



Congratulations on your new...  
Family Member



Puppy Introduction Kit

# Congratulations on Your New Puppy!

This is an exciting time and whether you are a first time pet owner or a seasoned pro, we are so pleased that you have chosen Western Animal Clinic to be part of this journey with you.

We hope that you find the information and resources in this package helpful and please know that we are only ever a phone call away to help with your pet healthcare needs.

At Western we strive to form lifelong bonds with our clients and their pets and consider it a privilege to work with you to help keep your four legged family member happy and healthy for many years to come.

We welcome you to Western where we believe that communication, collaboration and prevention are the keys to good health.

Sincerely,

Dr. Rachel Thomas, Dr. Izabela Mac Dougall and the staff at Western Animal Clinic





## Puppy Core Vaccines



Vaccines that help our dogs live long healthy lives are named **DHPP** and **Rabies**.

When a puppy is born, its immune system is not yet mature; the baby is wide open for infection. Fortunately, nature has a system of protection. The mother produces a certain type of milk called colostrum that is rich in all the antibodies and as babies drink this milk, they are taking in their mother's immunity. After the first couple of days, regular milk is produced, and the puppy's intestines undergo what is called closure, which means they are no longer able to take externally produced antibodies into their systems. The first two days are critical for determining what kind of immunity the baby will receive until its own system can take over.

Maternal antibodies against different diseases wear off after different amounts of time, we know this loss starts as early as 8 weeks of age, but by 14-20 weeks of age, maternal antibodies are all gone, and the baby must be able to provide its own immunity. While maternal antibodies are still present in the puppys' system, any given vaccines will be inactivated, the vaccines will not be able to "take" until maternal antibodies have sufficiently dropped, and we do not know exactly when that time is. Therefore, to give the best chance for best immunity, we vaccinate intermittently (usually every 3-4 weeks ) during this period so when the puppy produces sufficient antibodies on its own when the maternal antibodies are lost.

When a vaccine against a specific disease is started for the first time, even in an adult animal, it is best to give at least two vaccinations 3-4 weeks apart, as the body will remember the first exposure, and mount an even better response to the second exposure.

### Vaccine frequency

Vaccine administration frequency is based on how long the vaccine showed minimally 80% efficacy in scientific studies.

**DHPP** - is a modified live vaccine. It has to be administered 3 times (3-4 weeks apart starting at 8 weeks of age (8,12, 16 weeks of age), then boosted one year later, after which can be given every 3 years

**Rabies** - is a killed vaccine. The body mounts a really good response to this vaccine, so after the initial vaccination at 16 weeks of age, a booster one later is needed, and after that it can be given every 3 years.

## WHAT ARE THE CORE CANINE VACCINES?

### The DHPP Vaccine

DHPP stands for Distemper, Hepatitis (caused by Adenovirus), Parainfluenza, and Parvo. These are common contagious viruses that affect dogs.

### **Distemper**

Canine distemper (in the same class as measles) is highly infectious and spread between dogs and other animals by respiratory droplets. The virus infects wildlife such as raccoons, skunks and foxes, and those animals can transmit it to your dog. Once the virus is in the body, it targets the lungs, gastrointestinal tract, and even the brain. The most common clinical signs are fever, discharge from the eyes and nose, anorexia, diarrhea, seizures, and difficulty walking. The prognosis for recovery is poor to grave. If a dog does survive distemper, they are likely to have life-long neurologic issues.

### **Adenovirus/Canine Infectious Hepatitis**

Canine adenovirus causes infectious canine hepatitis, a dangerous liver condition. It is transmitted by animal-to-animal contact or contact with inanimate objects which are likely to carry infection, such as clothes, utensils, and furniture. Adenovirus is shed in bodily fluids such as saliva, feces and urine. Infection affects not only the liver, but can affect the kidneys, eyes, and brain. The most common clinical signs are lethargy, fever, vomiting and diarrhea, coughing, bloody nose, "blue eye", yellow color to the skin, and seizures. Prognosis is guarded for recovery.

### **Parvovirus**

Canine parvovirus is a very contagious and survives for a long time in the environment. It can affect dogs at any age but puppies less than 4 months of age are the most susceptible. Dogs are infected by ingestion of the virus which is shed in feces. Parvo is most known for causing issues with the gastrointestinal system but can also affect the heart. Bloody diarrhea is a classic sign of parvo but vomiting, inappetence, rapid weight loss, and even shock can be seen. The prognosis is guarded, because some dogs will survive while others will die of parvo even with aggressive treatment.

### **Parainfluenza**

Canine parainfluenza is a common cause for upper respiratory tract disease in dogs. It is spread by contact with respiratory secretions (snot and mucous). It causes coughing, sneezing and eye/nasal discharge. Prognosis is usually good as long as the dog doesn't develop any complicating factors, such as pneumonia. Treatment depends on severity of signs and in most cases signs are mild and usually resolve on their own. An incurable and nearly always fatal viral disease of mammals.

### **Rabies**

Rabies is an incurable and almost always fatal virus that any mammal can contract. It is transmitted through bite wounds/saliva and targets the central nervous system, and because it can be spread from animals to people (zoonotic), it is the only legally required vaccination for all cats and dogs in Ontario. Bats, skunks, foxes and raccoons are the most common animals to have rabies.



## Kennel Cough

### What is Kennel Cough?

Kennel cough is a broad term covering any infectious or contagious condition of dogs where coughing is one of the major clinical signs. It is also referred to as infectious tracheobronchitis. The term tracheobronchitis describes the location of the infection in the trachea or 'windpipe' and bronchial tubes.

