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Dog Bloat: Causes, Signs, and Symptoms

Learn to recognize the signs of canine bloat—it can be deadly for far too many dogs.

By Shannon Wilkinson

Imagine seeing your dog exhibit some strange symptoms, rushing him to the vet within minutes, only to have the vet proclaim his case to be hopeless and recommend euthanasia. For too many pet parents, that's the story of bloat in dogs, an acute medical condition characterized by a rapid accumulation of gas in the stomach.

Large- and giant-breed dogs, especially those with deep chests, are at greatest risk of bloat, but dogs of any size can be stricken. Nervous dogs and underweight individuals are also more likely to bloat than calm or overweight dogs.
In fact, that was exactly the case with Remo, a Great Dane owned by Sharon Hansen of Tucson, Arizona. "He was at the vet's in under seven minutes," says Hansen, in describing how quickly she was able to respond to Remo's symptoms. He had just arisen from an unremarkable, hour-long nap, so Hansen was stunned to see Remo displaying some of the classic symptoms of bloat, including restlessness, distended belly, and unproductive vomiting.
Despite Hansen's quick action, Remo's situation rapidly became critical. Radiographs showed that his stomach had twisted 180 degrees. Remo was in great pain and the vet felt the damage was irreversible. Hansen made the difficult decision to have Remo euthanized at that time.
Canine bloat, or more technically, gastric dilatation and volvulus (GDV), is a top killer of dogs, especially of deep-chested giant and large breeds, such as Great Danes and Standard Poodles. A study published in Veterinary Surgery in 1996 estimated that 40,000 to 60,000 dogs in the United States are affected with GDV each year with a mortality rate of up to 33 percent.
Gas accumulation alone is known as bloat, or dilatation. The accumulation of gas sometimes causes the stomach to rotate or twist on its axis; this is referred to as torsion or volvulus. Bloat can occur on its own, or as a precursor to torsion. In this article, to simplify the terms, bloat and GDV are used interchangeably.
Both conditions can be life-threatening, although it often takes longer for a straightforward gastric dilatation without volvulus to become critical. "Bloats without torsion can last for minutes to hours, even days in low-level chronic situations, without it becoming life-threatening. But with torsion, the dog can progress to shock rapidly, even within minutes," explains Alicia Faggella DVM, DACVECC, a board-certified specialist in veterinary emergency and critical care.

"A dog can go into shock from bloat because the stomach expands, putting pressure on several large arteries and veins. Blood does not get through the body as quickly as it should," continues Dr. Faggella. In addition, the blood supply gets cut off to the stomach, which can cause tissue to die, while toxic products build up.

While some less acute cases of bloat may resolve themselves, it often takes an experienced veterinarian to know just how serious the problem may be, and whether surgical intervention is required to save the dog's life.

Dog Bloat is Frighteningly Deadly
Various studies have estimated the mortality rate for dogs who have experienced an episode of GDV, and while the results varied, they were all frighteningly high – from about 18 percent to more than 30 percent. The rates used to be much higher, however.

"Veterinarians over the past two decades have reduced dramatically the postoperative fatality rate from gastric dilatation-volvulus from more than 50 percent to less than 20 percent by using improved therapy for shock, safer anesthetic agents, and better surgical techniques," says Lawrence Glickman, VMD, DrPH, and lead researcher on a number of studies related to GDV at Purdue University in West Lafayette, Indiana.

In many acute cases of GDV, surgery is the only option to save the life of the animal. In addition to repositioning the stomach, it may also be "tacked" to the abdominal wall in a procedure called gastropexy. While dogs who have had gastropexy may experience gastric dilatation again, it is impossible for the stomach to rotate, as in volvulus or torsion.
What Causes Bloat in Dogs?
Theories about what causes GDV abound, including issues related to anatomy, environment, and care. Research from Purdue University, particularly over the past 10 years, has shown that there are certain factors and practices that appear to increase the risk of GDV, some of which fly in the face of conventional wisdom.
"We don't know exactly why GDV happens," says Dr. Faggella. Some people do all of the "wrong" things, and their dogs don't experience it, she says, while some do all of what we think are the "right" things, and their dogs do.
The most widely recognized and accepted risk factor is anatomical – being a larger, deep-chested dog. When viewed from the side, these dogs have chest cavities that are significantly longer from spine to sternum, when compared to the width of the chest cavity viewed from the front.

