some individuals, especially those of well-vaccinated mothers, must be vaccinated out to 20 weeks unless a high titer vaccine is used.

After a puppy is born, maternal antibody levels drop by half approximately every 10 days.

Puppies that were born first or were more aggressive at nursing on the first day will get more maternal antibody than their littermates.

Mother dogs vaccinated at approximately the time of breeding will have the highest antibody levels to pass on to their puppies.

REMEMBER, the more maternal antibody a puppy has, the less likely a vaccine is to work and the longer one must wait for antibody to wane and for vaccination to be effective.

Should Live or Killed Vaccine Be Used?

Killed vaccine is the least effective at penetrating maternal antibody. It is also associated with more vaccine reactions since more stabilizing chemicals are used in a killed vaccine. I recommend using live parvo vaccine only unless there is any question about the immunologic competence of the dog to be vaccinated and the dog is an adult. Killed vaccine should probably not be relied upon for puppies.

What is a High Titer Vaccine?

In the mid-1990s a new innovation in parvo vaccination was developed: the high titer vaccine. The term "high titer" refers to the amount of virus in the dose of vaccine and means that there is a great deal more virus than in the standard vaccines. When the puppy is vaccinated, maternal antibody binds the virus present. If a high titer vaccine is used, there is still virus left over after all the maternal antibody has been used up. This extra virus can then stimulate the puppy's own immune system. High titer vaccines commonly produce full protection by age 12 weeks (though I recommend carrying vaccination out to age 16 weeks to be certain - an especially good idea for breeds predisposed to infection such as the Rottweiler, Doberman pinscher, and American pit bull terrier).

At this point virtually all commercially available live vaccines are of the high titer type.

It should be noted that giving vaccine more frequently than every 2 weeks will cause interference between the two vaccines and neither can be expected to be effective. This includes giving vaccines for different infections. Vaccines should be spaced 2 to 4 weeks apart.

It is commonly held that puppies need a certain number of vaccines for protection to be achieved (usually either 3 or 4 is the magic number). The number of vaccines given has nothing to do with protection. In order for protection to be achieved, vaccine must be given when it can penetrate maternal antibody.

A vaccine FAQ can answer common vaccination questions. LINK

Vaccinating Adult Dogs

Classically, parvovirus vaccine has been administered annually to all dogs. Vaccine against canine parvovirus has been included in the distemper combination vaccine (the DHLPP, "6 in one," etc.)

There has also been some thought that annual vaccination is not necessary, especially for a disease where adult dogs are considered low risk. Many university teaching hospitals have switched to a 3-year schedule for adult dogs, plus the American Animal Hospital Association recommends that parvo vaccination be given to adult dogs on a 3-year schedule. There is still controversy regarding this practice, especially given possible financial impact to most veterinary hospitals. Do not be surprised if your veterinarian has chosen to follow the university and begins recommending a 3-year vaccination protocol for this virus.

Read the AAHA vaccination guidelines.

What is the Meaning of a Vaccine Titer?

A vaccine titer is a blood test that measures the antibody level a dog is carrying against a certain virus. There are two methods of measuring parvovirus antibody titer: hemagglutination inhibition and serum neutralization. The value refers to how diluted the dog's serum (blood) must be for antibody to still be detectable. Based on work at Cornell University, the following titer levels are generally considered protective:

- Hemagglutination inhibition titer of 1:80 or more
- Virus neutralization titer of 1:20 or more

The virus neutralization titer is felt to be the most accurate representation of protection.

There is a great deal of controversy regarding whether or not a certain level of antibody can be considered tantamount to protection. Many veterinarians do not feel it is useful to run titers until this issue is resolved (i.e., there is more to protection than an antibody level; there is an entire immune system involved and there is no simple way to assess the entire immune system). Other veterinarians find it cost ineffective to recommend titers prior to vaccination; it costs a great deal more to run the titer than to simply give the vaccination. If the titer is adequate, the worst possible outcome is that the vaccine will be ineffective. Other veterinarians question whether or not it is harmless to annually give vaccinations when there is already adequate immunity. At this time there is no single answer to this issue and we recommend trusting your veterinarian's educated opinions regarding these issues.

Protection after Infection

A puppy that has recovered from a parvovirus infection can be expected to have strong immunity. This has been tested out to 20 months after infection and immunity is believed to be lifelong; because this is unproven, continued vaccination is commonly recommended.

The Pet Health Care Library

Distemper

(Q&A below)

Most of us have heard of distemper infection for dogs and gather it is bad. The basic vaccine for dogs is "the distemper shot," which vaccinates against distemper, parvovirus and some minor kennel cough agents. Luckily, this is all most people ever hear of distemper. If you are reading this, however, you probably have a dog that is suspected of having this dreaded infection.

The typical distemper suspect is a rescue or pet store dog or puppy, usually with questionable vaccination history or an as yet incomplete vaccination series. The dog or puppy has been housed with other rescue dogs.

Symptoms begin with:

- Gooey eye and nose discharge
- Fever, which often comes and goes unnoticed
- Poor appetite
- Coughing and development of pneumonia

The virus is attacking interfaces of the body with the environment (the mucous membranes) and starts with the respiratory tract, hence the pneumonia, but it does not stop there. The virus moves on to produce:

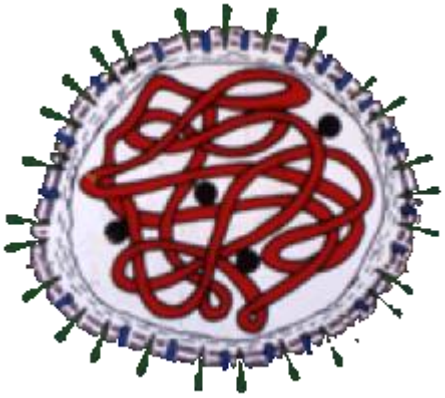
- Vomiting and diarrhea
- Callusing of the nose and foot pads (hence one of the old names for distemper – hard pad disease).

After completing what is called the mucosal phase of infection where environmental interfaces are attacked (as described by the above GI and respiratory disease), the virus proceeds to the central nervous system for its neurologic phase leading to:

- Seizures, classically starting with snapping or tremors of the jaws that progress to convulsions of the whole body. This distemper classic sign is called a chewing gum fit.
- Seizures are not the only distemper sign by any means. Tremors, imbalance, and limb weakness all may occur. Signs may progress to death or may become non-progressive and permanent. Recovery is also possible.

This means that the dog appears to recover only to break with neurologic disease 1 to 3 weeks later. Younger puppies or individuals with weak immunity often die during the mucosal phase while stronger individuals may have relatively mild mucosal signs and not appear ill until the neurologic phase strikes.

The Virus Itself



The canine distemper virus is closely related to the human measles virus and in years past puppies were immunized for distemper with the vaccine against measles. It has been said that a child in the home of a dog vaccinated with live distemper virus vaccine will become exposed to the virus and immunized against the measles (we do not recommend such experiments at home).

The distemper virus consists of a single strand of RNA, encased in a protein coat that is again encased in a fatty envelope. This sounds esoteric but the fatty envelope makes all the difference in the world. The fatty envelope is easily disrupted in the environment, which makes it impossible for infectious virus to persist in the environment. Because an intact fatty envelope is required for infection, virus transmission must involve dog to dog contact or at least contact with extremely fresh (less than 30 minutes old at 60 degrees and up to 3 hours old at room temperature) infected body secretions. As with other viruses, living virus happily freezes and can survive for years if kept frozen and protected from light. Routine disinfection and cleaning readily kills the distemper virus in a kennel setting.

Transmission and Infection

The infected dog typically infects other dogs via coughing infected respiratory secretions though the virus is shed in most other body secretions, including urine. The virus enters the new host via the nose or mouth and promptly begins to replicate. The virus is engulfed by cells of the immune system called macrophages. The idea is that the virus will be engulfed, walled off within the cell, and then destroyed by enzymes. Unfortunately for the new host, this process does not damage the virus as intended; instead, the virus is able to use the macrophage as a means of transportation through the host's body. Within 24 hours, the virus has traveled to the lymph nodes of the lung. By the 6th day, the virus has migrated to the spleen, stomach, small intestine, and liver. Fever is developing at this point.

By day 8 or 9 an important crux is reached in the timetable of infection. The host is mounting an immune response during this time and the outcome depends on how fast and how well this is accomplished. A strong immune response begins to clear the virus at this point and has eliminated all traces of virus with no symptoms of illness by Day 14. A weak immune response allows the virus to reach the epithelial cells, the cells that line every interface the body has with the outside world. The tender epithelial cells lining the chambers of the brain are infected as well. The host begins to get sick as the virus spreads, but as the host's immune response grows symptoms wane. This phenomenon accounts for the wide variability in symptoms; some dogs get only a few mild symptoms while others get a full lethal combination.

After clearing from most internal organs, the virus is able to hide out for long periods of time in the nervous system and skin. Because of this phenomenon, callusing of skin or - much worse - seizures may occur long after the infection was thought to be cleared.

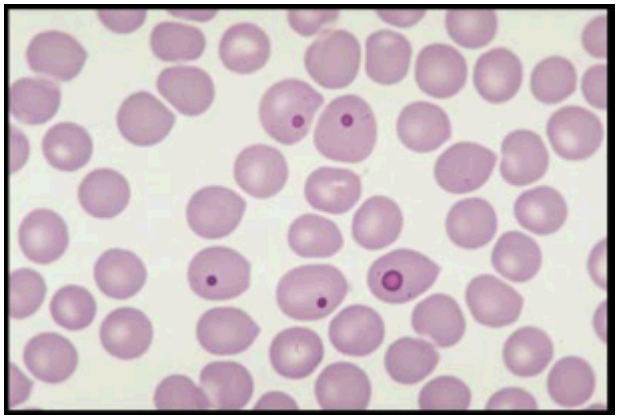
Most cases in the U.S. involve puppies. The colostrum suckled in the first day or so of life will provide them with a solid reflection of their mother's immunity. This immunity will have waned by age 16 weeks, leaving the puppy vulnerable if vaccines have not been administered for further protection. In our society most mother dogs will have received some form of vaccination and thus be able to pass on at least some immunity and will have some ability to protect herself. In societies where vaccination is not common, distemper attacks

dogs of all ages.

Confirming the Distemper Infection

As if it is not bad enough that this infection has a poorly defined endpoint so one never knows for sure if the dog is out of the woods, it is almost impossible to confirm a distemper diagnosis. Because of this, distemper is a clinical diagnosis, which means that rather than confirming infection with a test that is negative or positive, the veterinarian must look at the whole picture: what symptoms are there, is the history typical, etc. The virus itself remains elusive so that positive test results are meaningful in confirming the infection, but negative results do not rule it out. The following are tests that can be used:

Distemper Inclusion Bodies
Distemper inclusion bodies are clumps of virus that are visible under the microscope within infected cells. Post-mortem inclusion bodies are readily visible in the urinary bladder tissue, thus making confirmation of distemper after death relatively easy. In the living patient, we typically have ready access to blood cells and cells of the eye's conjunctival membranes (the pink park of the eye socket). To enhance the visibility of inclusion bodies, immunocytology is used. In this technique, antibodies against distemper virus are tagged with fluorescent markers. The antibodies bind to virus, if it is present, effectively dying the inclusion body with glow-in-the-dark fluorescent color. The presence of inclusion bodies confirms distemper infection. The lack of detectable inclusion bodies does not rule out distemper infection as inclusion bodies ultimately become coated with the host's own antibodies, which in turn block the fluorescent-tagged antibodies used in the test.



If callusing of the footpads or nose is evident, a biopsy of this tissue can be tested for inclusion bodies fairly late in infection.

Distemper Antibody Levels
Distemper titers (another word for antibody level) of either the IgM type (produced in early stages of infection) and the IgG type (produced in later phases of infection) can be checked. The problem is that distemper vaccination induces these same antibodies, and often distemper suspects have recently been vaccinated. A high IgM titer indicates recent infection or recent vaccination, but there is no way to tell which.

PCR Testing
PCR testing involves amplification of DNA so as to allow detection of very small amounts of virus. Since the distemper virus is an RNA virus, not a DNA virus, a test called reverse transcriptase PCR must be used but the amplification concept is the same. Vaccination will interfere with PCR testing for approximately 2 weeks (i.e. the modified virus from the vaccine will be detected creating a false positive).

Cerebrospinal Fluid Antibody Levels
In neurologic distemper cases, cerebrospinal fluid is often tapped and distemper antibody levels checked. Distemper antibodies in cerebrospinal fluid are highly indicative of distemper infection as vaccine-induced antibodies do not cross the blood-brain barrier into the CSF fluid.

Treatment for Distemper

Many bizarre protocols have emerged over time as we grope for meaningful anti-viral therapy. The fact remains that recovery from distemper is all about immunity and the only real treatment is supportive care while the patient mounts an immune response. If the patient has pneumonia, antibiotics are used on the secondary bacterial infections. Airway dilators are used as needed. Physical therapy is used to promote coughing. If the patient has diarrhea, intravenous fluids are used to prevent dehydration.

Distemper is extremely variable in its ability to produce symptoms and recovery occurs at any stage. This has led to assorted therapies being credited with effect when what was more likely witnessed was the natural removal of the infection by the host's immune system.

Neurologic distemper is particularly difficult to treat. Still, it is possible for dogs to recover with livable deficits even from neurodistemper; euthanasia is best left for progressive, incapacitating neurologic symptoms.

Preventing Infection

If confirming diagnosis and therapy are the pitfalls of distemper, prevention is the easy part. Effective distemper vaccination has been available since the 1950s. Prior to widespread vaccination, distemper was the scourge of the canine community, wiping out entire towns of pet dogs. Today, distemper is a rare disease except in the shelter, rescue, and pet store world.

The "distemper shot" is the basic immunization for dogs. It is generally combined with vaccine for canine parvovirus as well for parainfluenza, adenovirus 2, leptospirosis, and sometimes coronavirus. Puppies are vaccinated beginning at age 6 to 8 weeks, and then every 2 to 4 weeks thereafter until age 16 weeks. The next vaccine is one year later. After that subsequent vaccination boosters are given every 1 to 3 years or based on antibody levels depending on the policy of the supervising animal hospital.

Vaccine is available in the traditional modified live virus format, where distemper virus is modified to induce immune-response but not illness. Vaccine is also available in the recombinant format where a live harmless virus (not the distemper virus at all modified or otherwise) is used to carry the portion of the distemper virus that generates the immune-response. The benefit of the recombinant format is that it is completely impossible for distemper or distemper encephalitis to occur as the result of vaccination. These complications are exceedingly rare but still possible with modified live virus vaccine.

The use of the human measles virus to vaccinate against canine distemper is largely passé nowadays. Immunity obtained this way does not last as long and is not as successful as that obtained with a modified live or recombinant distemper vaccine.

Q&A FAQ

It seems that here we have a disease for which a lethal outcome is possible yet there is no test to confirm the infection and no way to determine if the infection is truly over. The owner of a distemper suspect will have numerous questions and here we attempt to answer questions that may not have been overtly covered in the above text.

Q. I own a young dog with badly stained and pitted teeth. I was told this might indicate she had distemper as a puppy. How would distemper have caused this?

A.

The distemper virus attacks epithelial cells. These cells line the interfaces with the environment, including the mouth. In puppyhood the buds of the permanent teeth are still developing from epithelial cells. The distemper infection and associated fevers can leave these tooth buds permanently damaged so that the adult teeth come in with stained and pitted enamel. This is called enamel hypoplasia.

Q. Is there any way to predict whether a dog with distemper will progress to the neurologic phase?

A. Not really. The phase of infection that precedes the virus entering the central nervous system is the phase where the skin is attacked. Callusing of the nose and foot pads tends to be associated with the development of neurologic distemper. As a general rule about 50% of dogs that recover from the mucosal phase will progress to neurodistemper. Of the dogs that develop neurodistemper, it has been said that about 50% will do so within a month or two of the mucosal phase. Our impression is that 50% is probably a bit of an over-estimation. The risk of progressing to neurodistemper is less in adult dogs as they tend to mount more effective immune responses than puppies do.

Q. We owned a dog that died and was suspected of having distemper. How should we disinfect our home before a new dog is introduced?

A. One of the few positive aspects of distemper is that the virus cannot live without fresh secretions; it is inactivated in minutes outside the living host's body. Minimal disinfection is necessary.
How long is a recovered dog contagious?

A recovered dog may shed virus up to 2 to 3 months. It is important to keep this in mind when taking a recovered pet anywhere where there are other dogs. The most intense viral shedding occurs in the first 2 weeks of infection.

Q. What is old dog encephalitis?

A. The condition called old dog encephalitis refers to a chronic brain inflammation that can occur in a dog that had distemper many years before. These brain lesions are identical to those in dogs that progress to a chronic neurologic distemper. For some reason, in some individuals the dog lives nearly all its life as a distemper survivor only to break with neurodistemper in old age.

Q. What is vaccinial distemper?" Can a dog actually get distemper from its vaccine?

A. Vaccinial distemper refers to the development of neurodistemper 10 to 21 days after administration of a modified live distemper vaccine. It is not possible to have this reaction when a recombinant vaccine is used.

Q. Can humans get infected with the canine distemper virus?

A. Humans can get infected with the virus, meaning the virus seems able to replicate in the human body, but no illness results. At one time, multiple sclerosis was thought to be associated with exposure to the canine distemper virus but further research suggests that it is actually the human measles virus (a close relative of canine distemper) that may be the culprit. It does not appear that there is any human hazard in the canine distemper virus.

Q. Should a recovered dog continue to receive distemper vaccinations?

A. Technically, if a dog has recovered from the distemper virus the resulting immunity should be lifelong and vaccination is unnecessary. That said, the "distemper vaccine" is actually a combination vaccine covering up to seven infections, including canine parvovirus. You may not want to skip these other important vaccinations. Further, as discussed, confirmation of distemper infection can be problematic. This begs the question as to whether there is any harm to vaccinating with a product that includes a possibly unnecessary distemper vaccine. In fact, if a dog has recovered from distemper, there will be a rapid antibody response against the distemper vaccine live virus and it will be inactivated just as a natural infection would be. So the answer to this question is that while a recovered dog does not need distemper vaccination, there is no harm in continuing to give the vaccine and reaping the benefit of the additional infections typically covered in the product.

If you have a distemper question, we would love to add it to this FAQ as others may benefit. Feel free to use the Ask a Vet feature on the Veterinary Partner home page.

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Dog Rabies: A Serious and Contagious Disease

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Dog Rabies

Dog rabies is one of the most well-known **viral diseases** affecting dogs. Most communities require a **rabies vaccination** by law because dog rabies is transmissible to humans and many other animals. There is no treatment for rabies and it is deadly. Transmission to humans is not common in the United States, but people who work closely with animals, especially wildlife, and people who travel frequently are considered at high risk and urged to get a rabies vaccination. **Dog rabies vaccination** is widely available and usually affordable. Transmission of dog rabies usually occurs through contact with wildlife. Infection occurs when a rabid animal bites a non-rabid animal, or a human. A dog rabies vaccine is essential because your dog could easily cross paths with a rabid raccoon, fox, skunk or other animal.