Several viruses and bacteria can cause kennel cough, often at the same time. These include adenovirus type-2 (distinct from the adenovirus type 1 that causes infectious hepatitis), parainfluenza virus, canine coronavirus, and the bacterium *Bordetella bronchiseptica*.

Because the infection spreads when dogs are housed together, it is often seen soon after dogs have been in kennels, hence the name kennel cough. Because kennel cough can be caused by a number of pathogens, it is often referred to as the **Canine Infectious Respiratory Disease Complex (CIRDC)**.

### What are the clinical signs of kennel cough?

Common clinical signs include a loud cough often describe as a 'goose honk', runny eyes and nose, sometimes reverse sneezing, and in more severe infections, a fever, wheezing, lack of appetite, and depressed behavior. It is not uncommon to see coughing to the point of vomiting in more severe cases. Most dogs with infectious tracheobronchitis will cough when the throat is rubbed or palpated, or during and after exercise. Often, the hacking cough caused by kennel cough will persist for several weeks after the infection.



### How does a dog get kennel cough?

Kennel cough is very contagious, and dogs can readily transmit it by casual contact such as sniffing each other when on a walk, playing, or sharing water dishes. Certain factors increase the likelihood that your dog may contract kennel cough including stress, cold temperatures, exposure to dust or smoke, and crowded conditions. Dogs that frequent off leash dog parks or kennel situations are at highest risk.

### What is the treatment for kennel cough?

In most cases, treatment is symptomatic to control the cough so that the dog doesn't cough to the point of vomiting and can sleep through the night. Cough suppressants and anti-inflammatory medications are most commonly used.

If more severe signs are seen, such as fever and lethargy, it's usually due to bacterial involvement, most commonly *Bordetella bronchiseptica*. In these cases, antibiotics are prescribed. Some cases require prolonged antibiotic treatment, but most infections resolve within 1-3 weeks. Mild clinical signs may linger for several weeks even after the infection is gone.

### How can I prevent my dog contracting kennel cough?

Western Animal Clinic recommends a vaccine protocol that includes bordetella, adenovirus and parainfluenza for dogs that are boarded, groomed, or interact with other dogs in areas such as dog parks.

### How effective are these vaccines?

Immunity, even if the dog has experienced a natural infection, is neither solid nor long-lasting. We cannot expect vaccines to do much better. Some kennel facilities require a booster vaccination shortly before

boarding. We at Western Animal Clinic, based on AAHA (American Animal Hospital Association) recommend a booster vaccine every six months to ensure maximum protection against this troublesome infection.

### **How are the Bordetella vaccines administered?**

Bordetella vaccination is given either by injection, or intra-nasal route. Intra-nasal refers to the liquid vaccine administered as nose drops. This allows local immunity to develop on the mucous membranes of the nose, throat, and windpipe where the infectious agents first attack and provides more rapid protection against infection than the injectable vaccine. There is no need to booster the intranasal vaccine as it is a modified live vaccine, and confers good immunity after 14 days. The injectable vaccine is a killed vaccine, so requires a booster 3-4 weeks later when given initially. Both vaccines need to be boosted annually. Better immunity is seen by switching up which vaccine is given year to year. A 6 month booster is recommended for high risk animals that frequently go to off leash parks or board at kennels.

*Summarized from Veterinary Partner*



## Leptospirosis and Lyme

Leptospirosis and Lyme are both bacterial infections that can be transmitted to dogs, and cause very significant disease, and even death. The risk of getting ill from these diseases can be mitigated with annual vaccines, and prevention to exposure.

### What is Leptospirosis?

The bacteria that cause Leptospirosis are spread through the urine of infected animals, which can get into water or soil and can survive there for weeks to months. Humans and animals can become infected through contact with this contaminated urine (or other body fluids, except saliva), water, or soil. The bacteria can enter the body through skin or mucous membranes (eyes, nose, or mouth), especially if the skin is broken from a cut or scratch. Drinking contaminated water can also cause infection. Animals such as raccoons, skunks, squirrels, opossums, or deer can be infected with leptospirosis. Dogs also may pass the disease to each other, but this happens very rarely. Humans can get infected with this bacteria.



Clinical signs of leptospirosis vary and are non specific and include, fever, vomiting, abdominal pain, diarrhea, refusal to eat, severe weakness/depression, stiffness, and muscle pain. The bacteria can cause severe damage of the kidneys and liver and if not treated cause these organs to fail. Leptospirosis is treatable with antibiotics. If an animal is treated early, it may recover more rapidly and any organ damage may be less severe.

### Prevention of Leptospirosis

#### Avoidance

To help prevent leptospirosis infection, keep rodent problems under control, and keep your backyard uninviting to wildlife such as racoons, skunks and deer, as all these animals can carry and spread the bacteria that causes this disease. Keep dogs away from stagnant water sources.

#### Vaccination

Get your pet vaccinated against leptospirosis. The vaccine does not provide 100% protection. This is because there are many strains (types) of leptospire (the bacteria that causes Leptospirosis), and the vaccine does not provide full immunity against all strains. But it does lessen the disease. This vaccine is an annual vaccine, and when given initially, needs to be boosted 3-4 weeks later.