This body shape may increase the risk of bloat because of a change in the relationship between the esophagus and the stomach. "In dogs with deeper abdomens, the stretching of the gastric ligaments over time may allow the stomach to descend relative to the esophagus, thus increasing the gastroesophageal angle, and this may promote bloat," says Dr. Glickman.

But it isn't just large- and giant-breed dogs that can bloat; smaller breeds do as well. "I've seen Dachshunds, Yorkies, and other small Terrier breeds with bloat," says Dr. Faggella. She emphasizes that all dog guardians should be familiar with the signs of bloat, and be ready to rush their dog to the vet if any of the symptoms are present.

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The deadline for the March issue is February 10

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Likelihood of an incident of bloat seems to increase with age. Purdue reports that there is a 20 percent increase in risk for each year increase in age. This may be related to increased weakness, over time, in the ligaments holding the stomach in place, Dr. Glickman explains.

Another key risk factor is having a close relative that has experienced GDV. According to one of the Purdue studies that focused on nondietary risk factors for GDV, there is a 63 percent increase in risk associated with having a first degree relative (sibling, parent, or offspring) who experienced bloat.

Personality and stress also seem to play a role. Dr. Glickman's research found that risk of GDV was increased by 257 percent in fearful dogs versus nonfearful dogs. Dogs described as having a happy personality bloated less frequently than other dogs. "These findings seem to be consistent from study to study," adds Dr. Glickman.

Dogs who eat rapidly and are given just one large meal per day have an increased susceptibility to GDV than other dogs. The Purdue research found that "for both large- and giant-breed dogs, the risk of GDV was highest for dogs fed a larger volume of food once daily."

The ingredients of a dog's diet also appear to factor into susceptibility to bloat. A Purdue study examined the diets of over 300 dogs, 106 of whom had bloated. This study found that dogs fed a dry food that included a fat source in the first four ingredients were 170 percent more likely to bloat than dogs who were fed food without fat in the first four ingredients. In addition, the risk of GDV increased 320 percent in dogs fed dry foods that contained citric acid and were moistened before feeding. On the other hand, a rendered meat meal that included bone among the first four ingredients lowered risk by 53 percent.

Another study by Purdue found that adding "table foods in the diet of large- and giant-breed dogs was associated with a 59 percent decreased risk of GDV, while inclusion of canned foods was associated with a 28 percent decreased risk." The relationship between feeding a home-prepared diet, either cooked or raw, hasn't been formally researched.

Anecdotally, however, many holistic vets believe that a home-prepared diet significantly reduces the risk of bloat. "I haven't seen bloat in more than five years," says Monique Maniet, DVM, of Veterinary Holistic Care in Bethesda, Maryland. She estimates that 75 to 80 percent of her clients feed a raw or home-cooked diet to their dogs.

Dr. Faggella also noticed a difference in the occurrence of bloat while in Australia, helping a university set up a veterinary critical care program. "I didn't see bloat as commonly there [as compared to the US]," she says. They feed differently there, with fewer prepared diets and more raw meat and bones, which may contribute to the lower incidence of GDV, she adds.

It is often recommended that limiting exercise and water before and after eating will decrease the risk of bloat. However, in one of the Purdue studies, while exercise or excessive water consumption around meal time initially seemed to affect likelihood of GDV, when other factors were taken into account, such as having a close relative with a history of GDV, in a "multivariate model," these factors were no longer associated with an increased risk of bloat.

Or, more simply put, "there seems to be no advantage to restricting water intake or exercise before or after eating," says Dr. Glickman.