Rabies Symptoms

Rabies symptoms often occur in a period of stages. Once in the body, the virus spreads to the brain and incubates for 3-8 weeks. In the first or prodromal stage, a rabid dog displays apprehension, change in personality, and fever. This stage last for two or three days. In the second, or furious, phase, a rabid dog becomes irritable and restless. He may appear oversensitive to lights and noises. A rabid dog may become aggressive and attack other animals or people. Finally, a rabid dog suffers disorientation, seizures, and death. Dog rabies symptoms may include an intermediate paralytic stage, which affects the head and throat. A rabid dog in this stage may **drool excessively** due to his inability to swallow. Labored breathing and a dropped jaw may ensue. The paralytic stage leads to death from respiratory failure.

Rabies Diagnosis and Rabies Vaccine

Rabies diagnosis involves removal of the brain, so it can be inspected under a microscope. Rabies is incurable, but humans who have been exposed may receive preventative post-exposure vaccinations. Luckily dog rabies is easily preventable. **Rabies shots** can be procured from your vet and from many local humane associations. Rabies shots are inexpensive and are even made more available during public vaccination events.

Related Links:

- How Frequently Should Dog Rabies Vaccinations Be Given?
- Dog Rabies Symptoms Explained
- Understanding Dog Rabies
- Transmission of Rabies to Humans
- Dog Bite Rabies Risk

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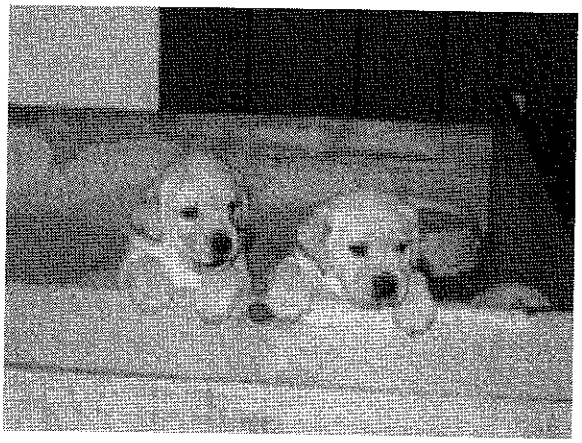
PUPPY – GETTING STARTED OFF RIGHT

When you bring a new puppy into your home there will be a period of adjustment. Your goals are to help your puppy to quickly bond to its new family, and to minimize the stress associated with leaving its mother, littermates, and former home. If there are already dogs in the new home the transition may be a little easier as the puppy is able to identify with its own kind. Obtaining two puppies would be another option. However, most puppies, especially those obtained before 12 weeks of age, will form attachments almost immediately to the people and any other pets in the new home, provided that there are no unpleasant consequences associated with each new person and experience.



Dogs are a highly social "grouping-living" species that in the wild is often referred to as a pack. Packs have a leader that the other members follow and look to for "direction." In fact, each individual in the pack generally develops a relationship with each other pack member. When puppies enter our homes the family becomes the new social group. It is essential that all owners take a leadership role over the puppy and gain a position of leadership in the family pack. Allowing behaviors that are pushy, disobedient or inappropriate may lead to problems that become increasingly difficult to correct. Control must be achieved by the proper use and timing of rewards and by directing the puppy to display appropriate responses rather than through physical techniques that can lead to fear and anxiety.

When is the best time to begin training my puppy?

Formal dog training has traditionally been delayed until 6 months of age. Actually, this juvenile stage is a poor time to begin training. The dog is beginning to solidify adult behavioral patterns, challenge behavior is emerging, and behaviors that they have learned in puppyhood may need to be changed. Therefore, it is best to begin teaching puppies from the time they are obtained. One important task to begin early is to establish you as the leader. This can be done by rewarding desirable responses, training the dog to obey commands, avoiding the reinforcement of behaviors that are initiated by your dog and training the dog to accept some simple body handling techniques.

Are physical exercises necessary for gaining control?

Although there are many physical techniques that have been advocated for gaining control, it is the owners' attitudes, actions, and responses to the new puppy (along with the puppy's genetics) that are most important in the puppy becoming either well-mannered and responsive, or assertive, stubborn, disobedient and "domineering".

Dog training literature has often discussed using scruff shakes and rollover techniques to discipline puppies. However, these physical techniques do not mimic how dogs would communicate with each other and such handling by a human could lead to fear, anxiety and even retaliation. Training is intended to teach the dog what you want, rather than discipline what you don't want. This makes a positive learning environment for the puppy to grow up in. There may be a number of advantages to teaching your puppy to assume subordinate postures (on their side, on their back, hands on neck, hand stroking the top of the head, hand grasping muzzle) but this does not mean that they teach your dog to be subordinate in its relationship to you. Having an obedient, well behaved, dog that enjoys handling and accepts restraint should be a focus of puppy training, but needs to be accomplished through reward based training, avoiding punishment and confrontational based training techniques and gradually accustoming your dog to enjoy handling. (See new puppy handling).

How can I gain control without physical exercises?

The best way for each family member to take control is to teach your puppy that each reward must be earned. This is also the best way to insure that undesirable puppy behaviors are not inadvertently reinforced. The puppy should learn to display subordinate, deferential postures through reward training, rather than through any type of force. Begin with some basic obedience training, teaching the puppy to 'sit', 'stay' and 'lie down' for rewards. Practice short sessions, multiple times each day. Whenever the puppy is to receive anything of value (affection, attention, food, play and walks) the puppy should first be taught to earn its reward by performing a simple obedience task such as 'sit' or 'stay'. Teach the puppy that rewards of any sort will never be given on demand. Also known as 'nothing in life is free', a term coined by veterinary behaviorist, Victoria Voith, or "learn to earn" as described by William Campbell, the puppy must be taught that vocalization, nipping, mouthing, overly rambunctious, or demanding behaviors of any sort will never earn rewards. In fact, these behaviors should be met by inattention, by confining the puppy for a few minutes until it settles down, or with training devices and commands that get the puppy to exhibit the desired response. Another option is to immediately control and calm the puppy with a head collar (See our handout on Biting – play biting and mouthing in puppies for details). Rewards should be given as soon as the puppy is performing an appropriate response (See handout on puppy training sit and down).

Set limits on the puppy so that it does not learn that it can control you. Having the puppy sleep in its own bed or own cage rather than on your bed or couch, helps to prevent the dog from gaining control or becoming possessive of your resources. When the puppy is taken for walks it should be taught to follow. This should begin at the front door where the puppy should be taught to sit, wait, and follow, and never allowed to lead or pull you through the doorway.

How do I prevent my puppy from doing damage or getting into mischief?

The rule of thumb for dog training is "set the dog up for success". Supervise the puppy at all times until it has learned what it is allowed to chew, and where it is supposed to eliminate.

Keeping the puppy on a 10-foot remote leash is an excellent way to keep it in sight, and to train it not to wander off. This is particularly helpful with a highly investigative puppy or for a very busy household.

At any time that the puppy cannot be supervised, such as throughout the night or when you need to go out, house it in a secure area. An escape-proof crate, a dog run, or collapsible pen are simple, highly effective, and most important, safe. The puppy could also be confined to a room that has been carefully dog-proofed. When selecting your dog's confinement area it is useful to consider a number of factors. The dog will adapt fastest to the new area if it is associated with rewards. Have the puppy enter the area for all its treats, toys, and perhaps food and water. The area should have some warm, dry, comfortable bedding, and should never be used for punishment (although it can, and should, be used to prevent problems). Housing the puppy in isolated areas where there is minimal human contact, such as in a laundry room or basement, should be avoided. In fact, often the best area is a kitchen (so that this can also be the dog's feeding area) or a bedroom (so that it becomes the dog's sleeping area). Each time the puppy needs to be confined, it should first be well exercised and given an opportunity to eliminate. Another consideration in selecting the type of confinement area is how long you may need to leave the dog alone. You must provide an area for elimination anytime the puppy will be left alone for longer than it can control its elimination. A room or collapsible pen with a paper-covered area would be needed. A cage or crate could be used for owners that do not have to leave their puppies confined for longer than 2 or 3 hours (See crate training handout for instructions on crate training your puppy).

What is the best way to punish my puppy for misbehavior?

Every effort should be made to avoid punishment for new puppies as it is generally unnecessary and can lead to avoidance of family members, at a time when bonding and attachment is critical. By preventing problems through confinement or supervision, providing for all of the puppy's needs, and setting up the environment for success, little or no punishment should ever be required. If a reprimand is needed, a verbal "no" or a loud noise is usually sufficient to distract a puppy so that you can then redirect the puppy to the correct behavior. Puppies that are supervised with a remote leash can be immediately interrupted with a pull on the leash. (See our handout on 'Punishment' for further details).

What should I do if my puppy misbehaves?

Undesirable misbehavior must be prevented, or corrected in the act. Allowing the puppy, even once to perform an undesirable behavior such as entering a restricted room, jumping up, mounting or jumping onto the couch will serve to reward and encourage the repetition of the behavior.

There will be times when your new puppy misbehaves. How you respond to the puppy will often influence later interactions. Young puppies are very impressionable. Harsh physical reprimands are contraindicated. They only serve to frighten the puppy and perhaps make them hand shy. Unfortunately, animals can learn in one trial if something is averse enough. We want young puppies to look toward a human hand as something pleasant that brings comfort, food and affection. Most puppies can be easily interrupted with vocal intonation and loud noises. What is equally important is to redirect the puppy to the correct behavior after you interrupt what you do not like. **Remember that punishment must take place while the behavior is occurring, not after.**

If you catch your puppy misbehaving, try a loud noise such as clapping your hands or a loud "uh-uh". Remember, reprimands need to occur while the behavior is happening, preferably just

as it begins, and never after. Often puppies will be startled when they hear these noises and temporarily stop the behavior. At that time you should redirect the puppy to a more appropriate task and reinforce with an immediate and positive 'good dog'.

Another way to interrupt your puppy is with various types of noise devices. One such device is a "shake can". This is an empty soda can that has a few pennies inside and then is taped shut. When given a vigorous shake it makes a loud noise, which will interrupt the puppy's behavior. Ultrasonic and sonic dog-training devices are also available (See our handout on 'Behavior management products').

The most important thing that you can do to avoid undesirable behavior is to supervise your puppy. Unsupervised puppies will chew and destroy objects as part of their natural curiosity and play. Rather than finding yourself with the need to reprimand your puppy, keep your puppy on a leash to avoid bad behaviors. Always provide suitable play objects designed to entertain your puppy so that it will not want to destroy your possessions (See our handout on 'Destructiveness – chewing' for ideas).

Most importantly, if you find something that your puppy has destroyed but you did not catch him in the act, just clean it up and vow to supervise your puppy better in the future. Do not go get your puppy and bring him over to the mess and yell and physically discipline him. Remember that you need to punish the behavior you wish to change at the time it occurs. If you did not see your puppy chew up the object, all you are doing is disciplining your puppy for being present at a mess on the floor. Since that makes no sense to your puppy, your reprimands could create fear and anxiety, which could lead to aggression and owner avoidance.

How can I prevent problems?

Supervise the puppy at all times that it is not confined to ensure that the puppy does not get itself into mischief, or cause damage to itself or the home. Leaving a remote leash attached is all that is usually needed to prevent or interrupt inappropriate behavior such as garbage raiding, chewing on household items, house-soiling, or wandering off into rooms or areas that are out of bounds. If the leash is attached to a head halter you can quickly correct other problems that might arise, such as nipping, play biting, and jumping up. When the puppy cannot be supervised, confinement (discussed above) will be necessary. See our handout on housetraining for guidance in training your puppy to eliminate in the proper location.

What can be done for the particularly stubborn, disobedient, or headstrong puppy?

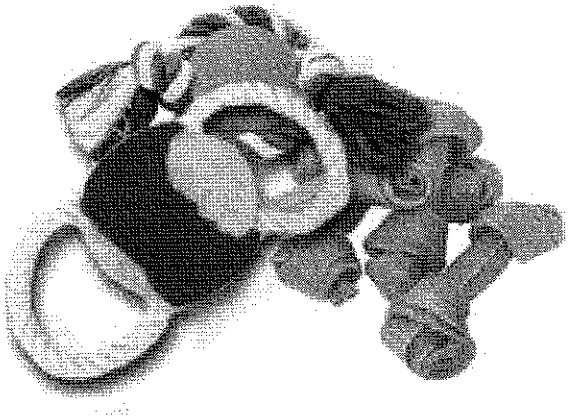
Puppies that are particularly headstrong and stubborn might need some fairly stringent rules. Tug-of-war games should only be allowed if the owner initiates the game, and can successfully call an end to the game, with an 'out', or 'give' command when it is time to call it quits (See our handout on 'Controlling stealing and teaching give'). Rough play must not escalate to uncontrollable play biting that cannot be controlled by the owner.

One of the best management tools for gaining safe and effective control at all times is a head collar. The puppy can be supervised and controlled from a distance by leaving a long line or leash attached to the head halter. The principle of halter training is to gain control over the dog with as much natural communication as possible and without the use of punishment. Positive reinforcement is used to encourage proper behavior. A pull on the leash is used to disrupt misbehavior. Since the halter is attached to the dog's muzzle, common behavior problems (nipping, barking, jumping up, pulling, stealing food, etc.) can immediately be interrupted without

fear or pain by pulling on the leash. The halter places pressure around the muzzle and behind the neck. This simulates the muzzle and neck restraint that a leader or mother dog might apply to a subordinate, and therefore is a highly effective and natural form of control (See our handout on 'Management devices in dog training').

What must I do to provide for my puppy's needs?

Chewing, play, exercise, exploration, feeding, social contact and elimination are basic requirements of all puppies. By providing appropriate outlets for each of these needs, few problems are likely to emerge. Puppies should be given chew toys that interest them and occupy their time. When supervised, the owner can allow the puppy to investigate and explore its new environment and can direct the puppy to the appropriate chew toys (and away from inappropriate areas). Play, exercise, affection, training, and handling must all be part of the daily routine. New tasks, new routines, new people and new forms of handling can be associated with rewards to ensure success. And, of course, the puppy will need to be provided with an acceptable area for elimination, and will need guidance until it learns to use this area.



This client information sheet is based on material written by Debra Horwitz, DVM, Diplomate ACVB & Gary Landsberg, DVM, Diplomate ACVB

April 27, 2010

Puppy Behavior Basics

The Humane Society of the United States

Vanessa Montgomery/The HSUS

Well-socialized dogs are more likely to have well-socialized puppies. Pups often mirror their mothers' calm or fearful attitude toward people; this is a normal part of their socialization.

But you can play a vital role, too, by petting, talking, and playing with puppy to help him develop good "people skills."

Here are general guidelines for puppy stages of development, and what to expect during their first 18 months of life

Birth to two weeks: Neonatal period

Puppy is most influenced by his mother.
Senses of touch and taste are present at birth.

Stick with your littermates

Puppies are usually weaned at six to seven weeks, but are still learning important skills as their mother gradually leaves them for longer periods of time. Ideally, puppies should stay with their littermates (or other "role-model" dogs) for at least 12 weeks.

Puppies separated from their littermates too early often fail to develop appropriate "social skills," such as learning how to send and receive signals, what an "inhibited bite" (acceptable mouthing pressure) means, how far to go in play-wrestling, and so forth.

Play is important for puppies because it increases their physical coordination, social skills, and learning limits. By interacting with their mother and littermates, puppies explore the ranking process ("who's in charge") and also learn "how to be a dog."

Most dogs are still puppies, in mind and body, through the first two years of life.

Skills not acquired during the first eight weeks may be lost forever. While these stages are important and fairly consistent, a dog's mind remains receptive to new experiences and lessons well beyond puppyhood. Most dogs are still puppies, in mind and body, through the first two years of life.

Two to four weeks: Transitional period

Puppy is most influenced by his mother and littermates.
Eyes open, teeth begin to come in, and senses of hearing and smell develop.
Puppy begins to stand, walk a little, wag tail, and bark.
By the fourth or fifth week, eyesight is well-developed.

Three to 12 weeks: Socialization period

During this period, puppy needs opportunities to meet other dogs and people.
By three to five weeks, puppy becomes aware of his surroundings, companions (both canine and human), and relationships, including play.
By four to six weeks, puppy is most influenced by littermates and is learning about being a dog.
From four to 12 weeks, puppy remains influenced by littermates and is also influenced by people. Puppy learns to play, develops social skills, learns the inhibited bite, explores social structure/ranking, and improves physical coordination.
By five to seven weeks, puppy develops curiosity and explores new experiences. Puppy needs positive "people" experiences during this time.
By seven to nine weeks, puppy is refining his physical skills and coordination, and can begin to be housetrained. Puppy has full use of senses.
By eight to 10 weeks, puppy experiences real fear involving normal objects and experiences; puppy needs positive training during this time.
By nine to 12 weeks, puppy is refining reactions, developing social skills with littermates (appropriate interactions), and exploring the environment and objects. Puppy begins to focus on people; this is a good time to begin training.

Three to six months: Ranking period

Puppy is most influenced by "playmates," which may now include those of other species.
Puppy begins to see and use ranking (dominance and submission) within the household (the puppy's "pack"), including humans.
Puppy begins teething (and associated chewing).
At four months of age, puppy experiences another fear stage.

Six to 18 months: Adolescence

Puppy is most influenced by human and dog "pack" members.
At seven to nine months, puppy goes through a second chewing phase, part of exploring territory.
Puppy increases exploration of dominance, including challenging humans.
If not spayed or neutered, puppy experiences beginnings of sexual behavior.

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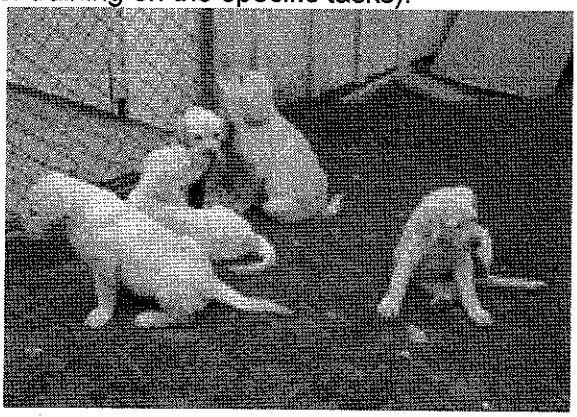
PUPPY – TRAINING BASICS

At what age can I start training my new puppy?

You will be training your puppy from the moment you bring it home and start to house train. Puppies start learning from birth. Good breeders encourage handling and socialization from birth. Some training can begin as soon as the puppy can open its eyes and walk. Young puppies have short attention spans but expect them to begin to learn simple obedience commands such as 'sit', 'down' and 'stay', from as young as 7 to 8 weeks of age. (Ask for our handouts on 'Rewards - learning and reinforcement', 'Puppy training – sit, down, stand, and stay'; and 'Puppy training – come, wait and follow' for training on the specific tasks).



Formal dog training has traditionally been delayed until 6 months of age. Actually this juvenile stage is a very poor time to start. The dog is beginning to solidify adult behavioral patterns, dominance behavior is beginning to emerge, and behaviors learned in puppyhood may need to be changed. In addition anything that has already been learned or trained incorrectly will need to be undone and retaught.

When training is started at 7 to 8 weeks of age, use methods that rely on positive reinforcement and gentle teaching. Puppies have short attention spans, so training sessions should be brief, but daily. Puppies can be taught to 'sit', 'down', and 'stand' using a method called food-lure training. We use food treats to entice the dog to follow its nose into the proper positions for 'sit', 'down', 'stand', and 'stay' (See our handout on teaching sit, down and stand).

How do I get started using food lure training?

