

INTRODUCTION

This manual has been developed as a study guide for the Florida State Fair Skillathon, which is part of the Champion Youth Program. The topic for this year's Skillathon is **Health Care Management**.

The Florida State Fair recognizes that agricultural education instructors, 4H agents, parents, and leaders provide the traditional and logical instructional link between youth, their livestock projects, and current trends in the animal agriculture industry. **PLEASE NOTE:** This manual is provided as a **study guide** for the Skillathon competition and should be used as an additional aid to ongoing educational programs.

Sections are labeled **Junior, Intermediate & Senior, Intermediate & Senior, or Senior** to help exhibitors and educators identify which materials are required for their age level.

Juniors

(age 8-10 as of September 1, 2025)

Dog External & Internal Body Parts
Nail Trimming
Ear Cleaning & Anatomy of Canine Ear
Dehydration and Heat Exhaustion

Intermediates

(age 11-13 as of September 1, 2025)

all the above plus...
Health Instruments & Medications
How to Give an Injection & Injection Sites
Common Internal Parasites and Symptoms
Gum Disease
Vaccination Schedule for Dogs
Side Effects of Dog Vaccines

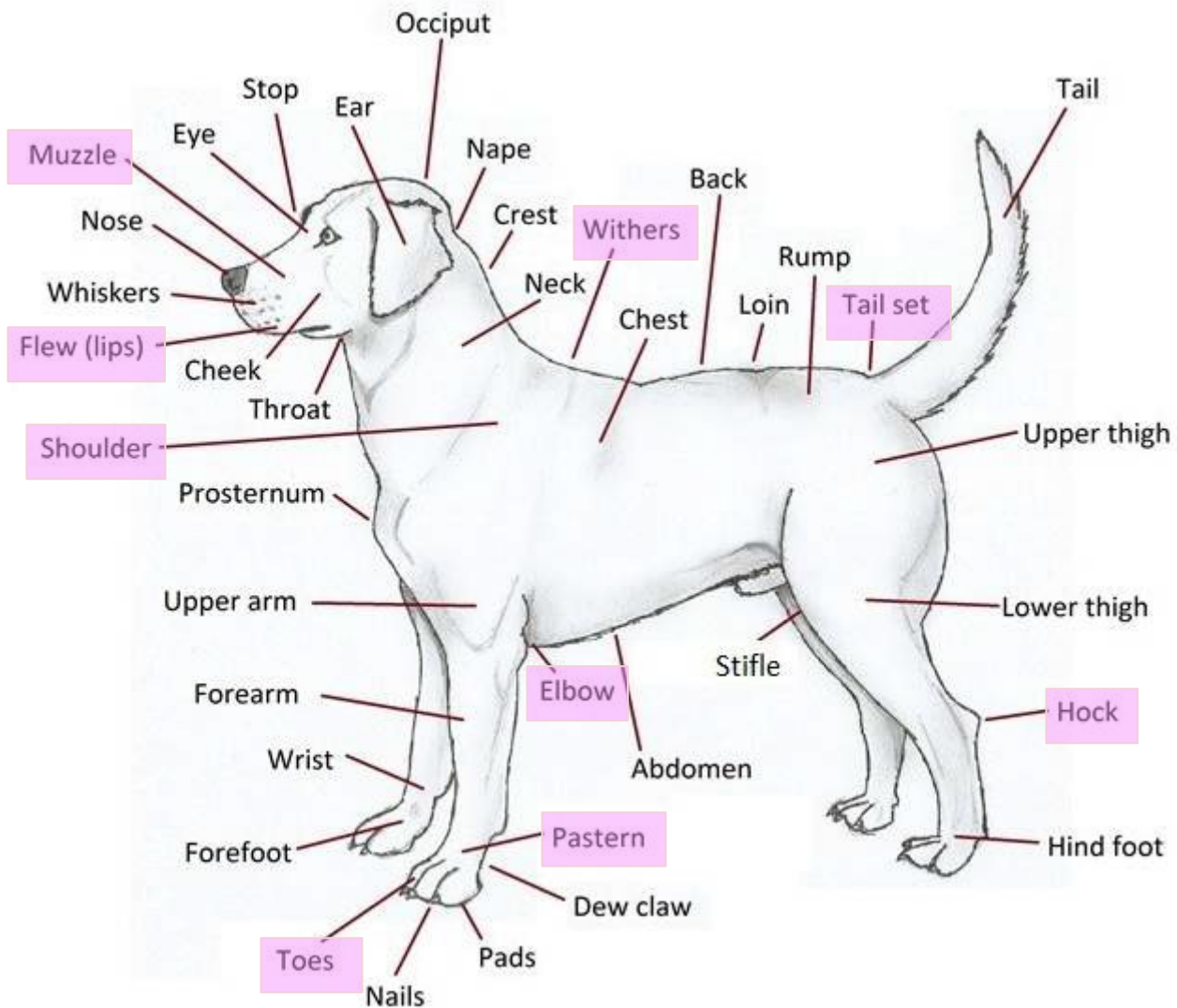
Seniors

(age 14 and over as of September 1, 2025)

all the above plus...
Common Canine Diseases
How to Administer Common Medications
Medication Labels
Medication Calculations
Hip Dysplasia