Preventing Dog Bloat

Because the theories and research on what causes bloat aren't always in agreement, the ways to prevent GDV can conflict as well. One thing that everyone can agree on, though, is that feeding smaller meals several times a day is the best option for reducing the risk.
One of the top recommendations to reduce the occurrence of GDV from the Purdue researchers is to not breed a dog that has a first-degree relative that has bloated. Results of their study suggest that "the incidence of GDV could be reduced by approximately 60 percent, and there may be 14 percent fewer cases in the population, if such advice were followed."

In addition, Glickman says they recommend prophylactic gastropexy for dogs "at a very high risk, such as Great Danes. Also, we do not recommend that dogs have this surgery unless they have been neutered or will be neutered at the same time."

The concern about performing a gastropexy on an unneutered dog is that it "might mask expression of a disease with a genetic component in a dog that might be bred."
While gastropexy hasn't been evaluated in its ability to prevent GDV from happening the first time, research has shown that just five percent of dogs whose stomachs are tacked as a result of an episode of GDV will experience a repeat occurrence, whereas up to 80 percent of dogs whose stomachs are simply repositioned experience a reoccurrence.

Phazyme: The Controversial Gas-Reliever

After Remo's death, Sharon Hansen learned that some large-breed dog owners swear by

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an anti-gas product called Phazyme for emergency use when bloat is suspected. Phazyme is the brand name of gelcaps containing simethicone, an over-the-counter anti-gas remedy for people. GlaxoSmith-Kline, maker of Phazyme, describes it as a defoaming agent that reduces the surface tension of gas bubbles, allowing the gas to be eliminated more easily by the body.

Less than a year and a half later, Hansen had an opportunity to try the product when her new rescue dog Bella, a Dane/Mastiff mix, bloated. "Bella came looking for me one afternoon, panting and obviously in distress," explains Hansen, who immediately recognized the signs of bloat. Hansen was prepared with caplets of Phazyme on hand. "I was giving her the caplets as we headed out to the car," says Hansen. Almost immediately, Bella began to pass gas on the short ride to the vet. "She started passing gas from both ends," Hansen says. By the time they arrived at the vet, Bella was acting much more comfortable, and seemed significantly less distressed.

At the vet's office, gastric dilatation was confirmed, and luckily, there was no evidence of torsion. Hansen credits the Phazyme for reducing the seriousness of Bella's episode. This is a generally accepted practice among guardians of bloat-prone dogs, but not all experts agree with it.

Dr. Faggella cautions against giving anything by mouth, as it could cause vomiting, which could lead to aspiration. "If you suspect bloat, simply bring your dog to the vet immediately. The earlier we catch it, the better," she says.

Dr. Nancy Curran, DVM, a holistic vet in Portland, Oregon, agrees that trying to administer anything orally could lead to greater problems. However, she suggests that Rescue Remedy, a combination of flower essences that is absorbed through the mucous membranes of the mouth, may help ease the shock and trauma. "Rescue Remedy helps defuse the situation for everyone involved. It won't cure anything, but it can be helpful on the way to the vet," she says, recommending that the guardian take some as well as dosing the dog.

Holistic Prevention of Dog Bloat

"We may be able to recognize an imbalance from a Chinese medical perspective," says Dr. Curran. She's found that typically dogs prone to bloat have a liver/stomach disharmony. Depending on the dog's situation, she may prescribe a Chinese herbal formula, use acupuncture, and/or suggest dietary changes and supplements to correct the underlying imbalance, thereby possibly preventing an episode in the first place.

Dr. Maniet also looks to balance a dog's system early on as the best form of prevention. Each of her patients is evaluated individually and treated accordingly, most often with Chinese herbs or homeopathic remedies.

Both holistic vets also recommend the use of digestive enzymes and probiotics, particularly for breeds susceptible to canine bloat, or with existing digestive issues. "Probiotics and digestive enzymes can reduce gas, so I'd expect that they will also help reduce bloat," explains Dr. Maniet.

Another avenue to consider is helping your fearful or easily stressed dog cope better in stressful situations. While no formal research has been conducted to confirm that this in fact would reduce the risk of bloat, given the statistics that indicate how much more at risk of GDV fearful dogs are, it certainly couldn't hurt. Things to consider include positive training, desensitization, Tellington TTouch Method, calming herbs, aromatherapy, or flower essences.