Small pieces of food or a favored toy can be used to motivate your puppy to perform most tasks. Provided the reward is sufficiently appealing, the puppy can be prompted to get the desired response by showing the puppy the reward, giving a command, and moving it to get the desired response. For example, food held up over the puppy's nose and moved slowly backwards should get a 'sit' response; food drawn down to the floor should get a 'down' response; food brought back up should get a 'stand' response; food held out at a distance should get a 'come' response; and food held at your thigh as you walk should get the puppy to 'heel or 'follow'. By pairing a command phrase or word with each action, and giving the reward for each appropriate response, the puppy should soon learn the meaning of each command. The use of rewards and the specific training commands are covered in separate handouts on Rewards – learning and reinforcement for dogs and cats; Controlling stealing and teaching the "give" command; Teaching – sit, down, stand and stay; and Training puppies – come, wait and follow.

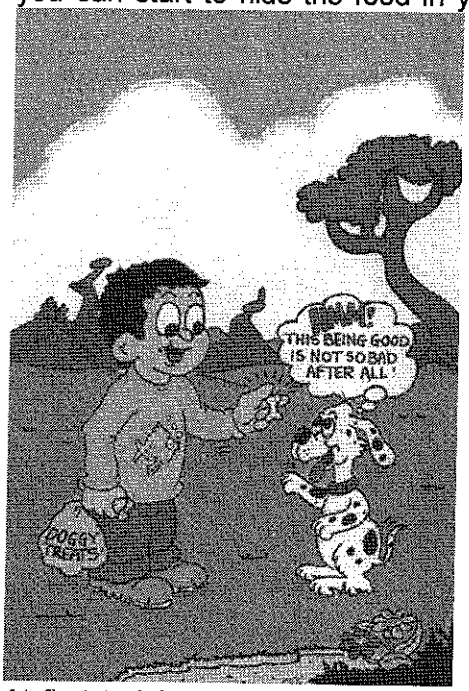
How often should I give the command?

Ideally you should give the command phrase once and then use your food to move the puppy into positions. Once the puppy has performed the task, add in verbal praise and an affectionate pat, which are known as secondary reinforcers (see below). Some trainers also use clickers as secondary reinforcers. If the puppy does not immediately obey on the first command, then you are likely proceeding a little too quickly. If you keep repeating the command, the puppy will learn that several repetitions are acceptable before it needs to obey. Keeping a leash attached can help to gain an immediate response if the puppy does not obey.

Remember that early in training your puppy does not know the meaning of the word. Therefore you could just as easily teach your puppy to sit with the word bananas, (or sit in any other language) as you could with the word sit. The key is to associate the word, in this case "sit", with the action of placing the hind end on the floor.

How should I phase out the lure and food rewards?

At first you are going to let the puppy see the food in your hand so that you will have her attention and can use it to guide her into position. As your puppy begins to comply more readily, you can start to hide the food in your hand, but give the command and repeat the motion or signal that she has learned to follow. Soon the puppy will come to expect the treat each time she performs the task. Then, signal and give the command, but when she performs the task, reward only with praise and give the puppy an affectionate pat. Next, you can begin to vary the frequency, giving praise with 'good dog' and perhaps patting each time, but giving the food randomly, perhaps every 3 or 4 times. In time, the puppy should respond to either the hand signal or the command



Over time, the words "good dog" or the affectionate pat become secondary reinforcers. Because they have been paired with food in the past, they take on more meaning and become reinforcement in themselves. It is important to use secondary reinforcement because you will not always have food with you when you need your pet to obey. In addition, if you rely on food to always get your puppy to comply, you will have a puppy that will only do the task when you have a treat.

At first training may begin in designated sessions throughout the day, with a variety of family members. All rewards should be saved for these training sessions. Over time however, you should begin to ask your puppy to perform the tasks at other times.

How much time should I spend training my puppy every day?

You do not necessarily need to train in a set session daily. Rather, integrate these tasks throughout the day. A goal to strive for is at least 15 minutes of training every day. These can be short 5 minute sessions spread throughout the day. Try to have all family members ask your puppy to do these tasks. Remember to try and train in every room of your house. You want your puppy to 'sit', 'lie down' and 'stay' everywhere, not just in the training location.

Use these training tasks as you integrate the puppy into your life. For example, ask your puppy to 'sit' prior to receiving her food, 'sit' before you let her in or out the door, and 'sit' before you pet her. These are times when your puppy wants something and is more likely to comply. In this way you are training your dog all the time, throughout the day and also establishing yourself as the leader, the one who controls the resources. Training your puppy prior to getting each reward also helps to prevent problems. Having your puppy sit before getting a food or treat prevents begging, while teaching your dog to sit before opening the door can prevent jumping up or running out the door. Be creative. The time you spend training your puppy now will pay off when you have an adult dog. To have a well-trained dog, you need to be committed to reinforcing the training tasks on nearly a daily basis for the first year of your puppy's life. The more you teach and supervise your puppy, the less opportunity it will have to engage in improper behaviors. Dogs do not train themselves, when left to choose their behavior they will act like dogs.

What can be done if my puppy is too distracted or excitable to control?

Training should begin in a quiet environment with few distractions. The reward chosen should be highly motivating so that the puppy is focused entirely on the trainer and the reward. Although a small food treat generally works best, a favorite toy or a special dog treat might be more appealing. It might also be helpful to train the puppy just before a scheduled mealtime when it is at its hungriest. For difficult puppies or headstrong puppies the best way to ensure that the puppy will perform the desired behavior and respond appropriately to the command is to leave a leash attached and to use a head collar for additional control. In this way, the puppy can be prompted into the correct response if it does not immediately obey and pressure released as soon as the desired response is achieved (see our handout on 'Management devices in dog training') Clicker training is also an excellent way to immediately and strongly reinforce the desired response (See our handout on 'Rewards – learning and reinforcement').

Should I also consider training classes?

Pet owners who are novices at training can begin a training program with these few simple steps. It takes repetition, time and perseverance for the puppy to be able to predictably and reliably respond to commands in a variety of situations. The training class serves many functions. Of course trainers can demonstrate techniques and help guide you through the steps in training. They can help advise you on puppy training problems, and can help you advance your training to more difficult exercises. The puppy will be learning in a group situation, with some real life distractions. And, considering human nature, the pet owner who takes his or her dog to a puppy class, will be forced to practice (do their homework) throughout the week, if they do not want to fall behind by the next class. A training class is a good place to meet and talk to other new puppy owners and see how all puppies behave.

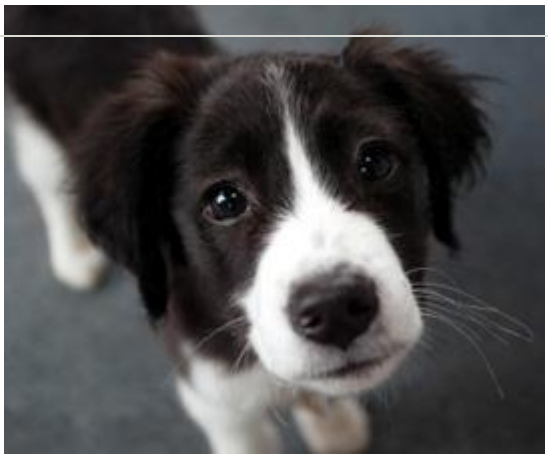
Training classes for young puppies are also an excellent way to socialize your new puppy to a variety of people, other dogs, and stimuli, in a controlled environment. In addition, you will learn how to prevent problems before they can begin, or deal with them as they emerge, rather than having to find a way to correct problems that have already developed. Your puppy might also make some new friends of the same age. You could then visit these friends (or vice versa) with

your puppy for social play and exercise sessions. Since the primary socialization period for dogs ends by 3 months of age, puppy socialization classes are most valuable for puppies 8 weeks of age and older. If all puppies in the class have had initial vaccinations, are healthy and parasite free, the health risks are low and the potential benefits are enormous. Discuss when to start and the location of classes in your area with your veterinarian.

This client information sheet is based on material written by Debra Horwitz, DVM, Diplomate ACVB & Gary Landsberg, DVM, Diplomate ACVB

October 30, 2009

Housetraining Puppies



Housetraining your puppy requires far more than a few stacks of old newspapers—it calls for vigilance, patience, plenty of commitment and above all, consistency.

By following the procedures outlined below, you can minimize house soiling incidents. Virtually every dog, especially puppies, will have an accident in the house, and more likely, several. Expect this—it's part of living with a puppy.

The more consistent you are in following the basic housetraining procedures, the faster your puppy will learn acceptable behavior. It may take several weeks to housetrain your puppy, and with some of the smaller breeds, it might take longer.

Establish a routine

Like babies, puppies do best on a regular schedule. The schedule teaches him that there are times to eat, times to play, and times to potty.

Generally speaking, a puppy can control his bladder one hour for every month of age. So if you're puppy is two months old, he can hold it for about two hours. Don't go longer than this between bathroom breaks or he's guaranteed to have an accident. If you work outside the home, this means you'll have to hire a dog walker to give your puppy his breaks.

Take your puppy outside frequently—at least every two hours—and immediately after he wakes up, during and after playing, and after eating or drinking.

Pick a bathroom spot outside, and always take your puppy to that spot using a leash. While your puppy is eliminating, use a word or phrase, like "go potty," that you can eventually use

before he eliminates to remind him what to do. Take him out for a longer walk or some playtime only after he has eliminated.

Reward your puppy every time he eliminates outdoors. Praise him or give him a treat—but remember to do so immediately after he's finished eliminating, not after he comes back inside the house. This step is vital, because rewarding your dog for eliminating outdoors is the only way he'll know what's expected of him. Before rewarding him, be sure he's finished eliminating. Puppies are easily distracted. If you praise him too soon, he may forget to finish until he's back in the house.

Put your puppy on a regular feeding schedule. What goes into a puppy on a schedule comes out of a puppy on a schedule. Depending on their age, puppies usually need to be fed three or four times a day. Feeding your puppy at the same times each day will make it more likely that he'll eliminate at consistent times as well, and that makes housetraining easier for both of you.

Pick up your puppy's water dish about two and a half hours before bedtime to reduce the likelihood that he'll need to potty during the night. Most puppies can sleep for approximately seven hours without having to eliminate.
If your puppy does wake you up in the night, don't make a big deal of it; otherwise, he will think it is time to play and won't want to go back to sleep. Turn on as few lights as possible, don't talk to or play with your puppy, take him out to do his business, and return him to his bed.

Supervise

Don't give your puppy an opportunity to soil in the house; keep an eye on him whenever he's indoors.

Tether your puppy to you or a nearby piece of furniture with a six-foot leash if you are not actively training or playing with him. Watch for signs your puppy needs to eliminate. Some signs are obvious, such as barking or scratching at the door, squatting, restlessness, sniffing around, or circling. When you see these signs, immediately grab the leash and take him outside to his bathroom spot. If he eliminates, praise him lavishly and reward him with a treat.

Keep your puppy on leash in the yard. During the housetraining process, your yard should be treated like any other room in your house. Give your puppy some freedom in the house and yard only after he is reliably housetrained.

Confinement

When you're unable to watch your puppy at all times, he should be confined to an area small enough that he won't want to eliminate there. The space should be just big enough for him to comfortably stand, lie down, and turn around in. You can use a portion of a bathroom or laundry room blocked off with baby gates.

Or you may want to crate train your puppy and use the crate to confine him. (Be sure to learn how to use a crate humanely as a method of confinement.) If your puppy has spent several hours in confinement, you'll need to take him directly to his bathroom spot as soon as you let him out, and praise him when he eliminates.

Oops!

Expect your puppy to have a few accidents in the house—it's a normal part of housetraining. Here's what to do when that happens:

Interrupt your puppy when you catch him in the act of eliminating in the house.

Make a startling noise (be careful not to scare him) or say "OUTSIDE!" Immediately take him to his bathroom spot, praise him, and give him a treat if he finishes eliminating there.

Don't punish your puppy for eliminating in the house. If you find a soiled area, it's too late to administer a correction. Just clean it up. Rubbing your puppy's nose in it, taking him to the spot and scolding him, or any other punishment will only make him afraid of you or afraid to eliminate in your presence. In fact, punishment will often do more harm than good.

Clean the soiled area thoroughly. Puppies are highly motivated to continue soiling in areas that smell like urine or feces. Check with your veterinarian or pet store for products designed specifically to clean areas soiled by pets.

It's extremely important that you use the supervision and confinement procedures outlined above to minimize the number of accidents. If you allow your puppy to eliminate frequently in the house, he'll get confused about where he's supposed to eliminate, which will prolong the housetraining process.

When you're away

A puppy under six months of age cannot be expected to control his bladder for more than a few hours at a time (approximately one hour for each month of age). If you have to be away from home more than four or five hours a day, this may not be the best time for you to get a puppy; instead, you may want to consider an older dog, who can wait for your return.

If you already have a puppy and must be away for long periods of time, you'll need to:

Arrange for someone, such as a responsible neighbor or a professional pet sitter, to take him outside to eliminate.

Train him to eliminate in a specific place indoors. Be aware, however, that doing so can prolong the process of housetraining. Teaching your puppy to eliminate on newspaper may create a life-long surface preference, meaning that even as an adult he may eliminate on any newspaper lying around the living room.

Paper training

When your puppy must be left alone for long periods of time, confine him to an area with enough room for a sleeping space, a playing space, and a separate place to eliminate.

In the designated elimination area, use either newspapers (cover the area with several layers of newspaper) or a sod box. To make a sod box, place sod in a container such as a child's small, plastic swimming pool. You can also find dog litter products at a pet supply store.

If you clean up an accident in the house, put the soiled rags or paper towels in the designated elimination area. The smell will help your puppy recognize the area as the place where he is supposed to eliminate.

November 3, 2009

Puppy Nipping and Rough Play

The Humane Society of the United States

It's not always easy to convince a new puppy not to bite the hand that feeds him, pets him, or plays with him, for that matter.

When puppies play with each other, they use their mouths, so they may also be inclined to bite or "mouth" your hand during play or when being petted. This is rarely aggressive behavior meant to do harm, but it is a difficult habit to break unless you encourage your puppy to try an acceptable alternative behavior. The goal is to redirect your puppy's energy onto acceptable chew toys, and to teach her to be gentle when a hand is in or near her mouth.

Encourage acceptable behavior

Redirect your puppy's penchant for nipping and biting by offering her more acceptable objects (such as chew toys) whenever you pet her. This technique can be especially effective when children want to pet her.

As you or the child reaches out to scratch her behind the ears with one hand, offer the chew toy with the other. This will not only help your puppy learn that people and petting are wonderful, but will also keep her mouth busy while she's being petted. Alternate which hand does the petting and which one has the chew toy. You may need to start off by petting or scratching your puppy for short periods of time, since the longer she's petted, the more likely she is to get excited and start to nip.

Discourage unacceptable behavior

You must also teach your puppy to be gentle with hands, and show her that nipping results in unpleasant consequences. Teach your puppy that nipping "turns off" any attention and social interaction with you. As soon as a nip occurs, look your puppy right in the eye and yell "OUCH" as though you've been mortally wounded. Then ignore her. Leave the room if you must, but ignore her until she's calm, and then try the chew toy and petting method again.

Jumping up

When your puppy jumps up on you, she wants attention. Even if you push her away, she is still getting attention (even if it is a response that you might consider negative).

When your puppy jumps up:

Fold your arms in front of you, turn away from her, and say "off."

Continue to turn away from her until all four paws are on the ground, then quietly praise her and give her a treat. If she knows the "sit" command, give the command when all four paws are on the ground, then quietly praise her and give her a treat while she's in the sitting position.

If she begins to jump while you're praising her, simply turn away and repeat the second step, above. Remember to keep your praise low-key.

When your puppy realizes that she gets no attention from you while she's jumping up, but does get attention when she sits, she'll stop jumping up. Remember, once you've taught her to come and sit quietly for attention, you must reward her behavior. Be careful not to ignore her when she comes and sits politely, waiting for your attention.

What not to do

Attempts to tap, slap, or hit your puppy in the face for nipping or jumping up are almost guaranteed to backfire. Several things may happen, depending on your puppy's temperament and the severity of the correction:

She could become "hand-shy" and cringe or cower whenever a hand comes toward her face.

She could become afraid of you, and refuse to come to you or approach you at all.

She could respond in a defensive manner and attempt to bite you to defend herself.

She could interpret a mild slap as an invitation to play, causing her to become more excited and even more likely to nip.

Set boundaries when playing "tug-of-war" or wrestling games with your puppy. When trained properly, these types of games can teach your puppy bite restraint and the limitations of rough play.

Be consistent

It's important that all behaviors, acceptable and unacceptable, be managed consistently by all family members. And remember that any method you try will probably not be effective unless you work hard to teach your puppy an acceptable alternative behavior.

A note about children and puppies

It's very difficult for children under 8 or 9 years old to practice the kind of behavior modification outlined here. Children's first reaction to being nipped or mouthed by a puppy is to push the puppy away with their hands and arms. This will be interpreted by the puppy as play and will probably cause the puppy to nip and mouth even more. Adults should closely monitor all interactions between their children and dogs.

June 9, 2010

Dog Training: Nothing in Life is Free

The Humane Society of the United States

You're relaxing on the sofa reading the paper when your dog bumps your leg to get your attention. You ignore him so he plops his ball in your lap.

You ignore him again so, being a persistent pup, he sticks his head under the newspaper, making it impossible for you to read that story about what your neighbor was caught doing. Exasperated, you toss the ball for your dog. Boy, has he got you trained!

Do you wish the roles were reversed?

If so, a training technique called "Nothing in Life is Free" may be just the solution you're looking for. "Nothing in Life is Free" isn't a magic pill that will solve a specific behavior problem. Instead, it's a way of living with your dog that will help him behave better because he trusts and accepts you as his leader and is confident knowing his place in the family.

What is "Nothing in Life is Free"?

You have resources—food, treats, toys, and attention. Your dog wants those resources. Make him earn them. That's the basis of "Nothing in Life is Free." When your dog does what you want, he gets rewarded with the thing he wants.

You may also hear this aspect of training called "No Free Lunch" or "Say Please." Those are just other names for "Nothing in Life is Free."

How to practice "Nothing in Life is Free"

1. First, use positive reinforcement methods to teach your dog a few commands and/or tricks. "Sit," "Down," "Come," and "Stay" are useful commands. "Shake," "Speak," and "Roll over" are fun tricks to teach your dog.

2. Stop giving away resources. Do you mindlessly pet your dog for no reason? Stop. Your attention is a valuable resource to your dog. Don't give it away. Make him earn it.

3. Once your dog has mastered a few commands, you can begin to practice "Nothing In Life Is Free."

Before you give your dog anything (food, a treat, a walk, etc.) he must first perform one of the commands he has learned. For example:

- In order for you to put your dog's leash on to go for a walk, he must sit until you've put the leash on.
- When you feed your dog, he must sit and stay until you've put the bowl on the floor.
- Play a game of fetch after work and make your dog sit and "shake hands" each time you throw the toy.
- Rub your dog's belly while watching TV, but make him lie down and roll over before being petted.

4. Once you've given the command, don't give your dog what he wants until he does what you want. If he refuses to perform the command, don't give in. Be patient and remember that eventually he will have to obey your command to get what he wants.

5. Make sure your dog knows the command well and understands what you want before you begin practicing "Nothing in Life is Free."

The benefits of this technique

Requiring your dog to work for everything he wants is a safe, positive, non-confrontational way to establish your leadership position.

Even if your dog never displays aggressive behavior such as growling, snarling, or snapping, he can still manipulate you. He may be affectionate to the point of being "pushy," such as nudging your hand to be petted or "worming" his way onto the furniture to be close to you. This technique gently reminds the dog that he must abide by your rules.