Study well and GOOD LUCK

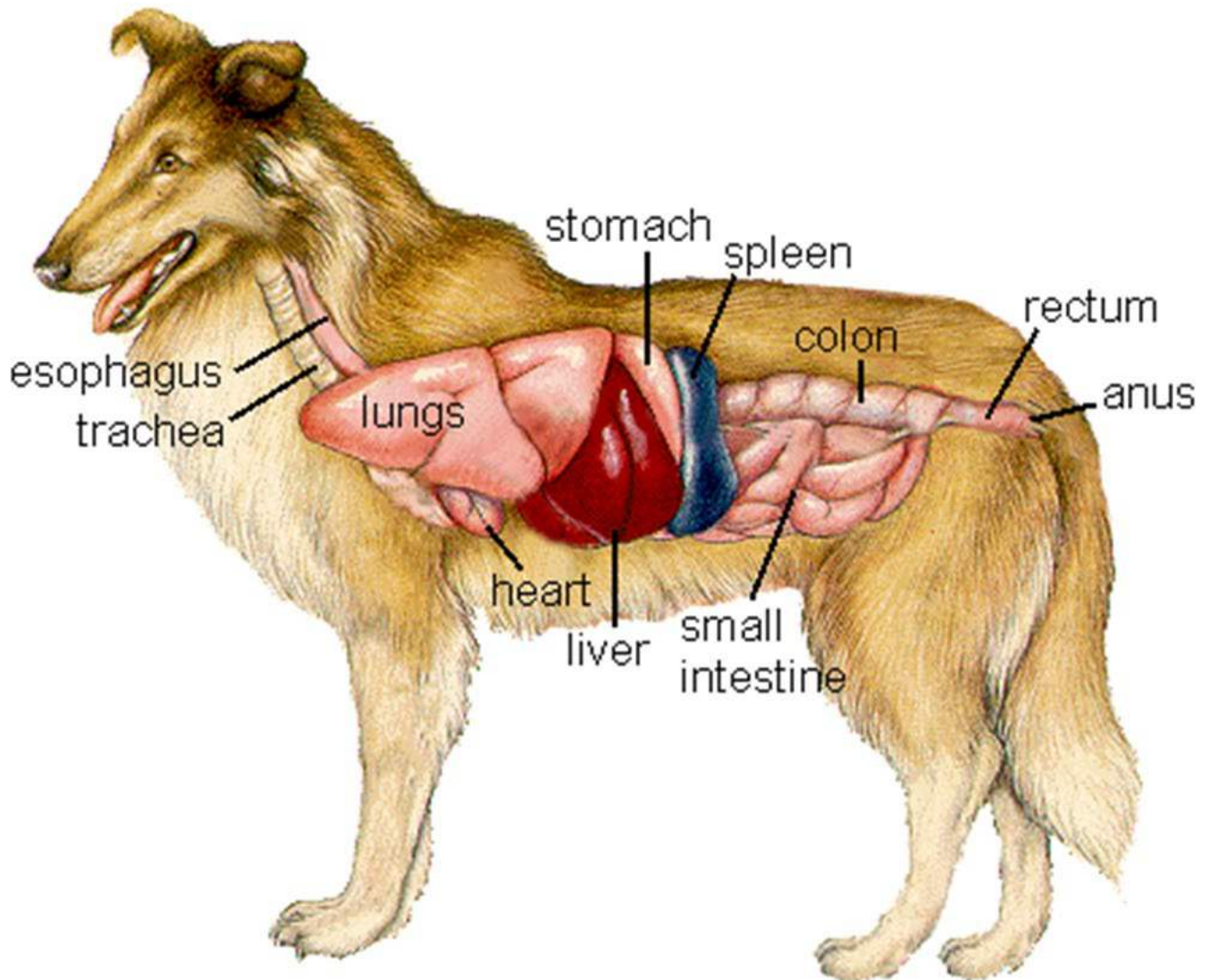
Dog External Body Parts



The following website contains more detailed descriptions of the above external body parts. Juniors are required to know muzzle, flew, pastern, hock, withers, elbows, shoulder, tail set and toes; intermediates and seniors are required to know all of the external body parts.

<https://canineanatomyforbeginners.wordpress.com/exterior-structure/>

Dog Internal Body Parts

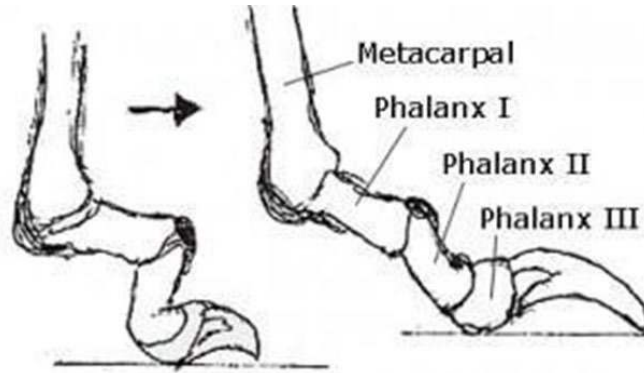


* Notice that the kidneys are not labeled in this picture. The kidneys are tucked up close to the liver toward the spine. Image modified from Hill's Pet Nutrition, Atlas of Veterinary Clinical Anatomy.

Above picture found at: <https://www.dog-nutrition-naturally.com/body-systems.html>

Nail Trimming

The nails of a dog should be trimmed regularly to prevent ingrown nails, traumatic nail fractures, impaired walking from overgrown nails, broken toes, or nails growing into the pad of the foot. Most dogs need their toenails trimmed every two to three weeks depending on the speed of their growth and the level of activity of the dog. Toenails that are left long can cause the bones in the dog's foot to change position and placement. The picture below shows how the angles of the bones change due to a long toenail.



Various types of nail trimmers are available. The owner should choose the type they are most comfortable with. The nail contains a blood vessel called the "quick" (also spelled kwik) that will bleed if a nail is cut too short. The quick appears as a pink line running through the nail and ends at the edge of the nail. It usually does not go all the way to the tip, unless the nail has just been cut. Cutting the quick can be painful for the pet and may make them refuse or struggle with future nail trims. In the event of cutting the "quick," a clotting agent like styptic powder should be applied. The nail should be cut cleanly and any frayed edges should be filed with a nail file or dremel. The nail trimmer should be placed within a few millimeters of the end of the quick and cut with a swift, smooth motion. In the case of a pet with a black nail, when the quick is not visible, a small amount of nail should be gradually trimmed until a clearer or lighter color appears in the cross-section. This lighter colored area in the cross-section indicates the end of the quick. The remaining nails can be trimmed by using the first nail as a reference as to how much to trim. An alternative to cutting the nail is to "dremel" or file the nail until the quick is several millimeters from the end of the nail.