While there is an abundance of information on how to prevent and treat bloat, much of it is conflicting. The best you can do is to familiarize yourself with the symptoms of GDV and know your emergency care options. While it may be difficult to prevent completely, one thing is clear. The quicker a bloating dog gets professional treatment the better.

-Shannon Wilkinson, of Portland, Oregon, is a freelance writer, life coach, and TTouch practitioner.

Ed's Note: We usually think of this occurring in large breeds. However, all breeds can succumb to bloat. Unfortunately, one of my Miniature Schnauzers had it and was not recognized by the vet until it was too late.

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Dog Owners Have a Decreased Risk of Death, Study Finds

By Aly Semigran

There are a million great things about being a dog owner, but this one is pretty high up there: owning a dog may actually help you live longer.

According to a recent study published in the *Journal of Scientific Reports*, dogs may be beneficial in "reducing cardiovascular risk in their owners by providing social support and motivation for physical activity."

The Swedish-based study also found that dog ownership in both single- and multi-person households had its respective benefits. For instance, people who live alone and have dogs can decrease their risk of death by 33 percent and their risk of cardiovascular-related death by 36 percent (compared to single people who do not have pets).

In multi-person households, dog owners have an 11 percent decreased risk of death and a 15 percent lower chance of death due to cardiovascular disease, compared to non-dog households.

So what makes having a dog such a health benefit? Researchers attribute the benefits to the fact that dogs can alleviate "psychosocial stress factors, such as social isolation, depression and loneliness," as well as promote increased physical activity.

Though the study does not speak for the dog-owning populations outside of Sweden, the numbers can only be a boost of confidence for pet parents worldwide.

The Leptospirosis Vaccine: Why It Doesn't Work

By Patricia Jordan DVM

Have you had a veterinarian strongly urge you to vaccinate your dog for Leptospirosis?

Or offer you one of those vaccine cocktails like DHLPP and not really telling you what's in it? It contains Distemper, Parvovirus, Hepatitis or Adenovirus, Parainfluenza – and yes, the "L" is Leptospirosis.

And if you've succumbed to the pressure and allowed your vet to give your dog the leptospirosis vaccine, you possibly have been lulled into a false sense of security.

Many vets are afraid of Leptospirosis, for a couple of reasons.

Some of them have seen dogs become very ill with the disease while others worry because it's a zoonotic disease, meaning it can be contracted by humans.

But leading immunologists such as Dr Ronald Schultz do not recommend the Leptospirosis vaccine. Dr Schultz does not vaccinate his own dogs even though he lives in on a farm in a Leptospira endemic area.

Infectious disease expert Dr Richard Ford has also stated publicly that despite living in an endemic area, he would not vaccinate his dog. Likewise, Dr Jean Dodds does not advise the use of the Leptospirosis vaccine.

So it seems that, depending on who you ask, you'll find vets who are either for or against the Leptospirosis vaccine. This means it's a good idea to learn more about Leptospirosis because ultimately, it's your choice whether or not he receives the vaccine.

(Download our Vaccination Guide to prevent over vaccination of your dog.)

What Is Leptospirosis?
Leptospirosis is an infection caused by Leptospira bacteria.

Within the genus Leptospira there are 20 different species and more than 200 different serovars (a group of closely related microorganisms with a common set of antigens).

Dogs can catch Leptospira bacteria from water or soil that is contaminated with infected urine from rodents and other wild animals.

If your dog spends a lot of time playing in ponds or lakes or drinking out of puddles or standing water, he may be at risk, depending on the incidence of Leptospirosis in your area.

Leptospirosis is most commonly found in Hawaii, the west coast (especially California, Oregon and Washington), the upper Midwest, parts of Texas, Colorado and the mid-Atlantic coastal region. Leptospirosis also occurs in the southeastern US.

Healthy dogs who come in contact with the bacteria may never exhibit symptoms. In affected dogs, symptoms may start to occur within eight to ten days after exposure, and include fever, vomiting, diarrhea, muscle pain, blood in the urine, lack of appetite and lethargy.