### What is Lyme?

Lyme disease is caused by the bacterium *Borrelia burgdorferi*. It is transmitted to dogs and humans through the bite of infected blacklegged ticks (aka Deer ticks). The infection is much less severe in our dogs than in us. When canine illness does occur, it does not begin to manifest for weeks to months after infection at which point arthritis signs are noticed. Sometimes there is a fever. In dogs, heart and neurologic issues are exceedingly rare, plus the symptoms of canine Lyme disease generally respond rapidly to an inexpensive course of proper antibiotics. 90 percent of infected dogs will never show clinical signs. But it is still important to prevent exposure and test high risk dogs, as even if asymptomatic, a dog's most serious long-term potential complication of infection is glomerular disease. This is a type of kidney damage that occurs when the immune system is stimulated over a long time by a latent infectious organism or other immune stimulus.



## Prevention of Lyme

### Tick Control

Tick control on the host is an effective means of preventing infection. There are numerous effective tick control products available, and Western Animal Clinic carries oral *Nexgard* (and *Spectra* which combines heart worm control ), or we can order *Bravecto*. These are isoxazolines with insecticidal and tickicidal efficacy. They are non-competitive GABA (gamma-aminobutyric acid) receptor antagonists, much more selective for GABA receptors in insects or ticks, than for those in mammals, including humans. They bind to chloride channels in nerve and muscle cells, which blocks the transmission of neuronal signals. Ticks have to bite in order to be affected. Affected parasites are paralyzed and die.

*Advantix* is a topical pesticide that kills fleas and ticks before they bite. It has a large margin of safety on dogs, but is not safe to use on cats.



### Vaccination

Lyme vaccines have been around for a long time, but due to numerous reasons, they were not that effective. Recently a new Chimera vaccine has been developed. Western Animal Clinic carries this vaccine. The company states that it is 100% effective, if administered as directed, and in dogs that have never been exposed to lyme (puppies and lyme negative dogs). This vaccine needs to be given annually, and initially boosted at 3-4 weeks .



*Summarized from Veterinary Partner*

Proof your puppy against everyday noises such as thunder, fireworks and vacuum cleaners



## Sounds for life

These sounds will help prepare your puppy for life in the modern world. Noise phobias in dogs are common, and these sounds will help prevent your puppy from becoming afraid later in life. Playing these sounds regularly will also ensure that your puppy will be more confident in noisy situations and when having encounters with noisy objects for the first time.

## How to use

Play all sounds, at a very low volume. During successive plays, gradually increase the volume, never going higher than the puppy can easily cope with. Play games and feed tasty treats frequently during sounds to ensure a positive association with the noises. Do not leave the puppy alone while the noises are playing. Play the sounds every day until your puppy is happy to accept the noises played at a volume comfortable for humans. Then continue to play once a week until your puppy is 1 year old.

- Car and traffic noises
- Truck air-brakes
- Trains
- Thunderstorm
- Gunshot
- Bird scarer
- Artillery fire
- Fireworks
- Airplanes
- Hot air balloon
- Helicopters
- Lawn mower
- Music
- Children playing
- Babies crying
- Party sounds
- Telephone ringing
- Kitchen sounds
- Washing machines
- Vacuum cleaner
- Hair dryers
- Aerosol cans
- Drink cans
- Doorbell/knocker
- Letterboxes

Produced on behalf of Merck Animal Health by Gwen Bailey

The “Sounds for Life” are available at [www.puppyfirst.ca](http://www.puppyfirst.ca) or by scanning this QR code.





## Neutering Your Male Dog

### **Why Should I Neuter my Dog?**

Aside from helping control the current overpopulation of dogs, neutering a pet dog generally makes for a healthier dog and a better pet. Neutered dogs tend to live longer and have fewer behavioural problems (see below). They are less likely to be relinquished to the shelter and do not contribute to overcrowding in community animal shelters with their offspring.

### **What are the Health Benefits to the Dog?**

There are several health benefits to neutering. One of the most important concerns the prostate gland, which under the influence of testosterone will gradually enlarge over the course of the dog's life. By age five years, it is usually significantly enlarged in an unneutered male dog. As the dog continues to age, his prostate is likely to become uncomfortable, possibly being large enough to interfere with defecation. The prostate under the influence of testosterone is also predisposed to infection, which is almost impossible to clear up without neutering. Neutering causes the prostate to shrink into insignificance, thus preventing both prostatitis as well as the uncomfortable benign hyperplasia (enlargement) that occurs with aging.

Other health benefits of neutering include the prevention of certain types of hernias and tumours of the testicles and anus. Excessive preputial discharge is also reduced by neutering.

### **What Should I Expect the Day of Surgery?**

Neutering is day surgery. Your veterinarian will discuss the procedure and answer any questions you may have at one of your appointments prior to the day of surgery. The day of surgery, you will meet with one of our registered veterinary technicians for an intake appointment. Your pet will then be admitted to the hospital where they will receive a full physical exam by the veterinarian. They will be placed on intravenous fluids and receive sedation and pre-emptive pain control. The surgery itself occurs under general anaesthesia and further pain control is administered both intra-operatively and upon recovery. Your pet will stay with us for the remainder of the day so they can be monitored closely until they are fully recovered and receive the benefits of ongoing fluid therapy. You will receive an update from their surgeon once they are successfully out of surgery and to let you know how they are recovering. When it is time for them to be discharged that evening, you will have a discharge appointment with our registered veterinary technician to go over home care instructions, what to expect and to answer any further questions you may have. We also send written instructions for you to refer too. All of our routine spay surgeries are done with all buried, absorbable sutures so there is no suture removal for you to worry about.