Fearful dogs may become more confident by obeying commands. As they succeed in learning more tricks, their continued success will increase confidence and ultimately lead them to feeling more comfortable and less stressed.

Why this technique works

Dogs want good stuff. If the only way to get it is to do what you ask, they'll do it.

Good leadership encourages good behavior by providing the guidance and boundaries dogs need. Practicing "Nothing in Life is Free" gently and effectively communicates to your dog that you are the leader because you control all the resources.

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LEARN TO EARN PROGRAM

What is learn to earn?

Over the years, a number of useful "catch phrases" have been used to help describe to pet owners the importance of taking control of their pet and the environment. One of the best ways to do this is by control of rewards so that they are used exclusively to reinforce desirable behaviors. For example, food and treats, affection and attention, access to the outdoors, play and walks can be powerful reinforcers as long as the owner stops using these rewards for all behaviors except those that are the focus of training. Learn to earn, which was introduced as a dog training concept by William Campbell in the early 70's, is a simple catch phrase which perhaps best captures the concept that when something positive is given to the pet, he can learn that the behavior is desirable to repeat. Therefore it is essential that the rewards are given for the behaviors we want and not those that we do not want. In addition, by withholding rewards at all other times, it can be insured that the motivational value of the rewards remains high and that undesirable behaviors are not reinforced. Another catch phrase "no casual interactions" by Andrew Luescher helps to remind owners of this concept, all attention is earned through responses to commands and the reward is the attention or access to something the pet desires. Dr. Karen Overall uses the term "deference training" to focus on the idea that the goal is to have the pet learn to defer to the owner for each reward. Deference can be sitting and waiting quietly until the item is given. Not only does the pet become more settled and relaxed, but it becomes clear to the pet which behaviors will earn rewards (predictability) An alternative catch phrase that similarly reminds the owner that each reward should only be given for learning and training what is desired is Nothing in life is free a term coined by Dr. Victoria Voith . Reinforcing what we want in our pets rather than punishing what we don't want is the focus of an excellent guide to reward based training "Don't Shoot the Dog", by Karen Pryor.

It is paramount that **you** are in control at all times!

Can learn to earn be used to correct behavior problems?

This program is a very useful way to restructure your relationship. It is important that dogs should be taught the social boundaries of their environment and the fact that you are in control at all times. Control should be benign and non-confrontational. It is done by controlling what the dog has and what the dog gets. Equally important is that the pet understands what behaviors are desirable and what behaviors earn rewards. By providing rewards only for those behaviors that are desired, increasingly more accurate responses can be reinforced, and reinforcement of inappropriate behavior (e.g. attention seeking, play biting, jumping up) will cease. Rewards can be affection, attention, praise, food, treats, play, toys, etc. Choose the behaviors that you wish to reinforce and make it clear to your pet that these rewards have to be earned. In fact, the

first step in resolving many behavior problems will be to cease all casual interactions with the pet. In this way each and every one of the pets rewards can be given to reinforce the desirable behavior, and to improve response to commands.

What happens if a problem arises?

Establishing a routine from the outset is important for dogs, so they know what is required of them and where the boundaries are. Without this they can become anxious and develop a range of problems. If the dog becomes disobedient, withdraw any reward normally given on completion of the exercise; this places you, the owner, in control. Ensure that the dog learns that the reward will only be reinstated once the task is completed satisfactorily. The dog must be learn what behavior is needed to get the reward.

Rewards must be appropriate. For example food treats are often used as training rewards and are clearly less effective if used immediately after a meal. Similarly playing with toys will not be effective if the dog is continuously surrounded with toys. Therefore it is important if any form of behavior modification or re-training program has to be put in place that rewards are chosen with care and then withdrawn until the particular task is successfully completed. This will soon make it clear that the dog is not in control of these resources and will provide you with an opportunity to teach the dog what behaviors will be reinforced. Rewards can also be access to things the dog desires such as going outdoors or coming inside. Prior to receiving these items, the dog is asked to perform a simple task such as "sit" and the reward is only given if the dog complies.

How do we start?

This obviously depends on the problem behaviour. Start in a safe and non-distracting environment and the chosen reward is given for compliance. For example the dog is always asked to sit before he is petted, but if he does not sit, no attention is given. Once a reliable response is established from the dog practice the commands in a variety of environments and with all family members, or even strangers if appropriate for the particular problem.

Staying in control

It is paramount that you are in control at all times. Do this via the chosen reward for which the dog craves. Ensure that the reward is always earned. With a simple training procedure this usually means that before the reward is given the dog is asked to come, sit, stay, etc. Ensure the task has been successfully accomplished. Then reward!

Any training procedure should be broken down into simple components. For example, if you are training your dog to come to you and sit at your side, start by recalling your dog and rewarding as soon as he comes to you. Once this component has been reliably established get him to come but put him into the sit position before the reward is offered. With these exercises the dog soon learns that you are in charge.

What happens if my dog learns to anticipate the routine?

Change it! Some dogs rapidly learn to anticipate your routine. If that occurs, change the procedure. For example many owners ask their dog to sit before being fed. If your dog starts to sit before the command has been given, change the routine. Request the dog to either lie, or to stand. With repetition of these exercises your dog will soon learn that you are in charge and will look to you for instruction when uncertain rather than to take control in these situations. This is important since many dogs become anxious when uncertain and may attempt to use aggressive behaviours to take control. This is something that should not be tolerated, but should not be confronted with force.

What happens if my dog refuses to obey my commands?

Avoid confrontation or a situation that might lead to aggression or where you may not be able to maintain control. Terminate the exercise. Remember every time your dog fails to comply it reinforces his control, not yours. In other words, if you ask the dog to sit prior to opening the door, but the dog does not comply the door is not opened and you walk away.

How do I regain control?

A long lead and head collar is useful and can be used both outside when on walks and also in the home. Each time the dog is given a command that is not obeyed, use the lead and collar to achieve the desired response. Once achieved, reward the dog.

Repetition is important. Continue until the dog responds to verbal controls only without the need for the lead and collar control.

Depending upon the problem you will often find that continuous reinforcement is needed. Once the desired response is achieved switch to a program of variable and intermittent reinforcement. Sometimes the dog slips back and you may find you have to use the lead and collar and more frequent reinforcement.

This client information sheet is based on material written by Debra Horwitz, DVM, Diplomate ACVB & Gary Landsberg, DVM, Diplomate ACVB

Dogs: Positive Reinforcement Training

Just say yes to training your dog with treats and praise

The Humane Society of the United States

Remember how happy you were if your parents gave you a dollar for every A on your report card? They made you want to do it again, right? That's positive reinforcement.

Dogs don't care about money. They care about praise … and food. Positive reinforcement training uses praise and/or treats to reward your dog for doing something you want him to do. Because the reward makes him more likely to repeat the behavior, positive reinforcement is one of your most powerful tools for shaping or changing your dog's behavior.

Rewarding your dog for good behavior sounds pretty simple, and it is! But to practice the technique effectively, you need to follow some basic guidelines.

Timing is everything

Correct timing is essential when using positive reinforcement.

The reward must occur immediately—within seconds—or your pet may not associate it with the proper action. For example, if you have your dog sit but reward him after he's stood back up, he'll think he's being rewarded for standing up.

Using a clicker to mark the correct behavior can improve your timing and also help your dog understand the connection between the correct behavior and the treat.

Keep it short

Dogs don't understand sentences. "Daisy, I want you to be a good girl and sit for me now" will likely earn you a blank stare.

Keep commands short and uncomplicated. The most commonly used dog commands are:

watch me
sit
stay
down (which means "lie down")
off (which means "get off of me" or "get off the furniture")
stand
come
heel (which means "walk close to my side")
leave it

Consistency is key

Everyone in the family should use the same commands; otherwise, your dog may be confused. It might help to post a list of commands where everyone can become familiar with them.

Consistency also means always rewarding the desired behavior and never rewarding undesired behavior.

When to use positive reinforcement

The good: Positive reinforcement is great for teaching your dog commands, and it's also a good way of reinforcing good behavior. You may have your dog sit

before letting him out the door (which helps prevent door-darting)
before petting him (which helps prevent jumping on people)
before feeding him (which helps teach him good meal-time manners).

Give him a pat or a "Good dog" for lying quietly by your feet, or slip a treat into a Kong®-type toy when he's chewing it instead of your shoe.

The bad: Be careful that you don't inadvertently use positive reinforcement to reward unwanted behaviors. For example, if you let your dog outside every time he barks at a noise in the neighborhood, you're giving him a reward (access to the yard) for behavior you want to discourage.

Shaping behavior

It can take time for your dog to learn certain behaviors. You may need to use a technique called "shaping," which means reinforcing something close to the desired response and then gradually requiring more from your dog before he gets the treat.

For example, if you're teaching your dog to "shake hands," you may initially reward him for lifting his paw off the ground, then for lifting it higher, then for touching your hand, then for letting you hold his paw, and finally, for actually "shaking hands" with you.

Types of rewards

Positive reinforcement can include food treats, praise, petting, or a favorite toy or game. Since most dogs are highly food-motivated, food treats work especially well for training.

A treat should be enticing and irresistible to your pet. Experiment a bit to see which treats work best for your pet.

It should be a very small (pea-size or even smaller for little dogs), soft piece of food, so that he will immediately gulp it down and look to you for more. Don't give your dog something he has to chew or that breaks into bits and falls on the floor.

Keep a variety of treats handy so your dog won't become bored getting the same treat every time. You can carry the treats in a pocket or fanny pack.

Each time you use a food reward, you should couple it with a verbal reward (praise). Say something like, "Yes!" or "Good dog," in a positive, happy tone of voice. Then give your dog a treat.

If your dog isn't as motivated by food treats, a toy, petting, or brief play can be very effective rewards.

When to give treats

When your pet is learning a new behavior, reward him every time he does the behavior. This is called continuous reinforcement.

Once your pet has reliably learned the behavior, you want to switch to intermittent reinforcement, in which you continue with praise, but gradually reduce the number of times he receives a treat for doing the desired behavior.

At first, reward him with the treat four out of every five times he does the behavior. Over time, reward him three out of five times, then two out of five times, and so on, until you're only rewarding him occasionally.

Continue to praise him every time—although once your dog has learned the behavior, your praise can be less effusive, such as a quiet but positive, "Good dog."

Use a variable schedule of reinforcement so that he doesn't catch on that he only has to respond every other time. Your pet will soon learn that if he keeps responding, eventually he'll get what he wants—your praise and an occasional treat.

Caution! Don't decrease the rewards too quickly. You don't want your dog to become frustrated.

By understanding positive reinforcement, you'll see that you're not forever bound to carry a pocketful of goodies. Your dog will soon be working for your verbal praise, because he wants to please you and knows that, occasionally, he'll get a treat, too.

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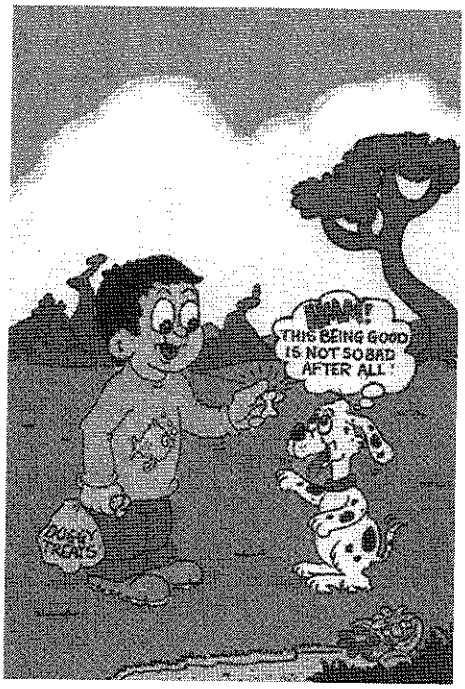
REWARDS: LEARNING AND REINFORCEMENT

The best way to train your pet is through the proper use of positive reinforcement and rewards while avoiding punishment. The goal of training is to "learn" the proper task and/or behavior. The training sequence is to give a command, to get the desired response, and to use a reward to mark and reinforce the correct response. Generally the most difficult aspect of training is to find techniques that immediately get the desired response after each command (See our handout on basic training for more details).

How does learning take place?

Learning occurs by establishing the relationship between behavior and consequences. There can be different possible outcomes of behavior, and consequences can be positive or negative.



When there is a positive relationship between behavior and consequences, the more your pet performs a certain behavior, the more of the consequence it receives. If there is a negative relationship between behavior and outcome, the more of the behavior the pet does the less of the consequence it receives. When we increase a behavior by removing a stimulus this is known as negative reinforcement. For example, when a dog barks at an intruder (such as a letter carrier) the barking has been reinforced because the stimulus (letter carrier) was removed. Negative reinforcement can also be used for training when a pull on a head halter or a spray of citronella is terminated as soon as the desirable behavior is observed.

What is positive reinforcement?

Positive reinforcement is anything that increases the likelihood that a behavior will be repeated. There is a positive relationship between behavior and consequence. The more the pet does a behavior, the more consequence it receives and what it gets is good. This makes that behavior increase.

What kinds of things will a dog consider positive reinforcement?

They will differ from dog to dog. For some it may be a pat on the head, a play session, a fun toy, a walk, or a food treat. The key is to select the reward that motivates **your** pet. It can be useful to feed your dog, depending on its age, at one or two scheduled meal times. Training sessions can then be performed just prior to mealtime when the dog is at its hungriest. Most puppies can then be motivated with pieces of food. In the same way, toys, play sessions and affection can

be withheld until training time so that the dog is "hungrier" for these rewards and so that the pet learns what behaviors will be followed by rewards. The more predictable the rewards, the more likely for the pet to continue the behavior. On the other hand, if rewards are unpredictable (e.g. affection) the pet will not learn the desired response. Some of the dogs that are hardest to train are those that are difficult to motivate. These dogs may do better with a few special treats that are saved specifically for training sessions (e.g. hot dog slices, small morsels of cheese), or pieces of dog food sprinkled with flavoring such as powdered cheese or garlic. By the way, if there's no good reason to give your dog a treat, don't - it fills him or her up, and accomplishes nothing. Consider these tidbits and biscuits not as treats but as "training rewards". If these rewards are saved exclusively for training they become more motivating and the pet will learn quickly what behavior leads to that reward. Whenever you are giving the dog something of value from food to a walk, first give your dog a command so that each reward can be earned (See our handout on learn to earn).

How do I properly use positive reinforcement?

The proper use of positive reinforcement is more than just giving a treat or a pat on the head. The timing of the reinforcement is very important. Remember, your pet is behaving all the time. So, you need to be sure to reinforce the behavior that you want and not some other. Therefore, closely associate the reinforcement with the behavior you wish to increase. Reinforcement must immediately follow the behavior (within 3-10 seconds). If there is any delay, you run the risk of the pet engaging in another behavior while you are administering the reinforcement. One example is when you teach a dog to sit. You tell your dog to 'sit', and manipulate her into the position. While you are saying 'good dog' and giving a food treat, the dog stands up. What has just happened? You have rewarded 'sit' and 'stand up'. Another example is when you are house-training your dog. You send your dog outdoors to eliminate and as soon as the dog is finished, you call the dog back into the house, dry her feet and give it a reward. What happened this time? You just rewarded your dog for coming back into the house and having the feet dried.

Should I reward my pet every time?

The frequency of reinforcement is important. The rate at which behavior is reinforced is called the "schedule". There are several different schedules of reinforcement.

A. *Continuous reinforcement.* Every time your pet engages in a behavior it is reinforced with a reward. While this may sound like a good idea, it is actually less than ideal. If you reward a behavior continuously, once you cease rewarding the behavior, it will often stop. But continuous reinforcement is useful when first teaching a new task so that the animal learns the task that leads to a good outcome.
B. *Ratio or variable rate of reinforcement.* The reinforcement does not come after each performance of the behavior but intermittently. This may mean that instead of a reward every time, the pet gets a reward every third time, then perhaps two in a row, then maybe not until the pet has performed the behavior five more times. What happens if you reward this way? Behavior tends to be stronger and last longer. This type of reinforcement is best instituted once the pet reliably knows the task you wish to teach and helps keep the pet responding at a high rate.

Start training new commands or tasks with continuous reinforcement but switch to intermittent, variable rates as soon as your pet is responding consistently.

What if my rewards are not working?

First, you may not be reinforcing the correct task. Remember the example of 'sit' and 'stand up'. Be sure that the timing of your reinforcement is immediately after the behavior you wish to increase. Second, you may be phasing out your reinforcement before your pet has adequately learned the new behavior. Go back to basics and be sure your pet understands what to do. Therefore, until your dog consistently responds to the command, it can be valuable to leave a leash attached so that you can immediately show your pet what it is "supposed" to do. It is also possible that you may be repeating commands several times, or in different ways and thus confusing your pet. Ask for our handouts on training for specific tasks for additional help.

What type of rewards should I use?

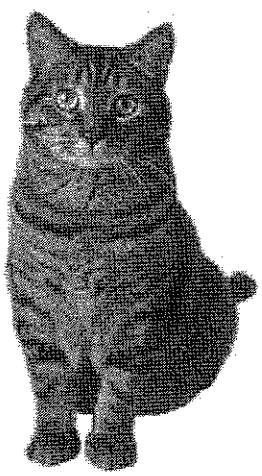
Rewards do not always have to be food. For many pets, owner attention can be a reward as can a walk in the park or a game of fetch. In fact, any time your pet is in the mood for some social interaction, and any time you are giving a toy, food or treat, you have the perfect opportunity to first train your pet to a command. If you do not keep track of when and where you give rewards you may actually be reinforcing undesirable behavior (see below). What is important is that it be appropriate and motivating for your pet. Remember, you need not give a "special" reward such as food each time your pet performs a task, but always acknowledge good behavior if only with praise or affection.

Is there a wrong way to reward my dog?

Yes. We may reinforce behaviors that we do not want. Remember that positive reinforcement makes behavior increase. So, there may be times when you may be inadvertently giving reinforcement when the pet is exhibiting a behavior that is undesirable. Giving any form of attention to a barking dog, a dog that is jumping up, or a dog scratching at the back door only serves to reward the behavior. Sometimes people even give a bit of food, pat the dog, or play with it in an attempt to calm it down. What they are really doing however is reinforcing the problem behavior. Similarly you may think that you are punishing your dog when you are indeed reinforcing behaviors. Examples include scolding your dog with an insufficiently harsh tone of voice, or gently pushing the dog away when it is play-biting. What is worse is that when these behaviors are rewarded occasionally or intermittently, the behavior becomes stronger and lasts longer (see above). A reward should never be given unless it is earned.

What are other ways in which rewards can be used?

There are other situations where rewards can be most helpful. For example, it may help a puppy or even an adult dog to learn to accept new people if that greeting is always coupled with a food treat. This will help the pet learn that new people bring something good. In other cases, rewards can be used to encourage desirable behavior. Food enhanced toys may encourage a dog to chew on them instead of the household possessions. Removal of a reward as soon as the dog exhibits undesirable behavior is another training tool known as negative punishment (e.g. stopping play when the dog bites too hard). In this example, the reward is used as a punishment since play biting should be reduced or cease since it leads to the reward being removed.



What type of rewards would I use for my cat?