In more serious cases, jaundice – a yellowing most easily seen in the whites of the eyes – can occur.

Humans can contract Leptospirosis through contact with the urine of an infected animal, but because there are only 100 to 200 cases per year in the US, the CDC does not even consider it a reportable disease.

Thirty states do report human cases and the highest prevalence of human infection is in Hawaii.

The disease does occur more in tropical climates where there is likelihood of standing water or flooding; rat infestations in densely populated urban areas are also a factor. In most cases, Leptospirosis is highly treatable when recognized early.

Conventional treatment with antibiotics (typically Doxycycline) usually takes quick effect but aren't always necessary if working with a homeopathic vet; homeopathy is very successful in treating lepto.

However it's important to note that there is a terrible peracute (very sudden) form of the disease where animals go into rapid shock and die.

However, very sadly, neither vaccination nor antibiotics will save these cases.

The Leptospirosis Vaccine
There are many problems with the Leptospirosis vaccine, which is why many vets stay away from it. The two most important strikes against it are …

It does not provide effective immunization
It has an extremely high rate of adverse reactions
Ironically, vaccinated animals can also shed the bacteria and infect humans.

The Leptospirosis Vaccine Isn't Efficient
Unfortunately, many vets recommending Leptospirosis vaccines rely on information provided by the drug companies that make the vaccines, and, as a result, are not aware that the vaccine does not confer immunity – despite the fact that even the AVMA guidelines warn that 30% of dogs may not respond to the vaccine.

A drug company sponsored article by Dr Richard Goldstein of Cornell on the most recent lepto information states that the vaccine "appears" to work but, admits this is based on data provided by the company that makes the vaccine.

He also says the vaccine provides a year's worth of protection – but this again is based on drug com-pany data.

Testing was by challenge only and failed to deliver serological (antibody) proof, so I am not inclined to accept it as proving anything.

There are many cases on record of vaccinated dogs contracting the disease, both in the US and abroad.

In the US, several veterinary clinics (one a referral hospital) have informed me of cases of vaccinated dogs still contracting Leptospirosis.

In Hong Kong, it's common for vaccinated dogs to die from lepto. And the UK organization Canine Health Concern conducted a survey in which many dog owners reported that their vaccinated dogs were still getting lepto.

Leptospira vaccines appear to have little effect on transmission of the disease in animal populations either.

Why is this?
Either the vaccine doesn't work, or there are serovars causing the disease that the vaccine doesn't cover.

Given the high number of lepto serovars and the fact that there are so many strains of the disease that are not covered by the vaccines, the latter seems likely.

In the US, serovar shift is the excuse given for the vaccine not working. Theories that the vaccines are responsible for serovar shift in the first place have never been confirmed.

If you even consider vaccinating your dog for Leptospirosis (and I hope you won't after reading this article), it's extremely important that you find out every year which serovar is responsible for Leptospirosis infections in your area, using your state's public health records.

Make sure the vaccine is an exact DNA match for the pathogenic strain your dog will encounter, or else you'll be subjecting your dog to a

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great deal of pointless risk.

The presence of many more nonpathogenic Leptospira means that finding an exact match with the vaccine can be extremely challenging.

Leptospira vaccines for dogs are now available in two forms:

The original two-way vaccines contained only the L. canicola and L. icterohaemorrhagiae serovars;
The more recent four-way vaccines also contain L. grippotyphosa and L. pomona.
The four-way vaccine is the recommended choice because L. canicola and L. icterohaemorrhagieae infections appear to be in decline, while L. grippotyphosa is on the rise.

Two additional serovars now identified as causing infection, L. bratislava and L. automnalis, are not included in current vaccines.

It would be extremely expensive to monitor the environment for the presence of specific serovars, so because the disease is scarce in humans, no such program currently exists.

Finally, even if the vaccine is a match for the serovars, any protection it offers is very short lived.

Because of this, many vets recommend revaccinating every six months for dogs at high risk, although Dr Schultz has said that in order to have antibody protection you'd have to vaccinate with the four-way vaccine four times a year.