### **What Behavioural Changes Can be Expected After Neutering?**

Numerous studies on the behavioural effects of neutering have been performed evaluating playfulness, fear of strangers, territorial aggression, mounting, urine-marking, roaming and other behaviours. The behaviours that are most consistently altered after neutering are inappropriate mounting, urine marking and fighting. These behaviours were significantly reduced or completely eliminated in 50-60% of male dogs after neutering. Most pet owners look forward to curtailing these actions and thereby improving their relationship with their dog.

### **At What Age Can Neutering be Performed?**

There is some controversy regarding the best age for neutering.

Male dogs can be neutered at just about any age, although the traditional age is still before puberty at 6-9 months.

Long bones continue to grow for a longer period of time in dogs neutered before puberty, making for a taller adult dog. There can be joint problems associated with this, especially in larger breeds. Not all breeds, even large breeds, seem to have negative consequences when it comes to neutering before one year of age, so it is best to consult your veterinarian about when to neuter your individual male dog.

**Will he Become Over-Weight or Lethargic?**

Metabolism changes with neutering in such a way that there is a moderate risk of becoming overweight after neutering. The dog owner should be prepared to make adjustments in diet or exercise if the dog seems to be gaining too much weight.

**Will he Still be Interested in Female Dogs?**

His interest will be reduced but if he is around a female dog in heat, he will become aroused by her. Mounting behaviour often has its roots in the expression of dominance and may be expressed by a neutered male in a variety of circumstances that are not motivated by sexuality.

**What if My Dog has Undescended Testicles?**

Undescended testicles have an increased tendency to grow tumours. They may also twist on their stalks and cause life-threatening inflammation. For these reasons, neutering is always recommended for a dog with undescended testicles. Retained testicles are also an hereditary trait so it is important that your dog not be bred prior to him being neutered.

**What are the Negative Aspects of Neutering?**

This turns out to be a more complicated subject to study than one might think. The issues that are typically studied are orthopedic/joint related problems and different types of cancers. One study looked at over 700,000 canine medical records and found that neutering increases a dog's lifespan by 14%. They found that neutered dogs were less likely to die of infectious diseases, degenerative diseases or trauma but were more likely to die of cancer or immune-mediated disease than their unneutered cohorts. Upon scrutinizing different cancers, incidences are still low and cancer development is more about environmental exposures and hereditary/breed predispositions than about testosterone, so it can be difficult to draw conclusions.

With regard to hip dysplasia and cruciate ligament rupture, probably the most common joint problems in dogs, body condition/obesity, general size of the dog and genetics are likely to be the major risk factors but there does seem to be an increased risk of these issues in dogs neutered before puberty when their bones are still growing and conformation is not set.

For more information regarding neutering your dog, visit [www.veterinarypartner.com](http://www.veterinarypartner.com)





## Spaying Your Female Dog

Surgical sterilization of the female dog, commonly referred to as spaying, is one of the most significant aspects of female dog care an owner can provide. The benefits to the dog far outweigh simply not having puppies, though as pet over-population looms as a societal problem, it is important to consider the bigger picture as well and be part of the solution rather than part of the problem.

Spaying involves removal of the uterus and ovaries. It is a major surgery but a commonly performed one, ideally performed while a female dog is still in puppyhood, prior to her first heat cycle.

### All the Reasons You Should Spay Your Female Dog

#### **Mammary Cancer Prevention**

A female dog spayed before her first heat will have a near zero chance of developing mammary cancer. After the first heat, the incidence of tumour development climbs to 7% and after the second heat the risk is 25% (one in four!). It is easy to see that an early spay can completely prevent what is frequently a difficult and potentially fatal form of cancer.

Is it too late if a dog is already past her second heat? No. In fact spaying is important even in female dogs who already have obvious tumours. This is because mammary tumours are stimulated by estrogens; removing the ovaries, the source of estrogens, will help retard tumour spread.

#### **Pyometra Prevention**

Pyometra is the life-threatening infection of the uterus that generally occurs in middle-aged to older female dogs in the six weeks following heat. The hormone progesterone, which primes the uterus for potential pregnancy, does so by causing proliferation of the blood-filled uterine lining and suppressing uterine immune function. It is thus easy during heat for bacteria in the vagina to ascend to the uterus and cause infection. The uterus with Pyometra swells dramatically and is filled with pus, bacteria, dying tissue and toxins. Without treatment, the dog is expected to die. Despite her serious medical state, she must be spayed quickly if her life is to be saved.

Pyometra is an extremely common disease of unspayed female dogs. One in four unspayed female dogs who have survived to age 10 will get it.

Without treatment, the dog will die.

Treatment is expensive.

Treatment involves surgery in a potentially unstable patient. Mortality rates with surgery have been reported as high as 17%.

Spaying prevents the whole thing.

Older, unspayed female dogs have an irregular heat cycle. There is no end of cycling comparable to human menopause. If you still decide against spaying, be familiar with the signs of pyometra which include loss of appetite, lethargy, vomiting, excessive thirst and usually (but not always) obvious vaginal discharge.

#### **Simple Convenience**

Female dogs come into heat every 8 months or so. There is a bloody vaginal discharge and local male dogs are attracted. Often, there is an offensive odour. All of this disappears with spaying, not to mention the inconvenience of an unplanned litter of puppies to house, clean, feed and adopt out.