Cats respond to training like dogs, however, they seem to need reinforcement at a higher rate than dogs to maintain performance. Food is often the best reinforcement for cats, but many will enjoy play sessions with favorite toys as well. Like dogs, finding small tidbits of human food, or special cat treats with high appeal, may be more motivating than regular food. Train your cat with these treats before mealtime, not after, and feed your cat on a meal schedule not free choice so that it is hungry at training times. Remember to think of toys and snacks as rewards, not as treats. It can be an extremely useful and fun exercise to train your cat to a few simple commands (come, sit, meal time). All it takes is to encourage the behavior (e.g. with a toy or food lure), reward the behavior, and once the cat will respond reliably, add a command. A leash and harness can also help to prompt the cat to get the desired response. These commands can come in very useful when you need to communicate with your cat.

What is clicker training and how does it work?

A clicker or an audible tone (found on some remote collars) can be paired with a food reward by consistently sounding it just prior to giving the food until it becomes a conditioned stimulus for food. The value of a clicker is that it can then be used as a reward to immediately mark correct responses in a convenient and precise manner, with the food being given shortly afterwards. By consistently pairing food with the clicker their value can be maintained throughout training. Highest-level rewards, including the clicker, can be used for initial training of new responses, and for counter-conditioning. Once the clicker is predictive of a reward, the clicker can be used as a bridging stimulus. This means that the clicker can be used to immediately as a positive marker of the correct response, and the food reward can be slightly delayed until it is available. For example if a dog were to eliminate outdoors or a cat eliminate in its litter and you were supervising so that you could immediately click, then even if you had to come indoors or go to the refrigerator to retrieve the treat, the pet would still associate the treat with the behavior. Clickers are an excellent way to gradually shape more elaborate or more accurate responses since it is possible to reinforce one small increment of behavior and then with each subsequent session, reinforce responses that are gradually closer to the final goal. In addition to clickers, favored food rewards can be paired with praise, stroking or petting.

This client information sheet is based on material written by Debra Horwitz, DVM, Diplomate ACVB & Gary Landsberg, DVM, Diplomate ACVB

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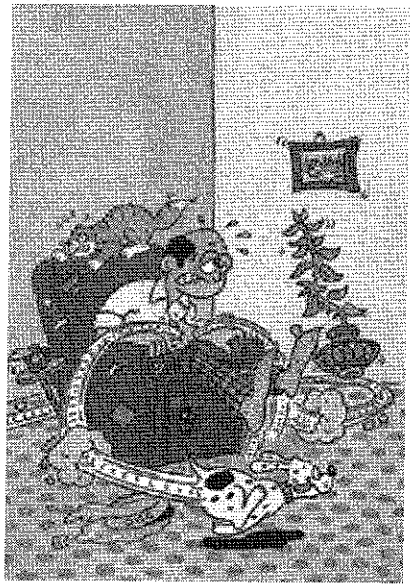
TRAINING PROBLEMS: WHAT TO DO ABOUT DISOBEDIENT, UNRULY, AND EXCITABLE DOGS

How can I determine if my dog is just acting like a "puppy" or is too excitable or disobedient?

Many excitable and rowdy behaviors that we see in puppies will diminish with time and proper early training. For helpful information see our handouts on Puppy getting started right and puppy training. The unruly dog is one that continues to be difficult for the owner to manage past puppyhood or 6 - 9 months. Up until this age, puppies may also be excitable, difficult to control, or hard to train, but this would likely not be considered excessive when one considers normal puppy behavioral development and the time required to adequately train. The excitable, unruly or disobedient dog would be one that after sufficient attention to training, still does not respond to commands, will not walk nicely on a leash, jumps on people, continually barks for attention, steals things or generally wreaks havoc on the household. The problem is compounded in large dogs because of their size.



Do dogs get "attention deficit disorder" or can they be "hyperactive"?

While a hyperactivity disorder likely does exist in dogs, it is rare. Dogs that are hyperactive, also called hyperkinesis or attention deficit hyperactivity disorder (ADHD) can be diagnosed by veterinary examination and testing. Dogs with a hyperactivity disorder are difficult to train, respond poorly to tranquilization, may exhibit repetitive behaviors such as incessant barking or circling, may have gastrointestinal disorders, and can be extremely resistant to restraint. If these dogs do have attention deficit disorder they may respond paradoxically to amphetamine type drugs. This means that instead of getting more excitable when given amphetamines, these dogs tend to calm down and become more focused for training. Most cases however, are simply overly energetic dogs that may not be getting sufficient exercise and routine to their day, or who are being accidentally rewarded when they act excitedly (see our handout on 'Play and exercise in dogs').

How can I prevent my puppy from becoming a disobedient dog?

Appropriate, frequent and regularly scheduled exercise sessions, providing appropriate outlets along with an early start to training can go a long way to preventing most unruly behaviors. Waiting to train your puppy until it is 6 months of age can often let these disobedient behaviors take hold. With early training, excitable puppies can often have their behavior channeled in the correct direction. A puppy must consistently be taught the rules and expectations of the family. Asking the puppy to sit for things, teaching the puppy how to relax and settle in a safe location

help teach the puppy the rules of the home and self-control. (Ask for our handouts on 'Play and exercise in dogs'; 'Puppy – getting off to a good start, puppy house training guide'; 'Puppy training: basics'; 'Teaching – sit, down, stand and stay'; and 'Teaching – come, wait, and follow', learn to earn and teaching how to settle on command). By providing a daily routine with sufficient exercise, chew outlets and training, and teaching the puppy the behaviors that will earn it rewards (learn to earn), most puppies will soon grow out of their problems.

I have tried training my dog without success. What went wrong?

Many owners may have tried traditional obedience training without success. Your dog may still jump on people, barks incessantly and defies commands. In many cases the issue is that the dog has not learned what you want him to do. Specific handouts are available on jumping up, teaching the dog to walk properly on leash and training of basic commands. Attempting to reprimand all the misbehavior will be ineffective. When you remove a behavior from the animal's repertoire it will be replaced with something else. In addition punishment is intended to teach the dog what NOT to do, and may make the pet fearful which could lead to avoidance (flight), freezing, or aggression (fight). Instead your goal should be to train and reinforce the behavior that you want your dog to exhibit or to prevent the undesirable behavior if you are unable to supervise and train. Therefore the key to changing excitable and disobedient dogs into calmer, better-behaved pets is to reinforce calm, settled behavior rather than punishing what you don't.

First, avoid confinement when you are home since this does not allow you to intervene and show your dog the appropriate behavior. Confinement may be necessary when you are not available to supervise your dog, but he or she must first be provided with sufficient exercise, an opportunity to eliminate, appropriate play and affection, food or treats for desirable behavior (i.e. training) and never for undesirable behavior (barking, attention seeking). In short, quiet, calm, and non-demanding behaviors should be rewarded with play, affection and attention, while demanding, jumping-up, or excitable behaviors should be met with inattention. See our handouts on controlled walk, controlling chase, controlling jumping and door charging for help with specific problems.

Another common training error involves actually reinforcing the behaviors that you do not want. Instead of patting, giving attention, or perhaps even a treat to try and stop the behavior, it is essential that these behaviors be met with inattention.

Reprimands and punishment are also often unsuccessful. Some pets will actually consider punishment itself as a form of attention. On the other hand, punishment that is too harsh may lead to anxiety, fear of the owner and problems such as aggression or submissive urination. Disruption devices such as a shake can (small stones in a tin can), an air horn, or an ultrasonic device may interrupt the undesirable behavior without causing fear of the owner. However, if praise for ceasing the behavior and redirection toward a new and acceptable behavior does not occur the dog is unlikely to change all that much.

How should I start to regain control?

Retraining should begin with good control and a good understanding of the proper use, timing and selection of rewards. An obedience training class that uses rewards and non-disciplinary techniques for control (such as head halters) is a good start. The goal is to get the desired response, reward the desired response, and gradually shape longer and more successful responses. Clickers can be an excellent way to mark and reward success. The dog should be well exercised and as calm and focused as possible when training first begins. Insure that you are in an environment where there are minimal distractions and that you have enough control so that a successful response to the command can be guaranteed. Ask for our handout on 'Rewards - learning and reinforcement'.

What do I do if disobedience and unruliness persists?

Most traditional training techniques and devices use punishment to interrupt and deter misbehavior. Punishment may teach a dog what not to do but it does not teach the dog to perform the desired response. Many of the devices that have been designed to control and train dogs are attached around the dog's neck to "choke" or correct. Not only can they create discomfort for the dog, they require extremely good timing to teach the dog the proper behavior. Head halters might prove to be a more positive and effective means of achieving the desirable response. Clicker training can also be used as a means of immediately marking and reinforcing behavior. (See our handout on training and control products).

The head halter has been designed to gain control over the dog's head and muzzle so that the handler is able to train the dog to perform the desired response. The goal of training is to encourage and reward correct responses rather than punish incorrect responses. The head halter increases control in a number of ways. Since dogs have a natural instinct to pull against pressure, a forward and upward pull on the leash will close the mouth and the dog will pull backwards and down into a sit. Therefore, whenever the sit command is given and the dog does not immediately respond, the owner can pull the leash up and forward, look the dog in the eyes, and get the desired response. As soon as the dog is sitting or even begins to sit, the restraint is released and the dog praised. The command, pull, and release should be immediately repeated if the "problem behavior" is repeated, and positive reinforcement (treat, patting, play) should be provided if the dog continues to "behave". Using a leash and head halter, an upward and forward pull can be used to immediately and effectively control barking, jumping up, play biting, stealing objects, or pulling and lunging. The head halter also creates a situation "where the head follows, the body goes". See our handout on head halter training. Since the halter controls the head many behaviors can be prevented or interrupted merely by changing the direction of the dog. Lastly, and equally important, the head halter does not encircle and tighten around the lower neck, so that the dog is not choking while the owner is trying to train. See our additional handouts on stealing, going for a controlled walk, possessive aggression and chase behavior for other uses and training protocols with the head halter.

Some brands of head halters are designed so that they can be left on the dog, just like neck collars, all the time when owners are home. A long indoor lead can be left attached for control from a distance. As soon as the dog begins to engage in unacceptable behavior, it can be interrupted and directed into performing the desirable behavior ('sit', 'down', 'quiet'). By the

same token, if you give the dog a command and he does not obey, you can always get the compliance that you require if the halter and leash is attached.

Now that I have more control, what else do I need to do?

Often the key to turning an unruly dog into an acceptable pet is continuous control until you reliably can get the behaviors that you want. This is most easily accomplished by having the dog on a leash (attached to a body harness, non-choke neck collar or head halter). This allows you to immediately interrupt undesirable behavior and teach your dog the correct lesson. Once your dog no longer engages in the undesirable behavior, and responds to verbal commands, the leash should be removed. An integral component of controlling an unruly dog entails restructuring the situations so that the unruly behavior is not able to take place, or that interruption is immediate. This can take various forms such as keeping the dog on a leash so that it cannot run through the house, closing doors to other rooms, and limiting the access of the dog to areas where he is unsupervised. Only interact with the dog in a positive manner and set up situations so that the dog will do as the owner asks.

This brings up another vital issue in controlling excitable and disobedient dogs. Many owners are so frustrated that the only interaction that they have with the dog is negative. They have lost the joy of pet ownership. Worse than that, they do not reward the behaviors that they do want. It is more important to tell the dog when it is doing the correct behavior than it is to discipline the bad. It is also important to practice the training that you may ultimately need. An example of this is training the dog to 'sit' and 'stay' in the front hall. How will the dog know to 'sit' and not run out the door when people come to visit, (a highly excitable event), if the dog never practiced doing so when things were calm?

TEACH THE DOG WHAT YOU WANT IT TO KNOW BEFORE YOU NEED IT.

This client information sheet is based on material written by Debra Horwitz, DVM, Diplomate ACVB & Gary Landsberg, DVM, Diplomate ACVB

Crate Training

"Private room with a view. Ideal for traveling dogs or for those who just want a secure, quiet place to hang out at home."

That's how your dog might describe his crate. It's his own personal den where he can find comfort and solitude while you know he's safe and secure—and not shredding your house while you're out running errands.

Crating philosophy

Crate training uses a dog's natural instincts as a den animal. A wild dog's den is his home, a place to sleep, hide from danger, and raise a family. The crate becomes your dog's den, an ideal spot to snooze or take refuge during a thunderstorm.

The primary use for a crate is housetraining. Dogs don't like to soil their dens.

The crate can limit access to the rest of the house while he learns other rules, like not to chew on furniture.

Crates are a safe way to transport your dog in the car.

Crating caution!

A crate isn't a magical solution. If not used correctly, a dog can feel trapped and frustrated.

Never use the crate as a punishment. Your dog will come to fear it and refuse to enter it.

Don't leave your dog in the crate too long. A dog that's crated day and night doesn't get enough exercise or human interaction and can become depressed or anxious. You may have to change your schedule, hire a pet sitter, or take your dog to a doggie daycare facility to reduce the amount of time he must spend in his crate every day.

Puppies under six months of age shouldn't stay in a crate for more than three or four hours at a time. They can't control their bladders and bowels for that long. The same goes for adult dogs that are being housetrained. Physically, they can hold it, but they don't know they're supposed to.

Crate your dog only until you can trust him not to destroy the house. After that, it should be a place he goes voluntarily.

Selecting a crate

Several types of crates are available:

Plastic (often called "flight kennels")
Fabric on a collapsible, rigid frame
Collapsible, metal pens

Crates come in different sizes and can be purchased at most pet supply stores or pet supply catalogs.

Your dog's crate should be just large enough for him to stand up and turn around in. If your dog is still growing, choose a crate size that will accommodate his adult size. Block off the excess crate space so your dog can't eliminate at one end and retreat to the other. Your local animal shelter may rent out crates. By renting, you can trade up to the appropriate size for your puppy until he's reached his adult size, when you can invest in a permanent crate.

The crate training process

Crate training can take days or weeks, depending on your dog's age, temperament and past experiences. It's important to keep two things in mind while crate training:

The crate should always be associated with something pleasant.
Training should take place in a series of small steps. Don't go too fast.

Step 1: Introduce your dog to the crate

Place the crate in an area of your house where the family spends a lot of time, such as the family room. Put a soft blanket or towel in the crate. Take the door off and let the dog explore the crate at his leisure. Some dogs will be naturally curious and start sleeping in the crate right away. If yours isn't one of them:

Bring him over to the crate, and talk to him in a happy tone of voice. Make sure the crate door is open and secured so that it won't hit your dog and frighten him.

Encourage your dog to enter the crate by dropping some small food treats nearby, then just inside the door, and finally, all the way inside the crate. If he refuses to go all the way in at first, that's okay; don't force him to enter.

Continue tossing treats into the crate until your dog will walk calmly all the way into the crate to get the food. If he isn't interested in treats, try tossing a favorite toy in the crate. This step may take a few minutes or as long as several days.

Step 2: Feed your dog his meals in the crate

After introducing your dog to the crate, begin feeding him his regular meals near the crate. This will create a pleasant association with the crate.

If your dog is readily entering the crate when you begin Step 2, place the food dish all the way at the back of the crate.

If he remains reluctant to enter the crate, put the dish only as far inside as he will readily go without becoming fearful or anxious. Each time you feed him, place the dish a little further back in the crate.

Once your dog is standing comfortably in the crate to eat his meal, you can close the door while he's eating. The first time you do this, open the door as soon as he finishes his meal. With each successive feeding, leave the door closed a few minutes longer, until he's staying in the crate for ten minutes or so after eating.

If he begins to whine to be let out, you may have increased the length of time too quickly. Next time, try leaving him in the crate for a shorter time period. If he does whine or cry in the crate, don't let him out until he stops. Otherwise, he'll learn that the way to get out of the crate is to whine, so he'll keep doing it.

Step 3: Lengthen the crating periods

After your dog is eating his regular meals in the crate with no sign of fear or anxiety, you can confine him there for short time periods while you're home.

Call him over to the crate and give him a treat.

Give him a command to enter, such as "kennel." Encourage him by pointing to the inside of the crate with a treat in your hand.

After your dog enters the crate, praise him, give him the treat, and close the door.

Sit quietly near the crate for five to ten minutes, and then go into another room for a few minutes. Return, sit quietly again for a short time, and then let him out of the crate.

Repeat this process several times a day, gradually increasing the length of time you leave him in the crate and the length of time you're out of his sight.

Once your dog will stay quietly in the crate for about 30 minutes with you mostly out of sight, you can begin leaving him crated when you're gone for short time periods and/or letting him sleep there at night. This may take several days or several weeks.

Step 4, Part A: Crate your dog when you leave

After your dog can spend about 30 minutes in the crate without becoming anxious or afraid, you can begin leaving him crated for short periods when you leave the house.

Put him in the crate using your regular command and a treat. You might also want to leave him with a few safe toys in the crate.

Vary at what point in your "getting ready to leave" routine you put your dog in the crate. Although he shouldn't be crated for a long time before you leave, you can crate him anywhere from five to 20 minutes prior to leaving.

Don't make your departures emotional and prolonged—they should be matter-of-fact. Praise your dog briefly, give him a treat for entering the crate, and then leave quietly.

When you return home, don't reward your dog for excited behavior by responding to him in an excited, enthusiastic way. Keep arrivals low key to avoid increasing his anxiety over when you will return. Continue to crate your dog for short periods from time to time when you're home so he doesn't associate crating with being left alone.

Step 4, Part B: Crate your dog at night

Put your dog in the crate using your regular command and a treat. Initially, it may be a good idea to put the crate in your bedroom or nearby in a hallway, especially if you have a puppy. Puppies often need to go outside to eliminate during the night, and you'll want to be able to hear your puppy when he whines to be let outside.

Older dogs, too, should initially be kept nearby so they don't associate the crate with social isolation.

Once your dog is sleeping comfortably through the night with his crate near you, you can begin to gradually move it to the location you prefer, although time spent with your dog—even sleep time—is a chance to strengthen the bond between you and your pet.

Potential problems

Whining. If your dog whines or cries while in the crate at night, it may be difficult to decide whether he's whining to be let out of the crate, or whether he needs to be let outside to eliminate. If you've followed the training procedures outlined above, then your dog hasn't been rewarded for whining in the past by being released from his crate. If that is the case, try to ignore the whining. If your dog is just testing you, he'll probably stop whining soon. Yelling at him or pounding on the crate will only make things worse.

If the whining continues after you've ignored him for several minutes, use the phrase he associates with going outside to eliminate. If he responds and becomes excited, take him outside. This should be a trip with a purpose, not play time. If you're convinced that your dog doesn't need to eliminate, the best response is to ignore him until he stops whining. Don't give in; if you do, you'll teach your dog to whine loud and long to get what he wants. If you've progressed gradually through the training steps and haven't done too much too fast, you'll be less likely to encounter this problem. If the problem becomes unmanageable, you may need to start the crate training process over again.

Separation Anxiety. Attempting to use the crate as a remedy for separation anxiety won't solve the problem. A crate may prevent your dog from being destructive, but he may injure himself in an attempt to escape from the crate. Separation anxiety problems can only be resolved with counter-conditioning and desensitization procedures. You may want to consult a professional animal-behavior specialist for help.

May 19, 2010

How to Use a Head Halter

The Humane Society of the United States

"Whoa, Rover, whoa!" Sound familiar? If that's what it's like when you take your dog for a walk, you may want to consider getting a head halter.

What's a halter?

A head halter is a special kind of collar designed for dogs who like to pull their people when they walk. It consists of a strap that goes around your dog's nose and another strap that goes around his neck, just behind his ears. The leash fastens to the halter under the dog's chin to a ring that's also attached to the nose strap.