There are many websites that have pictures demonstrating nail trimming for your dog. Here is one that is recommended: dogs.lovetoknow.com/wiki/Trimming_Dog_Nails

Types of nail trimmers



Scissor nail trimmer

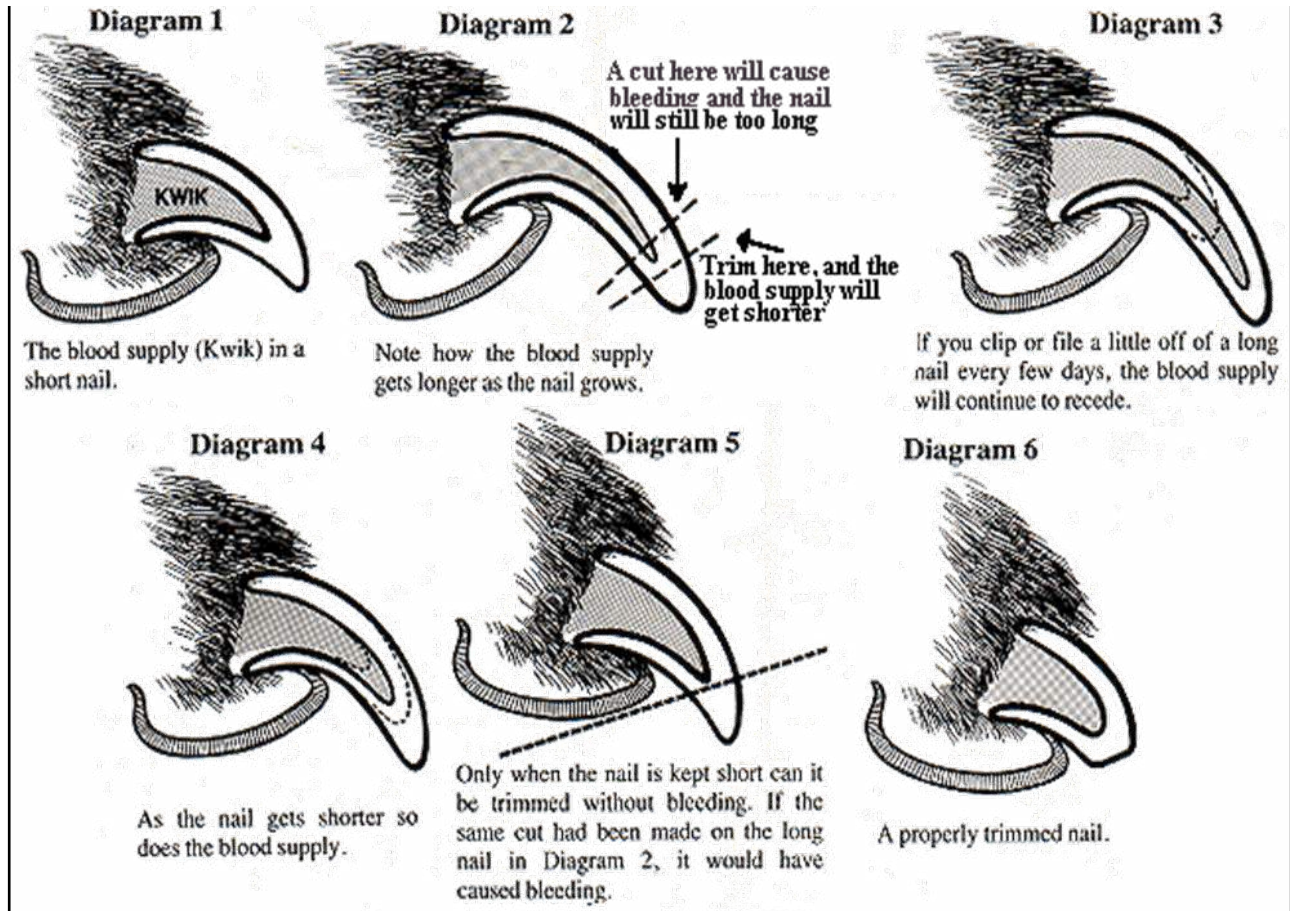


Guillotine nail



Dremel

Diagram of Dog's Toenail and How to Trim the Toenail



Please note: alternate spelling for "quick" can be "kwik."

The above picture found at: <https://headtotailpetspa.com/nail-trim/>

Ear Cleaning Procedure

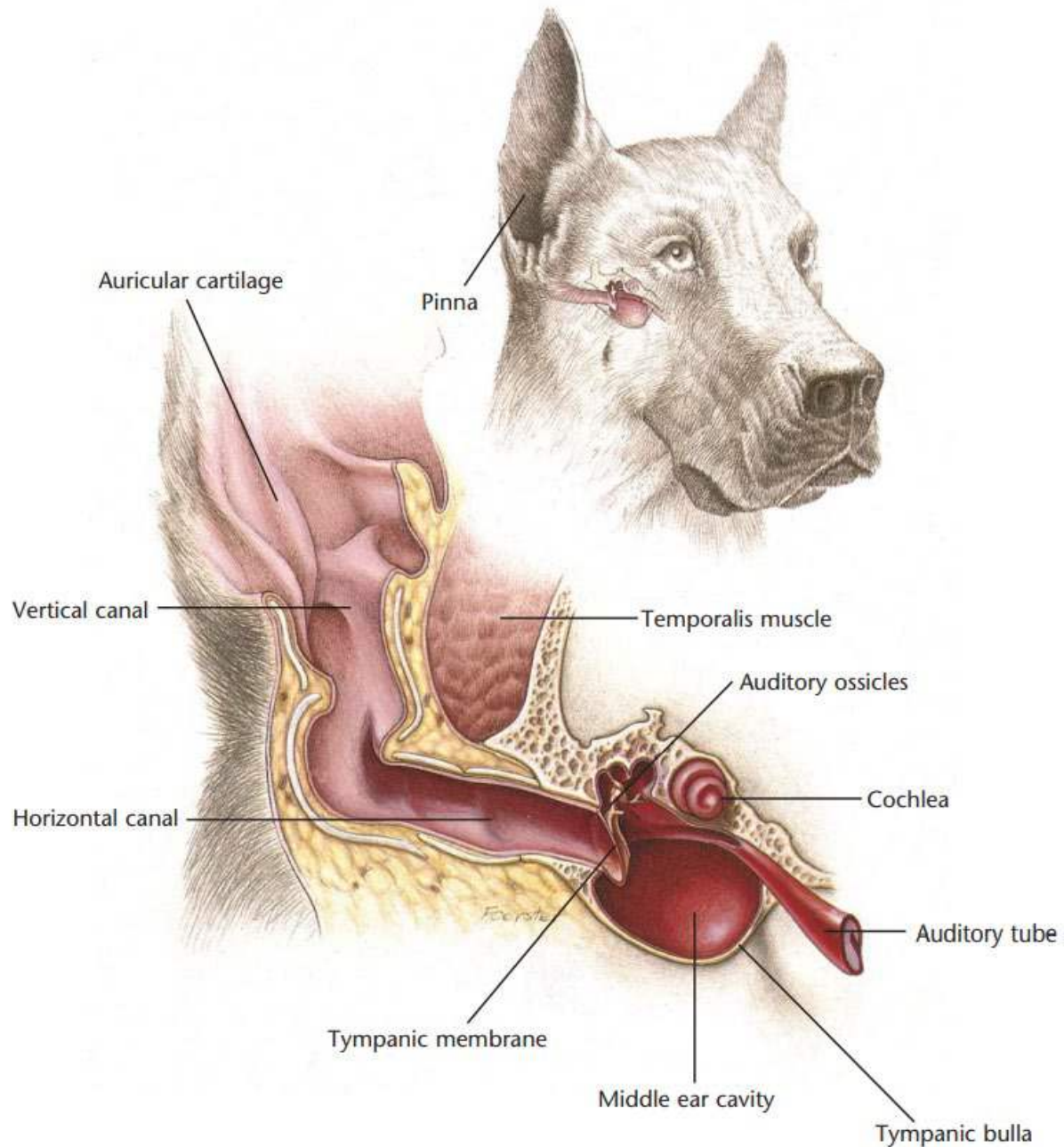
Ear cleaning is an important part of maintaining a dog's health and should be done regularly. The ear cleaning solution should include a drying solution so that the ear does not develop an infection from excess moisture remaining in the canal.