#### **What to Expect the Day of Surgery**

Spaying is day surgery. Your veterinarian will discuss the procedure and answer any questions you may have at one of your appointments prior to the day of surgery. The day of surgery, you will meet with one of our registered veterinary technicians for an intake appointment. Your pet will then be admitted to the hospital where they will receive a full physical exam by the veterinarian. They will be placed on intravenous fluids and receive sedation and pre-emptive pain control. The surgery itself occurs under general anaesthesia and further pain control is administered both intra-operatively and upon recovery. Your pet will stay with us for the remainder of the day so they can be monitored closely until they are fully recovered and receive the benefits of ongoing fluid therapy. You will receive an update from their surgeon once they are successfully out of surgery and to let you know how they are recovering. When it is time for them to be discharged that evening, you will have a discharge appointment with our registered veterinary technician to go over home care

instructions, what to expect and to answer any further questions you may have. We also send written instructions for you to refer too. All of our routine spay surgeries are done with all buried, absorbable sutures so there is no suture removal for you to worry about.

### **What About Behavioural Changes**

The female dog's reproductive tract is dormant for most of the year. It only activates for the approximate three week period of heat. This means that from a behavioural standpoint, the female dog acts spayed most of the time. This said, there has been a documented slowing of metabolism after spays and it may be necessary to use a reduced calorie food in an adult dog. Check with your veterinarian about nutritional recommendations.

### **What is the Best Age to Spay?**

A lot of factors go into this question. As mentioned, dogs have a huge problem with mammary cancer development and spaying before the first heat cycle (generally before age 6-8 months) removes this problem as a consideration. Spaying before the first heat cycle is protective against an extremely common form of cancer and there is no question about it. Further, spaying while the dog is of a smaller size and sexually immature, makes for less trouble with bleeding in surgery and an easier recovery after surgery. Larger dogs are a more difficult surgery and are therefore more costly to spay.

That said, research has shown that there is an increased incidence of some other problems in some breeds when they are spayed young.

For some breeds, there is an increased incidence of urinary incontinence associated with spaying before one year of age.

For larger breeds, the situation becomes more complicated. The problem for some large breed female dogs is that some breeds have a higher incidence of joint and bone issues. With regard to hip dysplasia and cruciate ligament rupture, probably the most common joint problems for dogs, body condition/obesity, general size of the dog and genetics are likely to be the major risk factors but there does seem to be an increased risk of these issues in dogs spayed before puberty when their bones are still growing and conformation is not set.

There may also be small increases in other types of cancer in larger breeds when they are spayed young. However, cancer development is still more dependent on environmental exposures and heredity/breed predispositions than about timing of spay so it is difficult to draw conclusions.

It is important to remember that issues regarding joints and bones, urinary incontinence and cancers other than mammary cancer are highly dependent on breed such that findings for one breed do not hold true for another. Field those questions with your veterinarian to find the best pathway for your own pet.

For those interested in further information, visit [www.veterinarypartner.com](http://www.veterinarypartner.com)





## Microchipping Could Save your Pet's Life

### WHAT IS A MICROCHIP?

A microchip ID is a small transmitter about the size of a grain of rice. When a scanner passes over it, a signal is emitted indicating the unique identification number of the chip. This tiny but sturdy little implant can reunite you with a lost pet, serve as proof of ownership in a dispute.

### What Information is Encoded on the Chip?

Only the unique identification number is encoded on the chip. None of your personal information is on the chip. The chip number is similar to a Vehicle Identification Number on a car. The chip number is registered in one of several central registries and it is the central registry that has your personal information (name, address, phone number, alternate contact, pet description etc.). Each chip number is unique and no two chips have the same number.

### Microchip Implantation: Basically a Shot With a Big Needle

The microchip ID is small enough to pass through the bore of a large needle made for this purpose. Implantation is basically an injection. The needle is fairly large so sometimes can hurt, but most often is well tolerated. Many owners like to wait until the pet is being spayed or neutered so as to be anesthetized and not feel the injection. Waiting runs the risk of the pet escaping unidentified so it is a good idea to implant the chip as soon as possible. The chip is always inserted under the skin between the shoulder blades.



### Can a Microchip be Used to Locate a Lost Pet?

No. A microchip is not a location device. At the present time, GPS collars are available but their use is limited by the fact that a collar can be removed or can come off. A microchip is an identification device, not a locator and DOES NOT have a GPS.

### What happens if my pet is lost?

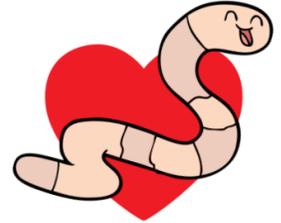
If a pet is lost, and it is picked up by the city, shelter or a vet, the site will be scanned. If a chip is found, they will be able to contact the registry and find the pet's owner. It is very important to keep your information on file with the microchip company current, in order to facilitate this.





### Heartworm in dogs

Did you know that Heartworm is endemic in Southwestern Ontario? It is a treatable and preventable disease. Prevention of heartworm is always preferable to treatment as it is safer, simpler, and less costly. At Western Animal Clinic, we do not see many cases of heartworm, because most owners keep their animals on MONTHLY preventive medication each year, June through November, when the vector, a mosquito thrives.



### How does a dog get heartworm?

Mosquitoes play a critical role in the transmission of heartworm disease. As such, risk is especially high during mosquito season and along waterways where mosquitoes frequent. A mosquito feeds on an infected animal (such as another dog) and picks up an immature stage of heartworm called microfilaria. This immature stage matures **within** the mosquito to an infective stage. The mosquito then goes on to bite a dog and pass along this infective stage larvae (stage L3 and L4), which matures further over six to seven months into adult heartworm within that dog.

Adult heartworms can live for up to five to seven years in a dog. Dogs can be re-infected even if they already have heartworm, which means that they can have more and more heartworms build up in their body if not treated.