(Find out if you should be vaccinating your dog. Click here for our Vaccination Guide.)

Source Of Human Infection
Once vaccinated, your dog can shed the Leptospira microbes, becoming a source of infection for you and your family.

I know several cases where the canine vaccine was undoubtedly the cause of a human contracting the disease.

One such case involved a duck hunter in California.

The state failed to find any Leptospira in bodies of water he'd frequented, suggesting it was highly probable he was infected by his vaccinated dog.

Leptospirosis Vaccine Side Effects
Bacterin vaccines like Leptospirosis and Lyme are very risky.

While experts might be refusing to use them on their own dogs because the risk of infection isn't that high, it's more likely due to the great number and significance of adverse reactions.

There are documented cases of the antigens for both Leptospira and Lyme disease vaccines creating the same diseases we are trying to prevent with the vaccination.

In fact, some dogs vaccinated with Leptospirosis die of renal failure within 48 hours – exactly the same type of pathology that the actual disease could create.

I have documented several cases of tumors, especially from the "whombo-combo" vaccines that include Leptospirosis.

I also see these combinations causing mast cell disease and cytokine storms (an overreaction of the immune system in which too many immune cells are activated in a single place, creating the potential for damage to body tissues and organs).

Autoimmune disease can also result from bacterin vaccination use. A significant additional risk is that the Leptospirosis vaccines all contain aluminum adjuvant.

Aluminum is a grade three (out of four) carcinogen. (The World Health Organization's International Agency for Research on Cancer declared these adjuvants carcinogenic in 1999).

Not surprisingly, the blue-grey aluminum foreign body has been found in tumor biopsies of vaccinated dogs with cancer.

When veterinarians advocate these vaccines, are they aware of the potential for these serious, sometimes fatal adverse events, most of which go unreported? If not, the client is not getting full disclo-sure.

What does "informed consent" even mean in these instances?

The dangers of the lepto vaccine are apparent in the double standard.
While our dogs are given the lepto vaccine, there is no Leptospirosis vaccine licensed for humans in the US. Some of the reasons for this are:

Unacceptable side effects
Incomplete and short lived protection
Increased risk of developing autoimmune disease
Even if vaccination partially protects, it will not prevent leptospiuria (Lepto-spira in the urine) so the disease can still be spread in the environment
In Leptospirosis, the signs of disease are often vague and nonspecific, and they don't necessarily correlate to the serovar of infection.
There are many different presentations one might find in a dog with a pathogenic strain of Leptospirosis.

(Is your dog experiencing side effects from his vaccinations? We have something for that … Click here)

Leptospirosis Signs And Symptoms
Infection results in illness of varying severity, depending on the strain, geographic location and host immune response.

Some dogs display mild or no signs of disease, while others develop severe illness or death, often as a result of kidney injury.

In general, veterinarians should suspect Leptospirosis dogs with signs of:

kidney or liver failure
uveitis
pulmonary hemorrhage
acute febrile illness
or abortion.
Dogs with acute renal failure may show polyuria (excessive urine production), polydipsia (excessive thirst), dehydration, vomiting, diarrhea, lack of appetite, lethargy, abdominal pain or some combination of these signs.

Oliguria or anuria (little or no urine production) and hematuria (blood in the urine) also may occur.

Fever occurs early in the course of illness and may be accompanied by shivering, generalized muscle tenderness and reluctance to move.

Dogs may also show signs of liver failure, including jaundice.

Other reported lepto symptoms include conjunctivitis, uveitis and acute respiratory distress causing tachypnea, dyspnea or Leptospiral pulmonary hemorrhage syndrome (LPHS), which has been reported most frequently in dogs in some parts of Europe.

LPHS appears to have an immune-mediated basis and causes high mortality.

Signs of pancreatitis have been detected in some dogs by abdominal ultrasound.

Meningitis can occur in humans but has not been documented in dogs.

Cardiac damage occurs in human patients and ECG alterations suggesting myocardial damage can occur in dogs.
Miscarriage has also occurred in dogs after spread of the serovar across the placenta.