The proper procedure for cleaning should be used to prevent injury or infection and maintain proper health.

1. Put on a pair of latex or rubber exam gloves.
2. Gently tip the head so the ear is angled slightly up (toward the ceiling), grasp the pinna, and place the solution into the ear canal.
3. Massage the base of the ear to distribute the cleaning solution and loosen any debris.
4. Use gauze pads to remove excess cleaning solution and debris.
5. Allow the pet to shake its head to loosen more debris.
6. Use gauze pads to remove excess cleaning solution and debris.
7. Administer more solution into the ear canal.
8. Massage the base of the ear to distribute the cleaning solution and loosen any debris.
9. Use gauze to remove excess cleaning solution and debris.
10. Allow the pet to shake its head to loosen more debris.
11. Use gauze for the external ear canal and interior of the pinna only.
12. Dry the ear canal with a gauze pad to wipe out one last time.
13. Apply any necessary medication; massage the ear canal to distribute the medication.

*Cotton swabs are not recommended because if the dog moves suddenly the tip may damage the inner ear.

Anatomy of the Canine Ear



https://www.hillsvet.com/content/dam/cp-sites/hills/hills-vet/en_us/atlas/HillsAtlasOfClinicalAnatomy-secured.pdf (page 88 of the PDF)

The pictures in this section are reprinted with permission by the copyright owner, Hill's Pet Nutrition, from the *Atlas of Veterinary Clinical Anatomy*.

Dehydration and Heat Exhaustion

Owning dogs and living in Florida means that for more than six months of the year we must be careful with our dogs and the outside temperature. Dogs, like people, are vulnerable to dehydration and heat stroke. Dehydration is caused by a loss of water in the body. This happens when dogs lose water from their body faster than they are able to take it into their body.

Dogs depend on panting to help keep them cool. When it is very hot and humid, panting may not be enough to cool them off. Below is a list of several common situations that can trigger dehydration and/or heat exhaustion:

- being left in a car in hot weather
- exercising strenuously in hot, humid weather
- being a brachycephalic breed, especially a Bulldog, Pug, or Pekingese
- suffering from a heart or lung disease that interferes with efficient breathing
- being muzzled while put under a hair dryer
- suffering from a high fever or seizures
- being confined on concrete or asphalt surfaces
- being confined without shade and fresh water in hot weather
- having a history of heat stroke

Severe or excessive vomiting can cause dehydration. This does not just mean vomiting once or twice but vomiting many times and in large amounts. When a dog vomits, it is not just losing fluids, but also valuable electrolytes. Symptoms of mild dehydration include dry, sticky gums, and thicker saliva. More severe dehydration symptoms include “tenting,” severe panting, sunken eyes, the dog collapsing or signs of shock. Tenting is when the skin on the neck is pulled up but does not fall back into place quickly. Symptoms of shock include heavy panting, rapid heart rate, and bright red gums and tongue.

Treatment for mild dehydration can be as simple as giving the dog water a little at a time and keeping the dog in a cool place. Consider giving them other liquids such as chicken broth (with no garlic, onions, or salt), or pureed dog-safe fruits (like strawberries and blueberries). Unflavored Pedialyte mixed with equal amounts of water can also be given to replenish lost electrolytes. If the dog continues to vomit or skin is “tenting,” a veterinarian should be consulted immediately.

Strenuous exercising in hot, humid weather, especially in the sun and not the shade, can bring on heat exhaustion. Some breeds are more susceptible to heat stroke because the nose is short and “pushed in.” This is known as “brachycephalic.” Heat stroke or exhaustion is more severe and should be treated immediately by a veterinarian. If possible, it is best to start bringing down the dog’s body temperature by running cool water over the dog or placing cool packs in the groin region of the dog. If the dog starts having seizures, take it immediately to a veterinarian for treatment.

Read more about Heat Stroke and Dehydration in these sources:

<https://www.petmd.com/dog/conditions/systemic/heatstroke-dogs>

<https://www.akc.org/expert-advice/health/heatstroke-in-dogs/>

<https://www.akc.org/expert-advice/health/warning-signs-dehydration-dogs/> .

<https://www.akc.org/expert-advice/health/overheating-in-dogs/>

<https://www.akc.org/expert-advice/health/pedialyte-electrolytes-for-dogs/>

<https://www.bostonveterinary.com/web-tails/dog-dehydration/>

Health Instruments & Medications

Instruments may be needed to maintain a pet's health and to monitor them if they are ill. Being familiar with these instruments and knowing how to use them correctly can be beneficial to a pet owner and help prevent potential problems.