When your dog begins to pull, the design of the head halter causes the dog's nose to be turned down and back toward you, which makes it physically difficult for him to continue pulling.

The head halter is a very humane method of restraint because it doesn't cause any pain. It works much better to stop a dog from pulling than a choke chain or prong collar. Some brand names of head halters include "Gentle Leader," "Promise Collar," and "Halti." Buy one at Humane Domain, our online store »

How should it fit?

The head halter must be fitted properly to be effective and comfortable for your dog. The neck strap should be as high up on your dog's neck as you can get it, just behind his ears. The strap should be just tight enough for you to fit one finger between it and your dog's neck.

The nosepiece should be adjusted so that when your dog's mouth is closed, the nosepiece can slide down to where the skin begins on his nose—but not so loose that it can slide off the end of his nose. The nosepiece will sit naturally, just below your dog's eyes. Make sure that the metal ring to which the leash attaches is underneath his chin.

The head halter is a very humane method of restraint; It works much better to stop a dog from pulling than a choke chain or prong collar.

How will your dog react?

Most dogs will resist a head halter at first. The amount of resistance varies for each dog. When you first put the head halter on, your dog may try to get it off by pawing at his nose or rubbing his nose on the ground, on you, or on anything he can get close to. The best strategy is to keep his head up and keep him moving by using positive verbal reinforcement and treats.

Most dogs eventually accept head halters. When your dog associates the halter with going for a walk, he'll begin to react positively to it, and soon, both you and your dog will enjoy taking walks together!

Things to remember

Make sure the head halter is fitted properly.

Fit the halter so that it is snug around your dog's neck and high behind his ears, but loose enough around his nose so that the nose strap can slide easily down to the fleshy part of his nose.

Don't confuse the head halter with a muzzle.

Keep in mind that a dog wearing a head halter can still eat, drink, pant, bark, and bite, if he chooses.

Never use a hard jerk with the head halter.

Never use the head halter with a retractable lead.

Be sure your dog doesn't run quickly to the end of the lead; if he does, he may give himself a hard jerk.

Outfit your dog with the head halter only during on-leash walks with you and/or when you're directly supervising him.

Don't allow your dog to wear the head halter around the house; he'll have plenty of time to work at getting it off, and will eventually succeed.

Read the information sheet that comes with your head halter.

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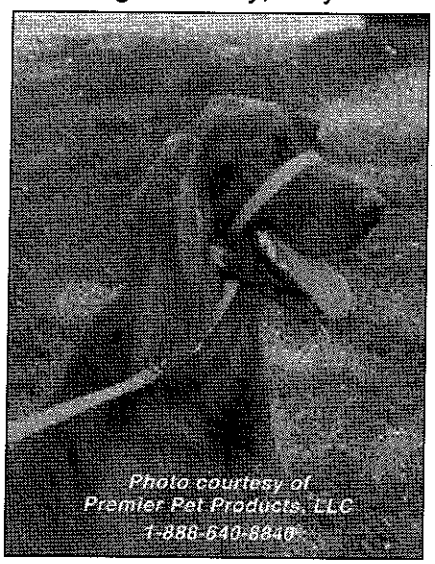
HEAD HALTER TRAINING AND USE

Why should I halter-train my dog?

Head halters are commonly used as an alternative to collars and have many advantages. Firstly, they make control easier, requiring less physical effort, so you don't end up battling with your pet or trying to save your shoulders from being pulled out of their sockets when going for a walk like you do when using a flat neck collar. The head collar has a strap that encircles the muzzle, and where the nose goes the body follows ('aka' power steering for dogs). Secondly, dogs pulling on neck collars can injure themselves as the collar presses into the trachea and neck. Dogs that pull may also be at greater risk of becoming aggressive to strangers or others whom they meet out on walks as they associate trying to approach with unpleasant experiences. Thirdly, some forms of head collars give you control over the dog's mouth, which may help reduce the risk of your dog biting. However, if you know your pet has an aggression problem, a muzzle may be more suitable (See muzzle training handout). For further details on how head halters compare to other training products see our handout "to choke or not to choke".



How do head halters work?

The head halter is an excellent aid for control and training. However, it is only a tool to help you achieve success. Some time and effort will be needed for your dog to adapt to wearing a head halter, and for you to insure that it is fitted and used correctly. Although it may be possible to use the head halter successfully with the aid of the support materials that accompany the head halter (along with this handout), additional guidance from a trainer who is familiar with head halter use may help to insure success.

Briefly, head halters work by applying pressure behind the neck and around the muzzle so that the pet can be prompted to display the desired response. At this point negative reinforcement (the release of tension on the leash) and positive reinforcement (rewards) can be given to let the pet know that it is now exhibiting the target behavior. When the pet responds consistently, verbal cues / commands can be added. Since pets tend to pull against pressure, a strategic but gentle pull in just the right direction may be all that is needed to get your pet moving in the opposite direction. For example, with a few inches of slack on the leash and the dog walking

with a head halter by the owner's side (or slightly behind), a pull forward should get the dog to back up (heel, follow). Pulling upward will close the mouth (barking, nipping) while a pull up and forward should back the dog into a sitting position. Slight modification to the head position can then be used to teach the dog to maintain eye contact (focus / watch). A pull from the side or behind can turn the head to achieve eye contact and direct the dog away from a stimulus. A gentle continuous pull rather than a jerk should be used to achieve the desired behavior. The second hand can be used under the chin, to help gently coax the pet into position. Once success is achieved, training should proceed to varied environments and slightly more complex tasks (e.g. teaching the dog to sit during greeting rather than jumping up).

The head halter can also serve as a tool to interrupt undesirable behavior and achieve the desirable response during training. For example, the head halter and leash can be used to prompt the dog to be quiet when barking, or to "stop" puppy mouthing. Similarly a pull on the leash can be used to immediately curtail pulling, barking, chewing, stealing, stool eating and some forms of aggression. With a long leash left attached, the head halter can also be used to interrupt behaviors from afar such as garbage raiding, housesoiling or digging.

Aren't halters irritating to dogs?

Halters themselves are not cruel, but like any collar they can cause irritation if a little time is not spent fitting the halter properly and training your animal to accept wearing it. If the guidelines below are followed, your pet should actually enjoy wearing the halter. The most common errors are to immediately think your dog will accept the new sensation on its face and allowing it to get the halter off.

How do I get my dog to feel comfortable wearing a head halter?

1. Show your dog the halter, let him sniff to investigate it and hold a treat through the open nose band so he voluntarily puts his nose through the ring. Repeat this procedure several times with the strap resting on the dog's nose for increasingly longer times before the treat is given. This starts to build a positive association with the muzzle loop.
2. With the Gentle Leader™ brand of head halter, the neck strap can be fitted separately from the nose band. Before proceeding to attaching the full halter, adjust the neck strap as with most other neck collars, but be sure to insure a snug fit (see fitting below).
3. Gradually expect more from your pet when you introduce the halter. Put the halter on and reward your dog with it on, and when you take it off. Slowly increase the time you leave it on and practice feeding treats with the halter on, but only when he is not pawing or rubbing at the collar. You may be able to keep your dog distracted by playing a game, giving treats or going for a short walk with the leash attached to the neck collar. Alternately you can leave the leash attached and use a gentle pull if your dog tries to paw at or pull off the head halter.
4. Next you can apply the head halter and lead, and leave the leash trailing. You should aim to work towards keeping your dog haltered for about five to ten minutes. Try to keep your dog distracted and playing and give rewards when he is not focusing on the head halter.

5. When you first begin to use the lead to control your dog, make sure your dog's attention is focused on you. You should be animated and talk to him continuously, with lots of verbal praise. This also serves as a distraction from the halter, which reduces the chances of him pawing at it. You can use a lure or target and many small tasty rewards to keep your dog focused and on task. Training can begin indoors, in your yard or on a short walk. Make sure you frequently change directions by applying gentle tension to the lead while keeping up the praise and treats. Alternatively you might play a game such as turning circles, in which your pet is encouraged to gently turn in one direction then the other. In this way your dog learns that you have control of the head with light pressure and verbal commands.
6. Never remove the halter when your pet is trying to remove it. He can be encouraged to leave it alone by a slight tug on a lead. When he relaxes, the halter can be removed. Consider whether you are expecting too much too soon. The important rule is to work at a rate that your pet can accept and cope with. This may mean that the whole program may take a few days rather than a few minutes.
7. In some cases a faster fitting technique may be preferred. First adjust and fit the neck strap and then take it off. Next, using treats or a favored toys a lure, distraction and reward, slip the nose strap over the nose and continue to distract the dog with the treats or toy while attaching the neck strap. Then, using a leash, favored food treats and plenty of praise, it may be possible to play with your dog or take him for a short walk while he gets accustomed to the head halter. By making the walk fun, keeping the pet distracted and using food rewards to mark the desirable response, many pets will adapt to the head halter by the end of the first training session.

How do I fit and use the head halter?

The keys to head halter success are to insure proper fitting, to understand how to apply and release pressure in training, and the proper use of rewards. Here is a brief overview for fitting and use of the Gentle Leader™

Ensure proper fit. The head halter should fit high against the back of the skull and snug enough that it will not slip around the neck when the leash is pulled. By insuring a snug fit of the neck strap, the nose band can be adjusted so that there is little or no constriction. When first applying the head halter, it can be helpful to first ensure that the neck strap is properly adjusted, and then remove the neck collar. Next, offer food treats through the nose loop and when the dog extends its nose through the loop, give the treats to reward and distract the dog while attaching the neck strap.

Get the desired response. By constantly maintaining a few inches of slack on the leash, only a short gentle pull should be needed to get the desired response. A pull up and forward can achieve eye contact (for target training, control and safety), close the mouth, and get the dog to heel, sit or focus. As soon as the desired response can be consistently achieved, a cue word (command) can then be added.

Motivate. An encouraging calm voice, targeting, and appealing eye contact should be used to help motivate the pet to respond. Positive reinforcement is then given when the dog responds appropriately.

Command training. If the owner gives a command and the dog does not immediately respond, the head halter is pulled immediately and gently (but firm enough to succeed) to achieve the desired response (sit, heel, quiet). The owner then releases tension as soon as the desired response is achieved. If the desired response is maintained, a reward is given immediately (e.g. food, clicker, toy, praise, stroking) to mark the correct response so that future success is ultimately driven by rewards.

Pull – release – reward. By pulling on the head halter, the desired behavior can be quickly achieved and the pressure released when the response has been achieved. As the owner releases (by letting out a small amount of slack), the dog may then continue to exhibit the desired response (for which a reward should be given) or may begin to resume the undesirable response (e.g. tries to stand, lunge ahead, bark), in which case the pull (tension) should be reapplied. In some cases it may take numerous repetitions of the pull and release to get the desired response but the total time to achieve success might not be much more than a few seconds. By releasing only a small amount of slack, it will require only a slight pull to regain control.

How do I use the head halter to treat behavior problems?

Once the head halter is fitted properly and can be used successfully to achieve a relaxed sit and heel in the absence of any distractions, the owner can proceed to more complex tasks and more difficult environments.

To achieve a relaxed sit and focus: The dog can be taught to sit and stay for gradually longer periods of time before the reward is given. The leash should be relaxed with a few inches of slack, but if the dog begins to rise or break focus a gentle pull up and forward should be used to maintain the sit. For most problems, training should then proceed to greater degrees of relaxation, by watching the dog's body postures and breathing, and reinforcing only when sufficiently relaxed. The owner can then begin to move away from the dog (still maintaining only an inch or two of slack) to train the dog to stay and not to follow or lunge forward.

To teach a relaxed down, the dog is reinforced for lying in place with a short amount of slack on the leash, and reinforced for gradually longer down times. If the dog begins to rise during the session the leash is used to maintain the down position. Rewards are given and the dog released to rise at the end of each session. As with sit / focus, the goal is to reinforce gradually longer and increasingly more relaxed sessions of down time. Relaxation can be observed by monitoring breathing and body postures (e.g. lying over onto one hip).

Another useful command is to teach the dog to go to its mat or bed and stay in place until released. Again progressively longer and more relaxed behavior should be reinforced before release.

Once the dog will settle and relax in a sit, down, or on its bed, these commands can be used as part of a program to improve undesirable behavior. Since the goal of retraining is to teach the dog the desired response, rather than to punish undesirable behavior, the commands and head halter can be used to help achieve success. For

example the dog can be trained to sit and focus or to lie down calmly when visitors come to the front door and be reinforced for proper greeting behavior.

Similarly if the dog is trained with a head halter and rewards to walk with a slack leash by the owner's side (heel), then the heel exercise (or sit and focus) and the head halter can be used to keep the dog calm and under control in environments where it might lunge or jump up during a walk.

For specific applications and problems see our other handouts.

This client information sheet is based on material written by Debra Horwitz, DVM, Diplomate ACVB & Gary Landsberg, DVM, Diplomate ACVB

Fairleigh Pet Center
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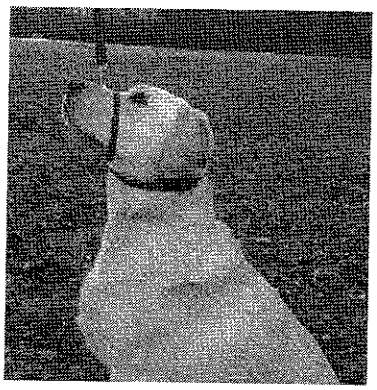
CANINE: CONTROLLING JUMPING UP AND DOOR CHARGING

My dog charges the door whenever someone knocks or rings the bell, what can I do?

Door charging and uncontrollable excitement when visitors arrive is extremely disconcerting and potentially dangerous. Without proper control of your dog he could charge out the door and into the street where he might get injured. If this behavior is also accompanied by aggressive responses such as aggressive barking, growling, snarling, lunging, snapping or biting you should seek the guidance of a veterinary behaviorist since this presents risks to those who enter your home. With or without aggressive responses, until you can change the dog's behavior he must be securely confined before you answer the door. This could be in another room, behind an inescapable barricade or closed door, in a crate or by an adult holding the dog on a leash (preferably with a head halter for additional control).

To deal with door charging without aggression start by teaching the dog to 'sit' and 'stay' for a food reward in the entry area. If the dog cannot sit and settle at the door without distractions, you should not expect to be able to control the dog when the door is opened or when visitors arrive? Training is likely to be most successful and most effective if you utilize a head collar and leash. It may help to use a mat or rug to designate the proper place for the dog to relax and settle for training. As the dog learns to a relaxed sit or down-stay or settle on a mat (see our handout on settle exercises) you should be able to walk to the door, touch the doorknob or even open the door without the dog moving. If the reward is sufficiently motivating the dog should soon look forward to staying in place each time you practice approaching and opening the door. Gradually phase out food treats when the behavior is learned and can be reliably repeated. If barking is a big part of the problem you also should work on controlling barking by using our handout on barking in dogs.

Each time you leave the house, also be certain to practice training calm doorway behaviors. If you are taking your dog for a walk, teach him to sit and settle before leaving the house and have him follow you on a controlled walk as you leave. If your dog is staying home when you leave and he begins to get excited or anxious, teach him to lie quietly on his bed or mat, and reward this with a stuffed food toy or special chew, before walking out the door.



Next you may need to practice getting the desired response with people entering the home. Begin with family members. First have them enter while the door is open so they can be seen. Next have them ring the bell while the door is open and then enter. Finally try with the door closed. Each time, get the dog to sit and stay or a settled down. Also practice proper greeting behaviors by having your dog sit quietly (or even give a paw) before the special treat or petting is given. Again a head halter can help to ensure that the desired

behavior is achieved before rewards are given. By closing the door, then re-entering and greeting multiple times in the same session, your dog's excitement level should gradually decrease, making it progressively easier to accomplish a proper greeting. Another option is to have the dog stay on its mat as you open the door and enter, and then bring the dog in a controlled walk out where it should be taught to greet by sitting quietly for a treat and petting. Once your dog has mastered arrivals and greetings with family members, proceed to other friends and family members with whom your dog is familiar. Use a leash and head halter to ensure the right behavioral response (sit / down / mat) is achieved, and give favored food rewards to ensure a positive outcome. Always require your dog to 'sit' before it gets petted and you can go along way to eliminating jumping behavior.

How can I prevent my dog from jumping up on others and me?

For many dogs, jumping up on people is part of their greeting routine. Often, owners have tried to discourage this behavior using methods such as squeezing the front feet, stepping on the dog's toes, or kneeing the dog in the chest. Yet the behavior continues. For some dogs these techniques provide an uncomfortable but acceptable form of attention. For others, the technique leads to increasing anxiety as people arrive at the door, and conflict behaviors such as circling or urine leaking can develop since the pet is motivated to greet as well as avoid. Therefore in both cases the problem is gradually being further aggravated. If that is the case with your dog, then it is important to think about what might be motivating the dog to jump up and what is the reinforcement for the behavior continuing, and to avoid exposure until you can gain sufficient control with verbal commands, head halter training or both.

Usually the motivation for the jumping up behavior is to greet people. Many dogs like to greet "face to face", like they do with their canine counterparts. Some people, however, find this objectionable. Dogs that jump up can also cause injury or scare the visitor. The visitor's reaction to the dog (whether it be fear or retaliation) would then serve to make the dog anxious about further visitors coming to the home. In addition, strong punitive responses when people enter the home can create anxiety and could make the dog aggressive as he anticipates that people entering the home create an aversive situation for him. Correction therefore must not be directed at punishing the problem, but rather at finding a means of teaching the dog an appropriate greeting behavior. This usually is a sit/stay, which can then be rewarded with food and attention. Once the dog has perfected this at the doorway, when there are no people coming or going, its time to begin practicing with family members, before progressing to familiar visitors and then to greeting new people arriving at the home. Make the dog sit and stay when people arrive and give the dog the special training treat. If the dog gets up, then put him back in the sit and try again until the dog remains sitting through the arrival. Often placing a "treat jar" by the front door with a bell on it will help. Once the dog associates the bell on the jar with a treat, and a treat with a sit/stay, the dog will be more likely to perform the task.

Another way to train this behavior, if you feel that you have sufficient control, is to set up visitors to come to your home. You will likely have the best control of your dog if you use a head collar and a leash for this exercise. Have the first person come to the door. Instruct your dog to 'sit' and 'stay'. Then, let the visitor in. Hopefully, with some effort, you will get your dog to continue to sit. Have the person enter, give a treat and sit down. After five minutes, have them leave by the back door, come to the front and enter again. This second entry should go easier as your dog will have just seen the person. If you can repeat this 4-6 times for each visitor, the dog will have plenty of opportunity to learn the new task.

Once you understand the motivation, and have trained a new task, you need to be sure you have identified all the reinforcement for the behavior. If the dog succeeds in getting any attention for the jumping behavior, then the dog will continue to jump. Attention includes petting, pushing away, (which resembles play behavior), and even mild reprimands, all of which can be reinforcing for a dog that really wants attention. To change this behavior you need to remove ALL reinforcement. This may mean that you do not look, speak, touch or interact with the dog IN ANY WAY when it jumps on you. Walk by the dog, give a command such as 'sit', but do not interact with the dog. Alternately, you could try a disruptive stimulus to see if you can disrupt the behavior just as it begins.