### Preventing Heartworm disease

Preventive medications are used monthly to periodically KILL larval heartworms that have managed to gain access to the dog's body. At this point, the products available at Western Animal Clinic are intended for monthly use. This means each time they are given they kill all the heartworm larvae (stage L3 and L4) that have accumulated in the past month. There are many topical and oral choices.

Listed below are the products we carry:

- IVERMECTIN Based Products (Heartgard, Heartgard Plus, Spectra)
- MILBEMYCIN Based Products (Interceptor, Interceptor Plus)
- SELAMECTIN Based Products (Revolution)
- MOXIDECTIN Based Products (Advantage Multi)

Whichever product you use, begin your heartworm season with a HEARTWORM TEST to be sure your dog is NEGATIVE and prevention can begin, as some of these preventive products can be harmful if used in heartworm positive dogs.



### What are the signs of heartworm disease?

Clinical signs of heartworm disease can include cough, shortness of breath, exercise intolerance, lethargy, reduced appetite, and weight loss. Severe cases may result in heart failure, which can present as a swollen belly and legs, due to fluid build up.

### What's involved in treating heartworm?

Treatment for heartworm is MUCH more expensive than prevention, has dangers (anaphylaxis and potential complications of clots forming from the killed adult worms) and requires months of cage rest and oral medications.

## Intestinal Parasites in Dogs Cat

### Most common Intestinal parasites in dogs & cats

- Nematodes - Roundworms and Hookworms
- Cestodes - Tapeworms
- Protozoans - Coccidia and Giardia



### Roundworms

Roundworms are the most common gastrointestinal parasite in kittens and puppies. They are transferred via the fecal oral route, and also from the mother via the placenta and milk. They live in the intestine and eat the food the pet ingests, so will stunt the animals growth, and cause digestive upset and too much gas in the intestines leading to pot bellied appearance. Fecal tests look for eggs of this parasite. The eggs are intermittently shed, which means that sometimes they will not be present in the stool, even though there is an infestation. Most kittens and puppies have this parasite, therefore we recommend deworming your young pet, even with a negative fecal float (poop test for parasites)

### Hookworms

Hookworms are one of the most pathogenic intestinal parasites. They are 1-2 cm long and attach to the lining of the small intestine where they feed on blood. Kittens and puppies with this parasite can be anemic as well as have diarrhea, which leads to poor growth, and in severe cases even death. Hookworms are more common in kittens and puppies that come from outdoor environments. They are spread via the fecal oral route.

### Tapeworms

Tapeworms are contracted via ingestion of an intermediate host by a dog or cat. The most common intermediate host is a flea. Birds and rodents are also intermediate hosts. The adult tapeworm inside the pet can be a half a foot or more long. 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 by 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. Tapeworms look like pieces of mobile rice in the stool, or sesame seeds adherent to the perianal area.

### 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 and can be a life-threatening problem to an especially 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 *Cystoisospora*. Dogs and cats each have their own coccidia species and cannot infect each other, nor can they infect people.

### Giardia

*Giardia* are single-celled organisms, infectious to many types of animals (including humans) all over the world. *Giardia* organisms have little whip-like tentacles called flagella that classify them as flagellates. They use their flagella to move around from place to place but when they find a spot where they wish to stay (like a cozy nook in the host's intestine), they use a suction cup-like structure to attach. Their presence in the host intestine can cause diarrhea, though some hosts are symptom-free carriers. Different types of *Giardia* infect different types of animals; it is rare for *Giardia* from a pet to infect a human. Furthermore, dog and cat *Giardia* species are separate and are unlikely to cross from dog to cat or vice versa.

*Giardia* is not visible to the naked eye. It is also difficult to detect on routine fecals due to its size and shape. Therefore your veterinarian may recommend an ELISA test that picks up the parasites DNA in a stool sample that is sent to an outside laboratory.



## Fecal Float & Deworming

### What is a fecal flotation?

Fecal flotation is a test done at Western Animal Clinic to diagnose internal parasites or "worms." The test detects the eggs of mature parasites that live inside the body and pass their eggs to the outside by shedding them into the host's stool. Some of these parasites are worm-like, while others are tiny single-celled organisms called protozoa. As there are many different "dewormers", this test helps to identify which parasites the animal has, so that the appropriate treatment can be administered.

### How is the test done?

Stool material is mixed with a special liquid that causes the parasite eggs to float to the surface. The eggs are collected from the surface using a glass slide. The slide is examined under a microscope, and the appearance of the eggs identifies what type of adult parasite is present. The number of eggs found may reflect the severity of the infection, but this is not always reliable.



### What do you need to bring for a fecal?

A one inch piece of fresh stool. Ideally, the stool sample should be no more than 24 hours old and should be as free as possible of grass, gravel, kitty litter, etc. Any clean, dry container with a tightly fitting lid can be used, such as a jar or plastic tub or a doubled up plastic bag can be used to bring in the sample.

### When should fecal flotation be done?

Kittens and puppies are frequently infected with intestinal parasites (most commonly roundworms that were transmitted via the placenta and milk) and are susceptible to re-infection. Therefore, at least one stool sample should be brought when the kitten/puppy is coming for its initial vaccines. If a pet is found to have parasites, follow-up fecal flotations may be recommended to monitor the response to treatment. Fecal flotation may also be recommended if a pet develops diarrhea or fails to gain weight as expected.

### Does the test work every time?

No. Fecal flotation is only a basic screening test and may fail to detect infection in some situations. A fecal flotation test may fail to detect parasite infection because; the parasites themselves are too young to produce eggs; the infection is mild and there are only a few adult parasites present; some parasites only produce small numbers of eggs and infection may be missed on a single test as the eggs are shed intermittently in the stool and some parasites just cannot be detected reliably with fecal flotation, such as the protozoan parasite giardia, and lungworm.