Instrument	Description of Use
Muzzle	Restraint device to prevent a pet from biting
Nail Trimmers	Instrument to cut excess length from the nail
Rectal Thermometer	Instrument to determine the core body temperature
Stethoscope	Instrument to monitor the chest, specifically the heart and lungs
Toothbrush	Instrument to remove plaque and disinfect teeth and gums
Medications	Description of Use
Ear Cleaner	Solution to loosen and remove debris from the ear canal (medication to be dispensed by veterinarian)
Styptic Powder	Powder to stop a nail from bleeding if the "quick" is cut

How to Give an Injection

Vaccines and many medications must be given by injection. The discomfort that an animal feels when getting a shot is similar to the discomfort that you feel when you get shots from your doctor. When learning to give an injection, some owners may find it easier to practice on an orange or banana because fruit cannot feel pain. When practicing on a piece of fruit, we must remember that it is somewhat different than giving an injection to a live animal. The live animal may move around, and the skin may be harder to get the needle through.

There are two main types of injections - *subcutaneous* (Sub-Q) or *intramuscular* (I.M.). The subcutaneous injection is given just under the skin, and the intramuscular injection is given within the muscle tissue. On your orange, the peel is comparable to the skin on an animal, the orange sections are comparable to the muscles, and the area in between these two is comparable to the subcutaneous space.

To draw up an injection, wipe the vial top (rubber stopper) with an alcohol moistened cotton ball to disinfect it. Make certain the needle is securely attached to the syringe by inserting the plunger portion of the syringe into the open end of the syringe and twisting the needle onto the syringe tip. Remove the cap, but do not touch the needle. Draw the plunger back to fill the syringe with an amount of air equal to the amount of vaccine you want to inject. Push the needle (with syringe) through the rubber stopper of the vaccine and inject air - this prevents a vacuum from forming as you draw the vaccine out. Turn the vaccine vial (with needle/syringe still inserted) upside down and draw out the desired amount of vaccine. Turn the vial right-side up, remove the needle/syringe, and cap the needle until ready to use.

To give a subcutaneous injection:

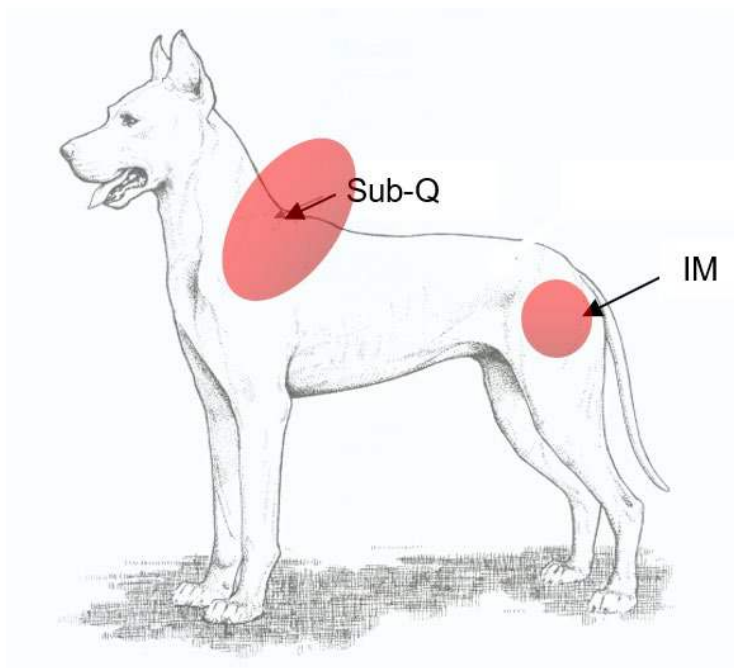
Place the needle just under the skin by picking up a fold of skin behind the dog's head, halfway between its shoulder blades. Gently lift the skin until it is raised in an inverted "v" (also described as a "tent" of skin). Insert the needle $\frac{1}{2}$ way and push the plunger to expel the injection into the animal.

To give an intramuscular injection:

The needle must penetrate the muscle. Draw up the material as described above. Injections are given in the lateral region of the thigh. Gently insert the needle into the muscle, pull back slightly to make sure you are not in a vein, and then slowly push on the plunger of the syringe. When the syringe is empty, remove the needle and syringe from the animal, making sure that the needle is still attached and replace the cap to prevent injury. You may gently rub the area to comfort the dog.

Always use sterile equipment as dirty equipment could cause infections at the injection site. Remember to dispose of all needles and biological waste properly. It is important that you consult your veterinarian before giving any shots and always READ THE LABEL and FOLLOW INSTRUCTIONS. Proper animal identification and record keeping are vital components of your project. Remember to always WRITE IT DOWN.

Dog Injection Sites



Common Internal Parasites and Symptoms

Dogs, especially puppies, are susceptible to internal parasites. Parasites are small organisms that live within an animal's body and feed off the host. The most common parasites are heartworms (which live in the heart and bloodstream) and intestinal parasites (which live within the digestive tract). Medications are available to treat a pet if they become infected. There are monthly preventatives that can be given to ensure a dog does not become infected. The way an animal becomes infested is different for each type of parasite and is called the route of infection. To check for these parasites a veterinarian must take a blood or stool sample and examine it in a laboratory. A fecal sample of an infected dog will contain the eggs of the intestinal parasites, and a blood sample would have baby heartworms. If not treated, a dog can become very ill and possibly die. The time from which an animal becomes infected to the time that the parasites start reproducing is called the pre-patent period. The laboratory results will only be positive after the pre-patent period. Therefore, it is possible for a dog to show symptoms of a parasite without testing positive. Common symptoms related to these parasites are coughing, vomiting, diarrhea, and anemia.