To use disruption for jumping up, you need to be able to QUICKLY AND HUMANELY interrupt the behavior. This is often best done with some type of device that makes a loud noise. Shaker cans, ultrasonic trainers, rape alarms, and air horns, all make loud noises that will often startle the dog. As soon as the dog hesitates, you need to give the dog an alternative command so that the dog can do the proper thing, and then reward the dog with praise. So, as you administer the noise, you say "SIT" and when the dog sits you reward it with praise and food treats if available. Many dogs soon learn that, to avoid the noise, they need to sit and will do so to greet you. Then have the person leave, and re-enter the home. Use the device and command if the dog does not immediately sit, and a "good sit" and reward as soon as the dog does sit. Continue to have the person leave and re-enter until the dog sits for its reward without hesitating. Another efficient but costly means of immediate interruption is to use a citronella spray collar. Bark activated collars are useful if the dog also barks as people arrive at the door. Alternately a remote collar can be used to interrupt the jumping and reinforce the desirable response (e.g. sitting).

Another method that is consistently successful at deterring and preventing the jumping up is to leave a leash and head halter on the dog during greeting. All it takes is stepping on the leash or a quick sharp pull to prevent or disrupt the jumping up. Again, be certain to reward non-jumping behavior.

Some people like to allow the dog to jump up on them at certain times. You must never allow the dog to choose the time or the dog will continue to do this behavior whenever it is in the mood, and could learn to greet all people in the same uncontrolled manner. Therefore, if you enjoy this type of greeting first teach your dog to settle and relax for greetings and then teach your dog a command "give me a hug" or "come up here". This way, you have the behavior under verbal control and you decide when the dog will be allowed to jump up.

This client information sheet is based on material written by Debra Horwitz, DVM, Diplomate ACVB & Gary Landsberg, DVM, Diplomate ACVB

November 3, 2009

Chewing: The Whys and Hows of Stopping a Gnawing Problem

The Humane Society of the United States

Sooner or later every dog lover returns home to find some unexpected damage inflicted by his or her dog; or, more specifically, that dog's teeth. Although dogs make great use of their vision and sense of smell to explore the world, one of their favorite ways to take in new information is to put their mouths to work.

Fortunately, chewing can be directed onto appropriate items so your dog isn't destroying things you value or jeopardizing his own safety. Until he's learned what he can and can't chew, however, it's your responsibility to manage the situation as much as possible, so he doesn't have the opportunity to chew on unacceptable objects.

Why dogs chew

Puppies, like infants and toddlers, explore their world by putting objects in their mouths. And, like babies, they teethe for about 6 months, which usually creates some discomfort. Chewing not only facilitates teething, but also makes sore gums feel better.

Adult dogs may engage in destructive chewing for any number of reasons. In order to deal with the behavior, you must first determine why your dog is chewing—and remember, he's not doing it to spite you. Possible reasons for destructive chewing include:

- As a puppy, he wasn't taught what to chew and what not to chew.
- He's bored.
- He suffers from separation anxiety.
- His behavior is fear-related.
- He wants attention.

Important! You may need to consult a behavior professional for help with both separation anxiety and fear-related behaviors.

Manage the situation

Take responsibility for your own belongings. If you don't want it in your dog's mouth, don't make it available. Keep clothing, shoes, books, trash, eyeglasses, and remote control devices out of your dog's reach.

Give your dog toys that are clearly distinguishable from household goods. Don't confuse him by offering shoes and socks as toys and then expecting him to distinguish between his shoe and yours. More about dog toys »

Supervise your dog until he learns the house rules. Keep him with you on his leash in the house so he can't make a mistake out of your sight. Confine him when you're unable to keep an eye on him. Choose a "safe place" that's dog-proof, and provide fresh water and "safe" toys. If your dog is crate trained, you may also place him in his crate for short periods of time.

Give your dog plenty of people-time. Your dog won't know how to behave if you don't teach him alternatives to inappropriate behavior, and he can't learn these when he's in the yard by himself.

Give your dog plenty of physical and mental exercise. If your dog is bored, he'll find something to do to amuse himself and you probably won't like the choices he makes. On the other hand, a tired dog is a good dog, so make sure he gets lots of physical and mental activity. The amount of exercise should be based on his age, health, and breed characteristics.

If you catch your dog chewing on something he shouldn't, interrupt the behavior with a loud noise. Offer him an acceptable chew toy instead, and praise him lavishly when he takes the toy in his mouth.

Build a toy obsession in your dog. Use his toys to feed him. At mealtimes, fill a Kong-type toy with his kibble.

If your puppy is teething, try freezing a wet washcloth for him to chew on. The cold cloth will sooth his gums. Supervise your puppy so he doesn't chew up and swallow any pieces of the washcloth.

Make items unpleasant to your dog. Furniture and other items can be coated with a taste deterrent (such as Bitter Apple®) to make them unappealing.

Caution! Supervise your dog when you first try one of these deterrents. Some dogs will chew an object even if it's coated with a taste deterrent. Also be aware that you must reapply some of these deterrents to maintain their effectiveness.

Offer your dog a treat in exchange for the item in his mouth. As your dog catches on to this idea, you can add the command "Give" as his cue to release the object in exchange for the yummy treat.

Don't chase your dog if he grabs an object and runs. If you chase him, you are only giving your dog what he wants. Being chased by his human is fun! Instead call him to you or offer him a treat.

Have realistic expectations. At some point your dog will inevitably chew up something you value; this is often part of the transition to a new home. Your dog needs time to learn the house rules and you need to remember to take precautions and keep things out of his reach.

What not to do

Never discipline or punish your dog after the fact. If you discover a chewed item even minutes after he's chewed it, you're too late.

Animals associate punishment with what they're doing at the time they're being corrected. Your dog can't reason that, "I tore up those shoes an hour ago and that's why I'm being scolded now." Some people believe this is what a dog is thinking because he runs and hides or because he "looks guilty."

In reality, "guilty looks" are actually canine submissive postures that dogs show when they're threatened. When you're angry and upset, your dog feels threatened by your tone of voice, body postures, and/or facial expressions, so he may hide or show submissive postures. Punishment after the fact will not only fail to eliminate the undesirable behavior, but could provoke other undesirable behaviors as well.

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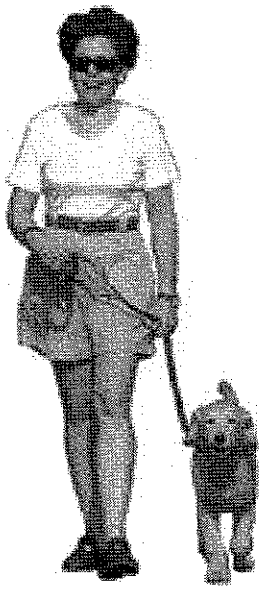
PLAY AND EXERCISE IN DOGS

Why are play and exercise important?

Play with owners and with other dogs provides your dog, not only with an outlet for physical exercise, but also helps to fill your dog's social needs. Insufficient exercise can contribute to problem behaviors including destructiveness (chewing and digging), investigative behavior (garbage raiding), hyperactivity, unruliness, excitability, attention-getting behaviors, and even some forms of barking. It is especially important to ensure that a dog's need for exercise and social interaction have been met prior to leaving the dog alone at home and prior to lengthy crating or confinement sessions.



What are good ways to play with and exercise my puppy or dog?

Taking your dog for a walk is good exercise and can be enjoyable and healthy for you as well. From an early age you should accustom your puppy to a collar and leash. A flat nylon or leather collar or a leash and body harness usually works well. Keep your puppy away from stray dogs and neighborhood parks until all booster vaccinations are given. However, since socialization at this age is very important, insure as much play and exercise with healthy, vaccinated dogs as possible. A puppy class might be a good place to meet and play with other puppies as well as their owners. Practice walking skills in your own yard first. Put your puppy on a leash and, with your voice and a small tug, or perhaps a food or toy reward as a prompt, encourage it to follow you. Reward the good behavior with praise. Keep initial walks short to encourage compliance. For dogs that are difficult to walk see our handouts on 'settle' and 'going for a controlled walk'. For adult dogs that pull excessively, a head halter or a no-pull harness may help settle the dog and make walks more pleasant. Keep in mind that the walk does not have to be long. In fact, a short 10-15 minute "sniff' walk can be very enjoyable for your dog. Even on longer walks you can alternate periods of controlled walking at a heel with periods where the dog can explore and sniff the environment. Putting these sniffing and exploration times on a release command such as "OK", helps the dog to understand that the controlled walk is to be maintained until the release command is given. Dogs find the scents in the environment stimulating and interesting and a good "sniff" walk can enrich your dog's day.

Playing with your pet is an enjoyable activity for both of you. Not only does your dog get exercise, but also positive interactions take place. Training sessions can also be part of each play session so that you can gain further control, while providing social interaction between you and your pet. Many dogs also enjoy learning new tricks such as jumping through a hoop, shake, play dead and more.

How much exercise and play is appropriate?

Selecting an appropriate amount and type of play and exercise will depend on the type of dog. Puppies and even adult dogs from breeds that have been bred for their stamina or to do "work" often have higher exercise requirements. For purebred dogs, consider their traditional work and the normal amount of energy that would expend when deciding the type and amount of play to provide. For example, the retrieving breeds do best with lengthy games of fetch or "Frisbee", while the sledding breeds might prefer pulling carts, or running or jogging with an active owner. Terriers may prefer sniffing and catching "prey", while herding breeds might be suited to focused training and agility.

The length and type of play and exercise for your dog will depend on its behavioral requirements and health limitations. While some dogs may still be ready for more after a five-mile jog and a game of fetch, others may be tired and satisfied after a short walk around the block. The idea is to enrich the quality of life for your dog and yourself, not to create a canine athlete.

How can I keep my dog occupied when I am away?

When you are out, or you are busy at home with other activities and responsibilities, it would be ideal for your dog to be relaxed and sleeping, but this will not always be the case. Exploring the environment, stealing food items, raiding garbage cans, chewing or digging, are just a few of the ways that dogs will find to keep themselves occupied. (See our handouts on stealing, possessive aggression for additional information) When you are confident that you have provided your dog with sufficient play and interactive exercise, and you must leave your dog alone, provide sufficient toys and distractions to keep your dog occupied and confine your pet to a safe, dog-proofed area. Pets might be kept occupied and stimulated when you are not available to supervise with chew toys, many of which can aid dental health. These products might either be edible such as rawhide, pig ears, hooves, or dental treats, or inedible chew and dental toys made from rubber, rope or nylon. There are also a wide variety of manipulation toys that can be stuffed with food or treats. Some release food during chewing; some dispense food when rolled along the floor; others can be stuffed or coated with dog food, cheese, liver, or peanut butter. (See our handout on 'Destructiveness chewing'). Dogs that are housed outdoors might prefer an opportunity to dig (see our handout on destructive digging). Some dogs enjoy watching pet videos and some do best when housed with another dog for play and companionship, although this can result in rowdy activity in your absence.

It may also help to keep the dog away from windows where the dog might engage in territorial displays as people and cars pass by the house. Dogs should not be left outside while you are not home. Not only is your dog subjected to the elements (heat, cold, rain, snow) but also your dog could escape and be lost or injured. In addition they may engage in inappropriate barking and territorial behaviors that have the potential to develop into problem behavior without the benefit of owner direction and control.

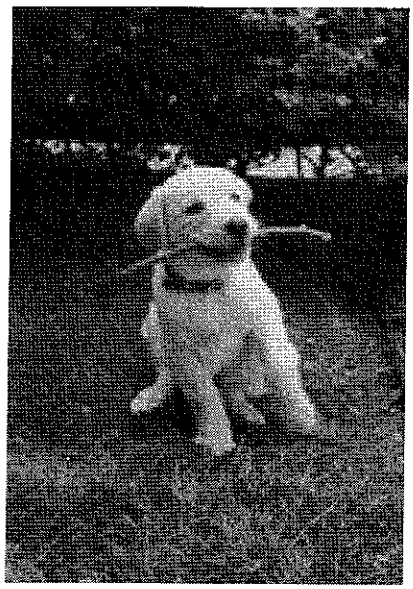
What type of games can I play with my dog?

Playing with your dog not only provides an opportunity for exercise and positive social interactions, but it can also be a fun way to train, since each time you give your dog a treat or toy or each time he fetches and retrieves, you can practice a training command such as "come", "sit", "fetch", "get it", "drop it" or "stay". A variety of types of interactive toys are available for throwing, retrieving and kicking, such as flying disks, balls and rubber hockey pucks. These types of toys are generally not designed to be chew toys, but they are used for games of fetch, teaching retrieval skills, and as training rewards. Other games that you might play with your

dog include a) hide and seek, where one family member goes off and hides and the puppy is then called to "come" and gets a treat and praise when he finds the person b) search games where you set out small bags, boxes or bowls with a favored treat or favored toy inside and have your dog search for these c) follow the leader where you step away from your puppy and call him to "come" to get a treat. Then run away and say "come" and reward with a treat before running off again d) "drop" or "give" which is an exercise that helps to teach your puppy to give up toys for something even more valuable. Giving your puppy a toy and then offering it something even more appealing might do this. Use the word "give" or "drop" and have your puppy drop the toy in your hand; then trade for the other toy or treat (also see our handout on canine stealing and teaching give). This can also be practiced during tug and fetch games in which case you can give a treat or return to the tug and fetch games as a reward e) get it where you teach your puppy to pick up items off the floor by tossing very small treats and saying "get it". Continue by tossing small treats in different directions. Next toss a favored play toy and when the puppy picks it up give a treat.

What type of play should be avoided?

Try to avoid games that pit your strength against your puppy or dog. Tug-of-war games seem to be an enjoyable diversion for many puppies and dogs and they do help to direct chewing and biting toward an acceptable play object, rather than an owner's hands or clothing. On the other hand, some pets get very excited, overly stimulated and become far too aggressive during tug-of-war games. A general rule of thumb for tug-of-war (or any other game for that matter) is to avoid it, unless you are the one to initiate the game, and can stop it as soon as the need arises. Don't allow your puppy to demand or initiate tug games since this could escalate to pulling on your or your clothing or stealing towels or clothing items to try and get you to play. You should always schedule and initiate these games. Teaching the dog to "drop" on command before beginning the tug games can help to ensure that you remain in control of object play sessions such as fetch and tug-of-war. Tug toys may be made of rope, nylon, or fleece. Once you have good control of the game you can schedule regular tug games as a play exercises. However, this is not a good game for children or for family members that do not have the necessary level of control. If teeth come in contact with hands, if aggression escalates beyond play, or the dog is unwilling to give up the tug toy, the game must end immediately.



Although games like chase are good exercise, they can often result in wild exuberant play that gets out of control. Similarly games of fetch can be both a great game and learning experience, but only if your dog learns to bring back and drop the toy so that the game can continue. Again, a good rule of thumb is to only play these games if you are the one to initiate the game, and are capable of stopping the game immediately should it get out of control. If you play a game in which the dog gets too excited, begins to nip or won't settle down, then you should first practice your sit, down and go to your mat training exercises so these can be used to settle the dog at the end of each game (See our handout on settle exercises).

How can I teach my puppy to play fetch?

Most young puppies, even those that do not have an inherent instinct to retrieve, can be taught how to play fetch from an early age. You will need to train your puppy to do three things; go get

the toy, bring it back, and relinquish it to you so that you can throw it again. First, make the toy enticing. Try a squeaky toy or a ball. Get your puppy's attention, toss the toy a short distance, 1-2 feet, and encourage your puppy to go to it. When it gets there give it praise. If your puppy picks up the toy in its' mouth, say 'good dog', then, move backwards a short way, clap your hands and entice your puppy to come towards you. All the while you should be encouraging verbally with a happy tone of voice and lots of praise. When your puppy returns to you, say 'give it' or 'release' and show another toy or even a small food treat. Most puppies will gladly give the toy to get the new toy or treat and at the same time will quickly learn the 'give' or 'release' command. Then, by repeating the entire sequence of events again, the game of fetch itself should soon be enough of a reward that food and toys will no longer be necessary to entice the puppy to give the toy. At the end of each fetch play session, have the puppy return the toy and give a toy or chew treat for the puppy to play with as a final reward for releasing the toy.

For older dogs that like to play their version of fetch, which is get the toy but not return it, playing fetch using two toys can often keep the game going. Throw one toy and as the dog returns to you, show him the other toy while saying, "drop it". Most dogs will drop the toy they have to get the one you have, at which point you can praise the dog and throw the other toy. Over time, many dogs will learn the "drop it" command and the need for two toys may diminish.

Sometimes when there is more than one dog in the home playing games, especially fetch, creates problems as both dogs rush toward the object. This can be avoided either by playing with one dog at a time or throwing two objects in opposite directions.

This client information sheet is based on material written by Debra Horwitz, DVM, Diplomate ACVB & Gary Landsberg, DVM, Diplomate ACVB

Fairleigh Pet Center
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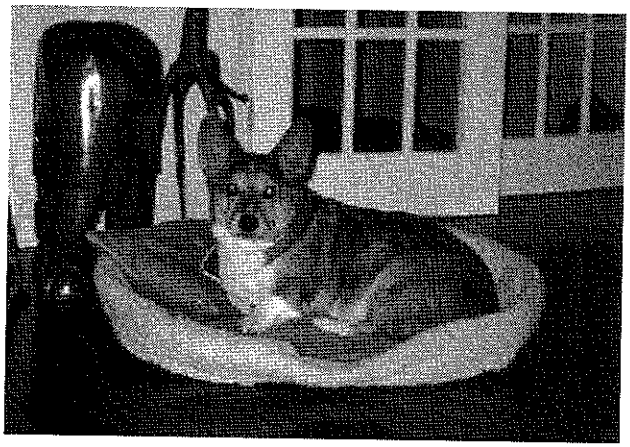
TRAINING A DOG TO SETTLE OR RELAX

Why should I teach my dog to settle?

Many behavior problems have a component of fear, anxiety or excessive arousal so that retraining cannot begin until a calm, relaxed state can be achieved on cue. Training should focus on both the behavioral response (sit, down, walk, stay on your mat) as well s the emotional state (calm, relaxed). In fact, until you can get your pet to focus and relax on cue in the absence of the stimuli that evoke anxiety or arousal, it is not practical to attempt to get your pet to relax in the presence of these stimuli.



Once the dog has learned to settle on cue, it should be possible to begin exposure to gradually more intense stimuli (desensitization). The settle command could be used to achieve a focused response when the dog is overly excited or anxious such as when greeting family members, strangers or other animals. It can also be used when dogs become anxious as the owners prepare to depart or become overly excited when company arrives or when preparing for a walk.

How does settle training work?

Training your dog to respond to a verbal cue or command, or when it sees a visual cue, might be described as cue-response-reward or command-response-reward training. Generally the sequence is: to find a means of insuring that the pet will immediately and consistently exhibit the desired behavior, to reinforce the behavior, and then to add a cue prior to the behavior. Some of the behaviors that can be useful to place on command, especially for pets with behavior problems, are sit, down, heel, and go to your mat.

A good place to start is with a new set of cues that help both the pet and you to understand what behavior is desired. Rather than "sit", a "watch", "steady", "focus" or "chill" command might be used. Similarly, instead of "down" a "relax", "settle", or "SOFT" command might be considered (See our handout on SOFT exercises), while "follow" or "heel" should be used for a calm, loose leash walk, and "go to your mat" should mean go settle down in your bed.

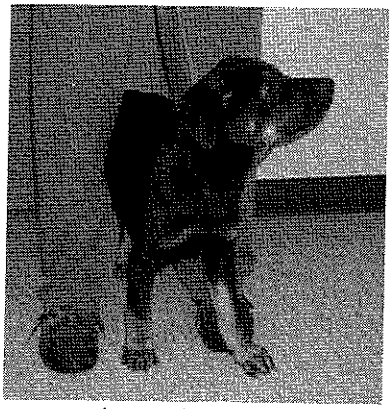
Training a dog to settle and focus should begin in an environment where your dog is calm and there are minimal or no distractions. Although the sequence for training is to a) give the command, b) get the desired response (using one of the techniques described below), and c) give clear and immediate reinforcement, training cannot begin until you have a means by which the target behavior can be reliably and consistently achieved.