### Deworming Recommendations

For puppies and kittens, it is recommended that they get a complete dewormer 2 weeks apart until they are 4 months old. The type of deworming will be based on the results of the fecal test. In light of a negative fecal test, the most important parasite to deworm young animals for is roundworm, as due to its life cycle, it can be often missed on a fecal. This parasite is almost guaranteed to be present in our young kittens and puppies as they acquire it through maternal transmission via the placenta and milk. Deworming for roundworms improves overall health and growth, and decreases the chance of intestinal inflammation and allergies later on in life.



For adult cats and dogs, the recommended deworming, is based on exposure. The fecal oral route is the most common way to get infected with parasites, hunting and eating prey is the next most common way. If your pet is exposed to other pets, or their fecal material, or is a hunter, then we at Western Animal Clinic recommend a routine deworming. For dogs, this routine deworming for the most common parasites is included in the monthly spring to fall prevention for heart worm. For cats, we usually dispense a complete oral dewormer to be give 4 times a year.

# Parasite diagnostic, treatment, and prevention guidelines<sup>1</sup>

## Each pet's risk depends on its lifestyle



### EARLY START SCHEDULE

## Puppies

<6 months of age<sup>1</sup>

- Deworm at 2, 4, 6, and 8 weeks of age, then monthly up to 6 months of age
- When first brought home: Deworm a minimum of 3 times 2 weeks apart, then monthly up to 6 months of age



### LOW RISK<sup>1</sup>

## Mostly Indoor

Lives inside and goes outside only to eliminate

- Deworm 1 to 2 times per year
- Treat based on fecal examination results and prevention needs
- Provide monthly heartworm preventives, flea preventives, and tick control based on regional and seasonal risk



### MEDIUM RISK

## Indoor and Outdoor

Occasionally off-leash, lives in endemic area

- Deworm at least twice but preferably 3 to 4 times per year<sup>1</sup>
- Treat based on fecal examination results and prevention needs<sup>1</sup>
- Provide monthly heartworm preventives, flea preventives, and tick control based on regional and seasonal risk<sup>1</sup>
- Deworm monthly for *Echinococcus* spp<sup>1,2,3</sup>



### HIGH RISK

## Mostly Outdoor

Regularly off-leash outside, lives in endemic area

- Deworm at least twice but preferably 3 to 4 times per year<sup>1</sup>
- Treat based on fecal examination results and prevention needs<sup>1</sup>
- Provide monthly heartworm preventives, flea preventives, and tick control based on regional and seasonal risk<sup>1</sup>
- Deworm monthly for *Echinococcus* spp<sup>1,2,3</sup>



## Fleas

Fleas are the most common external parasite to plague companion animals. They are wingless insects that feed on blood, can jump up to two feet high and are persistent in the environment. Though there are many species of fleas, the one that most often affects both dogs and cats in North America is the cat flea, *Ctenocephalides felis*.

### Fleas can cause serious health problems for you and your pet.

**Anemia:** Fleas suck blood and blood loss leads to anemia. A heavy flea burden can be lethal, especially to smaller or younger animals. The cat flea has even been known to kill animals as large as dairy calves through heavy infestation.

**Flea Allergy Dermatitis:** Fleas can cause severe itching and also other problems such as skin infections and hair loss. Some animals can become allergic to fleas, and flea allergy dermatitis is the most common skin disease of dogs and cats.

**Tapeworms and Bartonella:** Fleas can carry and transmit a bacterium called Bartonella that can cause health issues in cats, dogs and people. Fleas can carry a type of parasite, a tapeworm called *Dipylidium caninum* that can suck nutrients from the pet's intestines and cause anal itchy.



### Common Flea Myths:

Although fleas are the most common parasite in dogs and cats, there are many misconceptions about them. Myths that veterinarians hear about fleas almost every day are:

**Myth:** My pet cannot have fleas because he lives entirely indoors

**Fact:** Fleas thrive particularly well in the well-regulated temperatures in the home.

**Myth:** My pet cannot have any 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.

**Fact:** The cat flea, *Ctenocephalides felis*, can suck the blood of a wide variety of animals. However, this flea definitively does not prefer human blood and won't eat it unless absolutely necessary. Humans tend not to be bitten unless flea population numbers are high.

**Myth:** We do not have fleas because we only have hard wood floors.

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

**Myth:** My pet cannot have fleas because I would see them.

**Fact:** You cannot expect to see fleas because many animals will lick, groom and chew after being bitten by a flea. This causes the flea to either jump off the pet or to get swallowed.

### The Flea Life Cycle

There are four life stages of the flea. For effective flea control, it's important to know how to break this life cycle in more than one place.

The flea life cycle consists of egg, larval, pupal and adult stages. Eggs are laid in the hair coat and are designed to fall off your pet and into your home. Larvae hatch from the eggs and develop in a pet's environment by feeding on adult flea feces (i.e. digested blood) that fall out of the hair coat of the pet. Larvae eventually spin cocoons, often within carpet fibres, for population. Pupae are resistant to freezing, drying and insecticides, and can lie dormant for many months! New fleas develop from pupae and can begin feeding within hours of finding a dog or cat. The entire flea life cycle can be completed in as little as three weeks.

### Flea Control Strategies

Today, veterinarians have some great flea control products in our arsenal. There are now many effective and safe new products to choose from.