Canine Internal Parasites		
Internal Parasite	Route of Infection	Pre-patent Period
Heartworms	Mosquito bite	6 – 8 months
Tapeworms	Ingestion of an infected flea	3 weeks
Threadworms	ingestion of egg	8 – 14 days
Roundworms	Ingestion of egg (in puppies passed from mother in the milk)	3 – 5 weeks
Hookworms	Skin Penetration or ingestion of larvae	2 – 3 weeks
Whipworms	Ingestion of egg	3 months
Coccidia	Ingestion of immature egg or eating infected rodents such as mice or squirrels	4 – 12 days
Giardia	Ingestion of infectious cysts	6 – 10 days

Gum Disease

Gum disease, also known as periodontal disease, is an inflammation of the tissue surrounding the teeth in a dog. It can be just on top or between the teeth or can extend deep into the tissue that supports the teeth. It is caused by food and bacteria building up between the teeth. When food and bacteria are left on the tissue, it can cause a buildup of calculus along the gumline. The calculus mixes with minerals from food and saliva in the mouth to form plaque. The plaque irritates the tissue, causing sores at the base of the teeth. If left untreated, reddening of the gum surrounding the teeth appears. This is an early warning sign of a periodontal disease called gingivitis. Periodontal disease is one of the most common diseases in dogs.



If gingivitis is not treated, the redness in the gums of the dog will continue to spread. As it progresses, the tissue surrounding the teeth pull away, leaving the tooth and gum separated. Periodontal disease is categorized by the amount of tissue that is pulling away from the teeth. Stage 1 is characterized by reddening of the gums without any tissue pulling away from the teeth. In Stage 2, redness is seen and about 25% of the teeth lose some of the attachment to the surrounding tissue. In Stage 3, around 30% - 45% of the teeth separate from the gum line. Finally, in Stage 4, otherwise known as advanced periodontal disease, over 50% of the teeth have separated from the gums.

You may notice one or all symptoms of gum disease in your dog. One of the first symptoms is discoloration of the teeth along the gum line. Bad breath is another common symptom that can be seen in many dogs. Gums become red and swollen and may even bleed. As the disease gets worse, dogs may start drooling extra saliva or have trouble eating as the teeth become loose. They may lose their appetite. Teeth may loosen and dogs may begin shaking their head due to sores in the mouth. Some dogs may whimper while eating or paw at their mouth; again, this is due to the sores in the gum and even in the bones of the jaw.

During stages 1 and 2, the bone supporting the teeth begins to get thinner and may start to change the shape of the tooth socket. X-rays show that during stage 3 or 4, the bone of the jaw begins to decay. Teeth may need to be pulled and treatment for bone loss may become necessary.

Treatment

In the early stages, treatment is daily brushing. Once the disease has progressed to stages 2 or 3, professional cleaning is recommended, as well as using an antibiotic to help decrease the bacteria. The antibiotic will also help rejuvenate the affected tissue. Advanced periodontal disease may require bone replacement and other more advanced treatments.

Prevention

Prevention is the best option. Regularly brush your dog's teeth, starting when it is a puppy. There are many good videos on the Internet demonstrating different methods for brushing your dog's teeth. There are many different products that can be used for toothpaste, including homemade toothpaste using baking soda.

Vaccination Schedule for Dogs

PUPPY & DOG VACCINE CHART



6-8 WEEKS	10-12 WEEKS	16-18 WEEKS	12-16 MONTHS	EVERY 1-3 YEARS*
CORE VACCINES	CORE VACCINES	CORE VACCINES	CORE VACCINES	CORE VACCINES
Distemper Adenovirus Parvovirus Parainfluenza	DHHP	DHHP Rabies	DHHP Rabies	DHHP Rabies
NON-CORE VACCINES	NON-CORE VACCINES	NON-CORE VACCINES	NON-CORE VACCINES	NON-CORE VACCINES
Bordetella	Influenza Bordetella Lyme Leptospirosis	Influenza Lyme Leptospirosis Bordetella Rattlesnake Vaccine	Influenza Lyme Leptospirosis Bordetella Rattlesnake Vaccine	Influenza Lyme Leptospirosis Bordetella Rattlesnake Vaccine

*as recommended by your veterinarian

<https://thevets.com/resources/pet-health-care/common-dog-vaccines/>

Side Effects of Dog Vaccines

Just like humans, dogs can have adverse reactions to vaccines and other medications. Side effects from dog vaccines are usually mild. However, if your dog's symptoms do not resolve quickly and include any of the severe reactions listed below, you should consult your veterinarian immediately.

Mild Vaccine Reactions

- Mild lethargy
- Low-grade fever
- Swelling and discomfort in the injection area
- Temporary loss of appetite
- Low-grade fever

Rare Vaccine Side Effects

- Vomiting
- Diarrhea

Severe Symptoms After Vaccination

If you notice any of the following symptoms in your dog after they received vaccinations, immediately contact your veterinarian:

- Difficulty breathing
- Hives
- Extreme lethargy
- Persistent vomiting or diarrhea
- Seizures
- Swelling on the face, nose, or around the eyes
- Temporary loss of appetite

Common Canine Diseases

DISEASE	TYPE OF INFECTION	TRANSMISSION ROUTE	SYMPTOMS
Canine Distemper	Viral	Airborne exposure to the virus from an infected dog or wild animal, through sneezing, coughing, or barking; shared food and water bowls and other items.	Discharge from the eyes and nose, fever, coughing, lethargy, reduced appetite, vomiting, diarrhea; neurologic signs such as walking in circles, convulsions and seizures.
Infectious Canine Hepatitis	Viral (Adenovirus)	Direct contact with materials infected with urine and nose and eye discharges of infected animals.	Decreased appetite, depression, fever, cloudy eyes, eye and nose discharge, cough. In severe cases, abdominal pain, vomiting, diarrhea, edema of the head and neck, and jaundice.
Canine Parainfluenza (CPIV)	Viral	Transmitted through the air when a dog coughs or sneezes; spreads rapidly in kennels or shelters.	Coughing, low-grade fever, nasal discharge, lack of energy, loss of appetite.
Parvovirus	Viral	Direct contact with infected dogs, contact with feces (stool) from infected dogs, or contact with virus-contaminated surfaces.	Lethargy, loss of appetite, vomiting, severe, often bloody, diarrhea, abdominal pain and bloating, fever or low body temperature (hypothermia).
Rabies	Viral	Saliva from the infected animal makes contact with the blood of another animal, usually from a bite.	Altered behavior, nervousness, aggression, disorientation, incoordination or staggering, inability to swallow, excessive drooling, paralysis, seizures
Leptospirosis	Bacterial	Spread by water or soil contaminated with animal urine. <i>Leptospira</i> enters the body through ingestion, broken skin or mucous membranes (eyes, nose or mouth).	Attacks the liver and kidneys; Common symptoms are fever, decreased appetite, vomiting, diarrhea, increased thirst and urination, lethargy or weakness, stiffness and soreness.
Bordetella (Kennel Cough)	Bacterial	By direct contact with infected animals; sneezing and coughing; contact with contaminated items, such as water, litter, and cages.	Coughing, sneezing, nasal discharge, fever, lethargy, and depression. <i>Bordetella</i> infections can be asymptomatic.
Canine Lyme Disease	Bacterial	Bite of infected blacklegged ticks.	Shifting-leg lameness, swollen lymph nodes, joint swelling, fatigue, and loss of appetite.