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Patients suffering from the peracute form of the disease may exhibit severe symptoms such as rapid breathing and rapid, irregular pulse, coughing up of blood, tarry feces, nosebleed and petechial hemorrhage (red or purple spots on the skin).
They may be reluctant to move and very sensitive to pain or touch, and have enlarged lymph nodes.

Peracute infections usually move so fast that treatment is impossible to deliver in time.

Even with intensive care it is extremely unlikely the dog can be saved.

Diagnosis And Lab Testing
The very wide range of symptoms makes Leptospirosis diagnosis problematic and it can also be difficult to confirm the disease through laboratory testing.

Blood, urine, serum, or other clinical specimens are usually tested.

Other diagnostic methods are available including culture, microscopic agglutination test (MAT), immunofluorescence, darkfield microscopy, other serologic tests, and real-time polymerase chain reaction (PCR). The MAT is considered the gold standard serologic test to confirm Leptospirosis.

Because it is a difficult test to maintain, CDC is the only laboratory in the United States that offers the MAT for Leptospirosis testing for humans.

However, if the patient has been vaccinated, MAT testing is useless.
The serum can no longer be a useful record for MAT diagnostic tests because the serum antibody titer from the vaccine is indis-tinguishable from the antibody caused by natural infection.

Multiple serovar vaccines also lead to difficulty in determining which serovar is the serovar of infectivity.
Due to molecular mimicry with antigens, the identification of disease presence is complicated by cross reactivity with other different disease organisms such as syphilis, Lyme, Legionnaires, HIV and autoimmune disease. PCR testing is therefore the preferred diagnostic method, offered by Oregon State Veterinary Diagnostic Laboratory and IDEXX Laboratories.
It is considered just as sensitive and specific as culture but significantly faster and more reliable.
It has an obvious advantage over serology in the early stages of infection, before antibodies have yet developed.

It is also useful in dogs where MAT testing has yielded negative results but Leptospirosis is still suspected. However, PCR testing must be done before any treatment is given.

Just one dose of Doxycycline or another antibiotic will convert a PCR positive to a negative, even in the face of renal failure.

Isolation of leptospires from a clinical specimen is confirmatory, but lacks sensitivity and specificity, as some pathogenic and non-pathogenic strains fall into the same serovar, and growth may be slow.

Immunofluorescence is a useful diagnostic measure when performed as immuno-histochemistry for antigen detection in tissues; however, it is typically performed on tissues obtained after death.

Darkfield microscopy is timelier relative to the stage of disease, but lacks sensitivity and specificity.

Is Your Dog At Risk?
The first thing to know is whether Leptospirosis is endemic in the places your dog frequents.

You can research this through your local public health department; your vet also should also know the incidence of Leptospirosis infection in your area.

Leptospirosis is most likely to occur in a warm moist environment, during rainy seasons in temperate climates and in tropical and subtropical climates.

The organism survives better in stagnant water rather than flowing, and can live 180 days in wet soil or marshy areas, and longer in standing water.

Transmission is most common through direct contact with infected urine or indirectly through vegetation, soil, food, water or bedding contaminated with infected urine.
Dense animal population in kennels and urban settings increases the chance of exposure to infected urine.
Exposure to rodents and other wildlife is an additional risk factor.
Dogs at risk of contracting Leptospirosis are usually outdoor animals or hunting dogs.
A healthy immune system is the key factor in your dog's ability to resist disease

Natural Leptospirosis Prevention
Because of its lack of efficacy and the very great risk of adverse reactions, Leptospirosis vaccination is not the answer.

In truth, the germ is not the problem: a healthy immune system is the key factor in your dog's ability to resist disease.
The foundation of a strong immune system is in the gut, so start by giving your dog the best nutrition you can, preferably in the form of a species appropriate raw diet.

The Most Outlandish Way Your Dog Mirrors Your Emotions

By Dr. Karen Shaw Becker

If like most doggy devotees you're absolutely sure your furry pal can read your mind, you'll be pleased to know you're right. Almost. As it turns out, according to a recent study, dogs can sense our emotions using of all things, their adorable noses. And once your canine companion sniffs out your mood, he adjusts his own accordingly.