Be sure to discuss effective flea prevention and treatment options with your veterinarian and remember, it is very important to never use products on your cat that are intended for dogs.



## Ticks

Ticks are parasites that feed on the blood of unlucky host animals, such as cats and dogs. Like mites and spiders, ticks are arachnids. Although their presence may not even be noticed by the host, ticks can transmit many diseases through their bite. Tick species and disease transmission tend to vary based on where you live.

### Tick Transmission

Most species of ticks require blood meals from a host to survive.

Ticks bury their head into a host's skin when they bite and then gorge themselves on blood.

Ticks tend to be most active in late spring and summer and live in tall brush or grass, marshy or wooded areas including areas like your yard, where they can attach to dogs and outdoor cats.

Ticks can be transferred from pets coming into the household from outdoors.

Ticks prefer to attach close to the head, neck, ears and feet but can be found anywhere on your pet's body.

Tick bites can be potentially dangerous and lead to illnesses in both humans and pets, specifically dogs.



### What is Lyme Disease?

Lyme disease is a zoonotic disease- meaning that it can be transmitted to both animals and humans- caused by a bacterium that is carried primarily by ticks. It can be difficult to detect and can cause serious recurring health problems.

Pets infected with Lyme disease may not show symptoms for two to five months.

### Typical symptoms usually include:

Elevated body temperature  
Swollen lymph nodes  
Fatigue  
Loss of appetite  
Lameness in limbs  
Joint swelling  
Decreased activity  
Potential kidney complications

In both humans and animals, Lyme disease is not contagious and cannot be spread from animal to animal, except through tick bites.

### How Can I Prevent Them From Being Exposed?

Since Lyme disease is so difficult to detect, prevention is especially important. Here are some prevention tips:

Talk to your veterinarian to determine whether you should vaccinate your dog or to determine which tick preventative product is right for your dog or cat.

When possible, try to avoid areas where ticks might be found.

Once indoor, check for ticks on both yourself and your animals.

Keep lawns and yards well maintained.

Clear shrubbery next to your home.

When checking for ticks, be sure to check under the limbs and in and around the ears.



**What Do I Do If I Suspect Lyme Disease?**

If your pet has been bitten by a tick and you suspect that they've been exposed to Lyme disease, it is important to seek veterinary care so that your veterinarian can perform the necessary tests for diagnosis. It is usually treated successfully with antibiotics.

**Other Tick-Borne Illnesses**

These depend on the geographic location you are in and the species of ticks involved. However, keep in mind, that many rescue dogs come from locations other than Ontario.

Anaplasmosis

Babesiosis

Rocky Mountain Spotted Fever Cytauxzoonosis



*Summarized from Veterinary Partner*



If you do find a tick on your pet, it is important to take care when removing it. Any contact with the tick's blood can potentially transmit infection to your pet or even to you. Prompt removal is necessary, but it is important to stay calm and not rush. Follow these step-by-step tick removal instructions.

### Step 1: Prepare

Put on latex or rubber gloves so you'll never have direct contact with the tick or your pet's bite area.

Because throwing a tick in the trash or flushing it down the toilet will not kill it, you should prepare a screw-top jar containing rubbing alcohol to put the tick in after removal. This also allows you to hold it for veterinary testing.

If possible, enlist a partner to help you distract and soothe your pet and hold her still during removal.

### Step 2: Remove

Using a pair of tweezers or a tick puller, grasp the tick as close to the animal's skin as possible.

Pull straight upwards with steady, even pressure and place the tick in your jar.

Do not twist or jerk the tick. This may leave mouth-parts embedded in your pet, or cause the tick to regurgitate infective fluids.

Do not squeeze or crush the body of the tick, because its fluids may contain infective organisms.



### Step 3: Disinfect and Monitor

Disinfect the bite area and wash your hands with soap and water, even though you were wearing gloves.

Sterilize your tweezers with alcohol.

Monitor the bite area over the next few weeks for any signs of localizing infection, such as redness or inflammation.

If infection occurs, please bring your pet- and your jarred tick- to your veterinarian for evaluation.

### Tick Prevention

Many of the same products on the market that treat fleas also kill ticks and prevent against future infestation. Speak to your veterinarian about the best product for your pet.

Ensure a tick free lawn by mowing it regularly, removing tall weeds and making it inhospitable to rodents by keeping garbage covered and inaccessible.





## Helpful Reference Links

### Client Education and Medical Information

[www.veterinarypartner.com](http://www.veterinarypartner.com)

### Toxic Plant Reference

For a complete list of toxic and non-toxic plants for dogs and cats, visit [www.aspca.org](http://www.aspca.org) and type in “toxic plants” to the search bar.

Or go directly to: <https://www.aspca.org/pet-care/animal-poison-control/toxic-and-non-toxic-plants>

### Veterinary Diets

[www.royalcanin.ca](http://www.royalcanin.ca)

[www.proplanveterinarydiets.com](http://www.proplanveterinarydiets.com)

[www.hillspet.ca](http://www.hillspet.ca)

[www.raynecanada.ca](http://www.raynecanada.ca)

### Pet Memorial Services

[www.gatewaypetmemorial.com](http://www.gatewaypetmemorial.com)

### Veterinary Medicine and Regulatory Organizations

[www.ovc.uoguelph.ca](http://www.ovc.uoguelph.ca)

[www.cvo.org](http://www.cvo.org)

[www.ovma.org](http://www.ovma.org)

### Online Shopping for pet food, toys, and more...

[www.myVETstore.ca/westernanimalclinic](http://www.myVETstore.ca/westernanimalclinic)