You can read more about the common canine diseases listed here:

<https://www.avma.org/resources-tools/pet-owners/petcare/canine-distemper>

<https://vcahospitals.com/know-your-pet/hepatitis-adenovirus-infection-in-dogs>

<https://www.merck-animal-health-usa.com/condition/canine-parainfluenza>

<https://www.avma.org/resources-tools/pet-owners/petcare/canine-parvovirus>

<https://www.vet.cornell.edu/departments-centers-and-institutes/riney-canine-health-center/canine-health-information/rabies-infections-and-prevention>

<https://www.vet.cornell.edu/departments-centers-and-institutes/riney-canine-health-center/canine-health-information/canine-leptospirosis>

<https://cwhl.vet.cornell.edu/disease/bordetella>

<https://www.vet.cornell.edu/animal-health-diagnostic-center/laboratories/serology-immunology/lyme-disease>

How to Administer Common Medications

Oral Medications

Pills – Open your dog’s mouth and drop the pill down as far back as you can, on top of and in the center of the tongue. Close the dog’s mouth and hold it to shut while stroking the throat until your dog swallows. If it licks its nose, it’s likely the dog has swallowed the pill. Giving it a treat afterwards helps ensure that the pill is swallowed. You can try hiding the pills in a treat like cheese or peanut butter. Pill plungers work well also.

Liquids – Tilt the chin up at 45 degrees and place the neck of the bottle into the cheek pouch between the molar teeth and the cheek. Seal the lips around it with your fingers and pour in the liquid. Large amounts can be given this way. Hold the muzzle firmly while the dog swallows. Bottles, syringes, and eyedroppers can be used. Your vet can help you out here.

Eye Medications

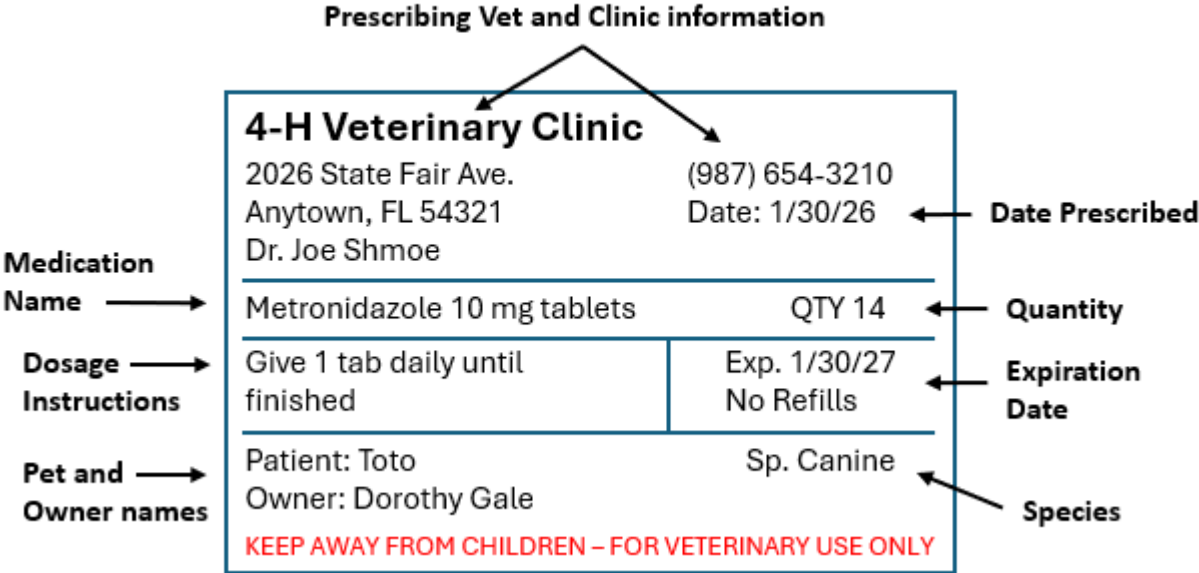
Eye medications are either in a liquid or ointment form. Cradle the dog’s head in one hand and gently use your thumb to hold down the lower eyelid. Hold the medication in the other hand and squeeze or drop the medicine in the pouch created by moving the lower lid. If you must administer eye drops to your dog and it resists, try the following trick: stand behind your dog and hold the eye open to administer the drops. This may help your dog feel more at ease and less anxious. Gently massage the eye after closing it.

Ear Medications

Ear medications are either in liquid or ointment form. Ears should be cleaned first (see previous section for method to clean). Be careful not to put the tube too far into the ear as this could hurt the eardrum (tympanic membrane). Place ear drops or ointment a few millimeters into the ear canal and then gently massage the base of the ear to distribute the medicine.

Medication Labels

Manufacturers of pharmaceutical products follow strict guidelines in labeling their products. Understanding what is on the label and how to use the information is a critical skill for livestock health care management. Using the picture shown here, study the labels on the products you routinely use on your project animals.



*A good resource for the medicine is the package insert. It has indications and contraindications for the uses of the drug.

The use of trade names in this publication is solely for the purpose of providing specific information. It is not a guarantee, warranty, or endorsement of the products named and does not signify that they are approved to the exclusion of others.