How do I get started?

There are a variety of different methods by which the initial response can be achieved. In most cases food, a toy, or a visual target (which has been associated with favored food treats) can be used to lure the pet into the desired response. Alternately a physical device such as a leash and head halter can be used to physically prompt the dog to display the target behavior, along with immediate relaxation of tension as soon as the desired response is exhibited. (See our head halter handout). Another option is reinforce the desired behavior when it is exhibited spontaneously and then to add a cue word just prior to the response (this technique is often used when training a pet to eliminate on cue). A SOFT relaxation exercise (See our handout) and TTouch (See our handout) can also be used to achieve a relaxed response. Food, affection, a favored toy or a clicker (See our clicker training handout) can all serve as rewards if they are consistently given immediately following the behavior. These rewards should be withheld except for training (See our handout on learn to earn). Over time, the behavior can be gradually shaped for greater relaxation or longer duration.

How do I achieve a relaxed state?

Once the desired response is achieved, the goal of settle and relax training is to shape gradually more settled and relaxed responses. This can be accomplished by saving favored rewards exclusively for training and immediately reinforcing the pet for the desired response. With each subsequent training session, response of gradually longer duration and of gradually increasing relaxation should be reinforced. You will need to focus on facial expressions, body postures and breathing in order to determine the pet's level of relaxation, before giving rewards and proceeding to gradually more successful outcomes. Clicker training can be particularly effective for marking and reinforcing gradually more desirable increments of behavior. A leash and head halter can be used to insure success before release and reward. In order to achieve and maintain a calm response, the person doing the training must remain calm, relaxed and soft-spoken, and environment must be free of distractions. Remember, while you might be teaching the pet to sit/stay or down/stay, what you really want to emphasize is a relaxed emotional state.



How do I train these behaviors?

Teaching Steady / Maintaining a Loose Leash

- While you are standing still, give the puppy three to four feet of the leash. If the leash remains loose, say "steady", and occasionally give the puppy a food or social reward (positive reinforcement).
- When the puppy starts to walk away, the "steady" command is given and if the puppy remains at loose leash, then reward the behavior. If the puppy gets to the end of the leash and starts to tug and pull against the leash, a steady command is given, immediately followed by a slight tug on the leash by the owner to get the puppy's attention and stop it. Then, slack is returned to the leash.
- Upon compliance (loose leash) immediately give a food or social reward.
- After several repetitions, the puppy learns that it is rewarded for keeping the leash loose and that the word "steady" means "move to a relaxed leash position".

Practice a couple of times a day in the home with few distractions. As the puppy gets better, gradually add distractions and start working outside while maintaining a loose leash. Rewards should be given for maintaining a loose leash when walking by your side.

The steady command can then be used to stop tugging and pulling on leash while walking and to achieve a settled and controlled heel.

Teaching "Look", "Watch me" or "Focus"

- Show your dog a favored toy or treat and then hide it behind your back. Have your back against the wall or be in a corner so the dog can't get behind you. An alternative method is to hide the treat in your closed hand in front of your chest in a line between your dog's eyes and your eyes. On the first attempt it would be acceptable to show the puppy the toy or treat.
- Say "look" or "focus" and as soon as your dog stops its attempt to get the treat and makes eye contact, use your reward or clicker and give the treat. Repeat to improve consistency and immediacy. It may be necessary to guide the dog by using your hand and bringing it up to your eyes. As the dog follows your hand, give the key word and reward eye contact.
- For some owners it might be more practical and desirable to reward the behavior only when the dog is in the sitting position.
- Gradually increase the amount of time you require eye contact to last and then start adding distractions in the background, like people playing, a fridge door opening, etc. Your dog ONLY gets rewarded after maintaining (e.g. not breaking) eye contact with you. Once the dog is consistent in giving the correct response even when there are distractions, go to other places (outside) and add mild distractions, such as another dog nearby or children playing. After each successful session gradually increase the distractions and work in busier environments.
- The goal is for your dog to maintain eye contact on cue with the key phrase for several minutes, regardless of the amount of distraction and background activity.
- Progress gradually to longer duration and increased relaxation before rewards are given (see below).

Teaching "Settle" in a down position

- Another exercise would be train the dog to lie down in a relaxed position, on its belly with both hind legs on the same side. This could be accomplished using food lure training, leash and head halter or a physical exercise such as SOFT (see our handout).
- Gradually progress to longer down stays in a variety of environments and then gradually increase the background noise and distractions.
- Progress gradually to longer duration and increased relaxation before rewards are given (see below).
- It may also be useful to teach "Settle" in a sit position for training while on walks

Teaching a settle location – e.g. go to your bed:

- Training the dog to settle indoors can sometimes be more easily accomplished by using a settle down area. The dog can be taught to "go to your mat or bed" or "go to your kennel" **where** it learns to stay calmly for favored rewards.
- Food lure training or target training can be used to achieve the initial response.
- Progress gradually to longer duration and increased relaxation before rewards are given (see below).

- At first, the owner may need to leave a leash attached so that the dog can be physically prompted (taken) to the bed or mat, to insure success and to demonstrate to the pet what behavior will result in a reward. Again, giving rewards at other times will delay learning (learn to earn).
- If the dog is also taught to sleep in this area and favored toys are kept in the area (and if a favored treat or social interaction is given when the pet voluntarily uses the area), it may soon learn to go to this area to relax on its own.

What other devices or techniques can be used to help me get my dog to relax on cue?

a) The head halter is an extremely effective tool for quickly and reliably achieving the initial behavior and for progressing rapidly to responses of longer duration and greater levels of relaxation. A pull on the leash and head halter, with or without the use of a cupped hand underneath the pets chin can pull the dog into a sit with eye contact for release and positive reinforcement. With further training the eye contact can be maintained for progressively longer intervals before reinforcing. Similarly the leash and head halter can be used to achieve a settled down response, with hind legs over to one side. A settled down of increasingly longer duration and greater relaxation can then be shaped with rewards. With the leash and head halter, the down position can be maintained until the desired outcome is achieved either by keeping a foot on the leash, or by pulling gently upward as the pet begins to rise. The use of the head halter does not preclude the concurrent use of lure reward and clicker training techniques to insure a desirable outcome.

b) Physical Exercises.

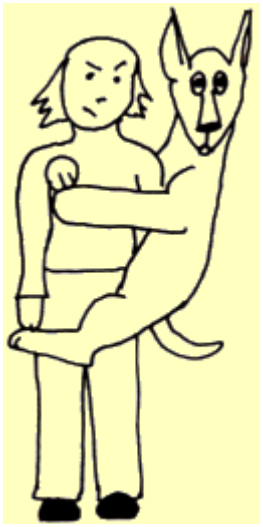
Techniques that use physical contact can help to increase the enjoyment and decrease any fear associated with handling and restraint. In addition, they provide a means for achieving a relaxed state, which might then be used if the dog begins to get excited or aroused. While the physical contact and attention may provide sufficient reinforcement for some dogs, food treats can also be paired with handling to mark and reward the desirable response. TTouch and SOFT exercises are two physical / interactive exercises that are designed to help pets relax. While these are specific techniques, any physical handling that is associated with a positive outcome can be a valuable training exercise. In addition, by withholding affection when the pet solicits it, it increases its motivational value and usefulness as a reward. See our individual handouts that detail these exercises.

Physical exercises are intended to be used only with friendly, non-aggressive dogs. If you think your dog might become aggressive, do not begin without first discussing this with your behavior consultant. If your dog growls or attempts to bite, becomes fearful, or struggles excessively during these exercises, immediately discontinue them and seek the advice of a behaviorist or trainer.

This client information sheet is based on material written by Debra Horwitz, DVM, Diplomate ACVB & Gary Landsberg, DVM, Diplomate ACVB

Separation Anxiety

The Pet Health Care Library



The worst cases of separation anxiety present an unlivable disaster for the pet owner. The animal becomes destructive, soils the house, and vocalizes loudly and unabashedly. Since the behavior occurs almost exclusively when the pet is alone, there is nothing to stop him from creating a spectacular mess and annoying the neighbors every time the owner steps out. In milder cases the dog may show only panting, over-grooming, or pacing, which is not overtly destructive but clearly represents an unpleasant mental state for the patient.

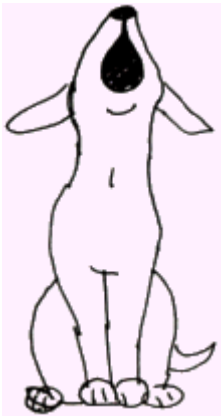
- Often the dog begins the anxiety display when he perceives cues that the owner is about to leave (i.e. the owner puts on cologne for work, gets the car keys, takes a shower, makes coffee etc.).
- Separation anxiety problems can be precipitated by moving to a new home, loss of another pet in the home, or by prolonged separation from the owner. Prior to these events, the dog may have shown no separation anxiety whatsoever. Pets owned by single owners are 2.5 times as likely to have signs of separation anxiety as are pets living with more than one person.

Separation Anxiety vs. Boredom

It seems intuitively obvious that boredom and anxiety are opposite mental states but when one considers that dogs cannot talk, it becomes easier to see how one might misinterpret a dog's behavior. One may come home to find the front door scratched up beyond recognition or the sofa reduced to a pile of stuffing. Was he reacting to his fear of being alone? Was he bored and looking for fun? Was he frustrated because he did not know when to expect his owner to be home?

Separation anxiety is about two things: Separation and anxiety (or fear). Here are some clues that the problem is separation anxiety and not something else:

- The behavior occurs only when the pet is left alone or anticipates being left alone. (The dog who is destructive for fun may well be destructive when he is not left alone.)
- The pet is hyperattached to the owner. The hyperattached pet follows the owner from room to room and/or constantly wants to be held. Many people enjoy being loved by a dog to this extent but it is important to realize when some independence must be learned.
- Destruction is oriented against barriers such as doors (especially the door where the owner was last seen by the pet).
- Vocalization during the episode tends to be high pitched and in repeated yips. (This is a regression to a young puppy's distress call in the time of separation from its mother.)
- The episode begins in the first 30 minutes from the time the owner leaves.



Not every one of these signs must be fulfilled for the diagnosis of separation anxiety to be made but the point is that an effort should be made to determine if the dog is actually showing separation anxiety or if there is some other motivation at work.

Treatment

Living with a destructive animal is an on-going nightmare. One never knows what disaster will be waiting on the other side of the front door and the simple luxury of finding one's things where one left them becomes an impossible dream. It would be wonderful if one could simply give the dog a pill and solve the problem; unfortunately, training is the primary focus of solving separation anxiety and medication is an adjunct. Often the owner needs as much training as the dog.

Step One: Discourage Hyperattachment

Dogs will often solicit attention from their owners. Resist the temptation of petting the dog with separation anxiety when approached for play or contact. Be aloof when greeted upon arriving home. Instead the human should be the initiator of contact with the dog.

Do not allow the dog to settle down in close proximity (within one yard) of where the owner is settling down. Arrange objects on the bed or sofa or on the floor so that the dog must settle at a greater distance. If possible, verbally reward the dog for settling at a distance (though take care as continued attention may be seen by the dog as an invitation to approach which is not what we want.) If the dog normally sleeps on the owner's bed, provide the dog with his own bed. One may need to start with the dog bed at the foot of the human bed before ultimately the dog bed is moved to the floor or even outside the room.

If there are other people in the home besides the primary dog caretaker, try to divide the care giving among the different people so that the dog is not as dependent on one person.

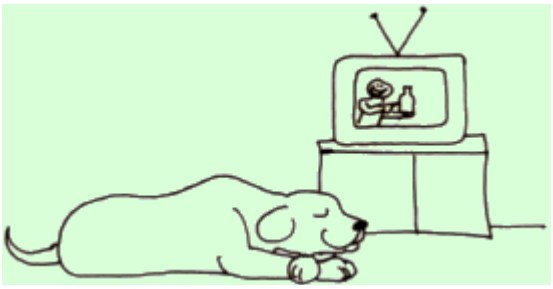
Encourage independent play by using interactive toys that do not require human participation (like a Kong toy containing a food reward).

Step Two: Relaxation During Separation

It is also important to create a positive environment in the owner's absence. There are several ways this might be achieved.

Provide a special treat (food, toy or both) only available when the pet is left alone. Do not forget to remove the item when you return home.

The D.A.P. (dog appeasement pheromone) diffuser is a plug-in scent-releasing device. The material released is a genetically engineered pheromone normally secreted by mother dogs to their puppies as a message telling them to relax and that everything is all right. The pheromone is odorless to humans. A pump spray is also available but the diffuser continuously releases its message to hopefully keep the anxious dog calm. More recently, a D.A.P. pheromone collar has become available so that the dog simply carries the biochemical message around with him.



Leave the TV or radio on. The dog will not be fooled into thinking that someone is home; the point is to recreate a sense of cozy relaxation. Most people at home relax while listening to the radio or watching TV and the dog often sits in the room relaxed, too. The sound of the broadcast becomes a classically conditioned cue to the dog and may be helpful in creating a sense of comfort.

Step Three: Desensitization to Separation

Dogs readily learn the cues that indicate that the owner will be leaving the house soon. It is helpful to uncouple these cues from the actual leaving. At random times, the owner can go through some of the rituals of leaving: put on cologne, shower, wear work clothes, taking the car keys, even going outside and locking the door - but then coming in again. This helps the dog to remain relaxed when he hears or sees these cues at the times when the owner is actually leaving. It is important to repeat these cues so many times daily that they become meaningless to the dog.

Do not punish the dog for behavior demonstrated in fear.

This usually only leads to more fear or more anxiety. Second, unless the animal is actually in the process of performing the behavior one wishes to discourage, the dog will not understand what behavior is being punished.

Drugs

Currently clomipramine and fluoxetine are the only FDA-approved drugs for the treatment of separation anxiety in the dog; however, other human anti-anxiety medications have a long history of use for this purpose.

Clomipramine, a tricyclic anti-anxiety drug so named because of its chemical structure, works by increasing levels of serotonin in the brain. Serotonin is a neurotransmitter associated with pleasant, relaxed sensations. When serotonin levels are high, we fall happily and cozily asleep. Serotonin is also involved with the pleasant sensations associated with eating chocolate, sun-bathing, and falling in love. Problems with reduced serotonin function can lead to anxiety, obsession, and mood disorders.

Clomipramine may be used once or twice a day. Often a lower dose is started, gradually working up to a higher dose. Some owners report good effect right away but it more commonly takes several weeks (4-6 weeks) for a steady blood level to be achieved.

This drug or any other used is meant as a supplement to training and cannot be expected to work without proper behavior management.

For more details on this medication, see manufacturer Novartis Animal Health's information.

Fluoxetine, more commonly known by its brand name Prozac, more recently entered the veterinary market for canine separation anxiety. It also acts by increasing serotonin levels in the brain. It is usually given once or twice daily in combination with behavior management as described above. Elanco, the company that manufactures veterinary fluoxetine under the brand name Reconcile, has trademarked a training program they call B.O.N.D. As with clomipramine, it takes several weeks to expect to see a meaningful change, although some dogs respond more quickly.

Learn more details on Reconcile.

If actual panic is occurring and simply must be stopped, the benzodiazepine class of tranquilizers is appropriate. Sometimes these medications are initially combined with one of the above anti-anxiety medications to help control the situation in the short term. Diazepam, more commonly known as Valium, might be useful in such a situation but the problem is that it will not last long enough to cover several hours of owner-pet separation. Alprazolam (Xanax, a similar drug that lasts longer, may be more appropriate in this situation. Both these drugs are controlled, meaning certain paper work must be filed with the government in order to prescribe them. There may be a limit on the number of tablets that can be obtained depending on local laws.

Behavior is an area that not all veterinarians are comfortable treating. Discuss with your veterinarian whether referral to a behavior specialist would be best for you and your pet. Find a veterinary behavior specialist in your area.

November 3, 2009

Separation Anxiety

The Humane Society of the United States

Dogs with separation anxiety exhibit distress and behavior problems when they're left alone. The most common behaviors include:

Digging and scratching at doors or windows in an attempt to reunite with their owners
Destructive chewing
Howling, barking, and whining
Urination and defecation (even with otherwise housetrained dogs)

Is it separation anxiety?

If most, or all, of the following statements are true about your dog, he may have a separation anxiety problem:

The behavior occurs primarily when he's left alone and typically begins soon after you leave.
He follows you from room to room whenever you're home.
He displays effusive, frantic greeting behaviors.
The behavior occurs whether he's left alone for short or long periods.
He reacts with excitement, depression, or anxiety to your preparations to leave the house.

What causes separation anxiety

It's not fully understood why some dogs suffer from separation anxiety and others don't. But it's important to realize that the destruction and house soiling that often occur with separation anxiety are part of a panic response. Your dog isn't trying to punish you for leaving him alone.

Following are some common scenarios that can trigger separation anxiety:

A dog accustomed to constant human companionship is left alone for the first time.
A dog suffers a traumatic event (from his viewpoint), such as time at a shelter or boarding kennel.

There's a change in the family's routine or structure or the loss of a family member or other pet.

How to treat minor separation anxiety

Don't make a big deal out of arrivals and departures. For example, when you arrive home, ignore your dog for the first few minutes then calmly pet him.
Leave your dog with an article of clothing that smells like you, such as an old T-shirt that you've slept in recently.

Establish a safety cue—a word or action that you use every time you leave that tells your dog you'll be back.

Consider using an over-the-counter calming product that may reduce fearfulness in dogs.

How to handle a more severe problem

Use the techniques outlined above along with desensitization training. Teach your dog the sit-stay and down-stay commands using positive reinforcement. This training will help him learn that he can remain calmly and happily in one place while you go to another room.

Create a "safe place" to limit your dog's ability to be destructive. A safe place should:

Confine loosely rather than strictly (a room with a window and distractions rather than total isolation)

Contain busy toys for distraction

Have dirty laundry to lend a calming olfactory cue or other safety cues.

What to do in the meantime

It can take time for your dog to unlearn his panic response to your departures. To help you and your dog cope in the short term, consider the following interim solutions:

Ask your veterinarian about drug therapy. A good anti-anxiety drug shouldn't sedate your dog but simply reduce his overall anxiety.

Take your dog to a doggie day care facility or kennel when you have to be away.

Leave your dog with a friend, family member, or neighbor when you're away.

Take your dog to work with you, if possible.

What won't help

Punishment. Punishment isn't effective for treating separation anxiety and can make the situation worse. The destruction and house soiling that often occur with separation anxiety aren't your dog's revenge for being left alone: they're part of a panic response.

Another dog. Getting your dog a companion usually doesn't help an anxious dog because his anxiety is the result of his separation from you, not just the result of being alone.

Crating. Your dog will still engage in anxiety responses inside a crate, and he may urinate, defecate, howl, or even injure himself in an attempt to escape. Instead, create other kinds of "safe places" as described above.

Radio/TV noise. Leaving the radio or television on won't help (unless the radio or TV is used as a safety cue).

Obedience training. While formal training is always a good idea, separation anxiety isn't the result of disobedience or lack of training; therefore, it won't help this particular issue.

Consult a professional animal behavior specialist for assistance in resolving your dog's issues.