Medication Calculations

The abbreviation needed to interpret a medication label includes the following:

- SID – 1 time daily
- BID – 2 times daily
- TID – 3 times daily
- QID – 4 times daily
- EOD – every other day
- PO – medicine is given orally
- cap – capsule
- tab – tablet

<https://www.vettechprep.com/pps/UAIYOPFOVSJGGCAW7329.PDF>

Most wormers will require a repeat dose in three weeks (ex. Virbantal, Drontal plus, Panacur). Whip worm medication is repeated in 3 weeks and 3 months.

Some drugs, such as steroids, may be given with a “tapering dosage.”

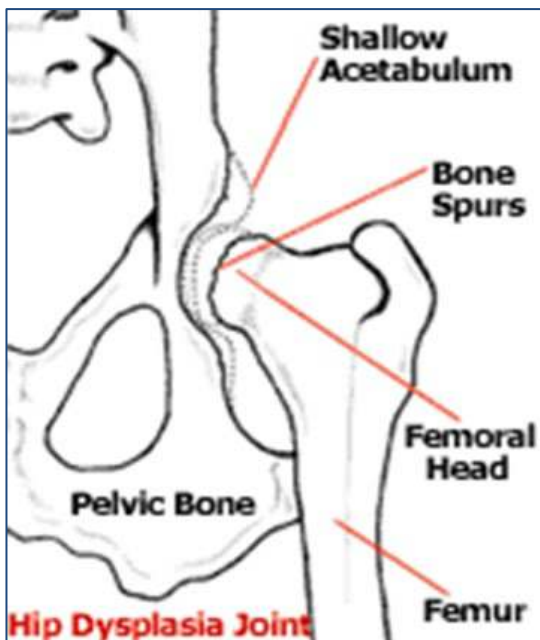
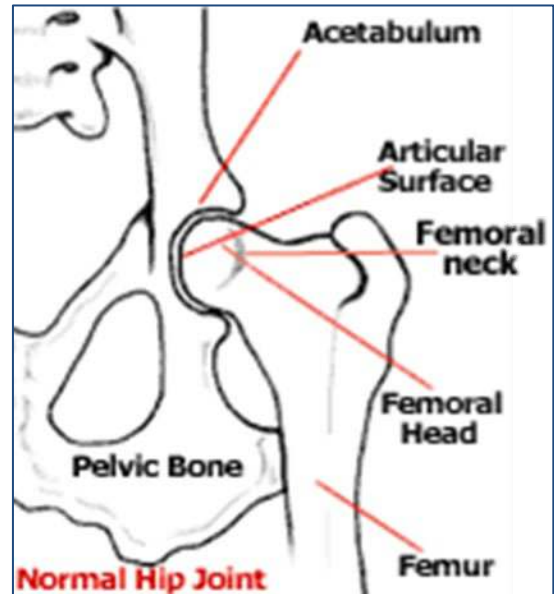
Example: A medication label that reads, “Give 1 tab BID for 5 days, then 1 tab SID for 5 days, then 1 tab EOD until gone,” would be translated as, “Give 1 tablet two times daily for 5 days, then 1 tablet one time daily for 5 days, then 1 tablet every other day until gone. The calendar below shows how to plan out the scheduled dosing for this example, assuming you begin the medication on the first day of the month.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 (1 tab AM) (1 tab PM)	2 (1 tab AM) (1 tab PM)	3 (1 tab AM) (1 tab PM)	4 (1 tab AM) (1 tab PM)	5 (1 tab AM) (1 tab PM)	6 (1 tab)	7 (1 tab)
8 (1 tab)	9 (1 tab)	10 (1 tab)	11	12 (1 tab)	13	14 (1 tab)
15	16 (1 tab)	17	18 (1 tab)	19	20 (1 tab)	21
22	23	24	25	26	27	28
29	30					

Be prepared to read a medication label and calculate when to administer medications.

Hip Dysplasia

In order for the hips of a dog to work correctly, the structure must be aligned properly. For the dog, that means that the head of the femur bone must fit and sit correctly in the socket (acetabulum) of the hipbone. Strong ligaments and connective tissue help hold the bones together; this gives the joint stability. The joint area, where the bones move against each other, has protective cartilage that helps the bones slide. When the two bones do not glide smoothly, the bones can start to rub against each other. When the bones rub each other, they start to wear away the outer layer of protective cartilage and then wear away the bone.



Hip dysplasia is caused by an abnormal joint structure and by loose joints. Muscles, connective tissue, and ligaments do not support the joint properly. This improper support causes the bones to move incorrectly and changes the joint itself. The separation of the head of the femur and the socket of the hip is called subluxations. Dogs can have hip dysplasia in one or both hips.

Risk Factors

Hip dysplasia is a genetic disease; it is more likely that offspring will develop hip dysplasia if both parents carry or have hip dysplasia. If there is no hip dysplasia in the lineage of either parent, there is less risk of hip dysplasia. Because this is a genetically inherited syndrome, there is no prevention except for careful breeding. There are several risk factors for those dogs that are prone to hip dysplasia due to their genetics. One such factor is growing too quickly during three to ten months of age. Another factor is feeding either too much or too little of the required minerals (including calcium), which contributes to dysplasia. Obesity in young and old dogs can cause hip dysplasia and osteoarthritis associated with dysplasia. Over exercising a dog with a pre-disposition for hip dysplasia at a young age, in those with a pre-disposition for hip dysplasia, may also be a risk factor for developing the syndrome.

Diagnosis

Dogs with hip dysplasia may appear to be perfectly normal but will develop arthritis on the hips. Others may show an altered gait; a “bunny hop” type of running movement often characterizes this. In severe cases, puppies may show signs of discomfort at an early age. A veterinarian, using clinical symptoms and x-rays, makes the diagnosis. Many dogs are x-rayed after the age of two, and then the x-rays are sent to Orthopedic Foundation for Animals (OFA). The OFA radiologist evaluates the hip joints for proper structure between the hip joint and head of the femur, subluxation, the condition of the socket (acetabulum), and the shape and size of the femoral head and neck (thigh bone).

Treatment

Once it is determined that a dog has hip dysplasia, proper management of the dog should include good nutrition, appropriate exercise, and weight management. Keep the sleep areas warm to help those with arthritis. Other factors that can aggravate pain and arthritis are using stairs and jumping into cars. Oral supplements and some drugs have been proven to help manage osteoarthritis. There are also several types of surgeries that can be performed to help dogs, depending on the need of the individual dog.