It's already scientifically proven that dogs can see and hear human emotions, but until now, no one knew for certain that they also use their incredible sense of smell to inform them about how their humans are feeling. It actually makes perfect sense when you remember that unlike people who typically respond most often to what they see, dogs lead with their noses and respond most often to what they smell.

Study Participants: 8 Sweaty Humans and 40 Retrievers

A team of university researchers in Italy and Portugal set out to answer this question: "Do human body odors (chemosignals) produced under emotional conditions of happiness and fear provide information that is detectable by pet dogs (Labrador and Golden retrievers)?"[1]

For the study, eight human study volunteers watched a 25-minute video designed to provoke emotional states of either fear or happiness. The volunteers' sweat was collected on pads as they watched the video, and then the samples were pooled to obtain composite "fear sweat" and "happiness sweat" samples. There was also an unscented control sample.

The 40 study dogs were Labs and Goldens fitted with heart rate monitors. Each dog was placed in a small room with his owner and a stranger who had not provided a sweat sample. The two people were seated, reading magazines and not purposely interacting with the dog. The samples (either fear or happy sweat, or no scent) were diffused into the room from an open vial containing the sweat pads. The dogs were able to sniff the vial itself, but they weren't able to directly touch the pads.

Behind the scenes, for five-minute periods the researchers evaluated the dogs' heart rate, body language, movements toward and away from the owner and the stranger, and stress-

EMOTIONS.....cont on p. 7

EMOTIONS...from p. 6

related behaviors. To goal was to learn whether the dogs would show a consistent set of behaviors in response to the three conditions.

Dogs Are Stressed by the Smell of Human Fear and Become Fearful in Response

The dogs exposed to the happy sweat sample had fewer and shorter interactions with their owners, and more interactions with the strangers in the room. This indicates the dogs felt relaxed enough to check out strangers, and didn't need to seek reassurance from their owners.

In contrast, the dogs exposed to the fear sweat sample displayed more frequent and longer-lasting stress-related behaviors, in some cases, for the entire five-minute period. These dogs also sought out their owners rather than the strangers, indicating they were looking for reassurance because they felt stressed. The dogs exposed to the fear sweat sample also had consistently higher heart rates than the dogs exposed to the happy sweat sample and the control sample.

"While the dogs were clearly responding emotionally to the scent of fear," writes dog expert Stanley Coren, Ph.D., *"it seemed as though their response mirrored the emotion that they were detecting in that they were acting in a fearful manner themselves. There was no evidence of aggression toward either the owner, the stranger, or the scent dispensing apparatus."*[2]

A bigger question for me, as a veterinarian, is how long-term exposure to human stress and emotional imbalances in the home (fear, anger, frustration, etc.) impact our pets' health without our knowledge.

I just finished filming a dog cancer documentary with Rodney Habib, and almost every researcher we interviewed brought up the role of stress in canine disease, a topic that hasn't been studied. This Italian study brings up the question of how negative human emotions play into health and disease patterns in pets.

Rodney and I are so intrigued by this research that we're meeting up with the authors of this article in Italy in a few weeks to ask this very question; could human stress impact animal health? I'll keep you posted on what we discover.

Why It's so Important to Let Your Dog Sniff

Dogs are brilliant sniffers by design, and I often wonder if pet parents truly understand their dog's need to explore the world with their nose.

Some dog owners seem in such a hurry to get their walks over with, they don't give their pets a chance to satisfy their urge to sniff their environment.

Here's some excellent insight from animal behaviorist Marc Bekoff, Ph.D. on the potential for sensory deprivation and stress in dogs who aren't allowed adequate sniffing opportunities:

"Being smell-blind can be aversive to dogs. My recommendation is to let dogs sniff; let's not hijack one of their vital connections to the world. Let them sniff to their nose's content when they're tethered on a leash, or when they're walking and hanging out with friends and others and running freely.

As mentioned, not allowing dogs to exercise their nose and other senses could be a form of sensory deprivation that robs them of information they need to figure out what's happening in their world. Being smell-blind can indeed be stressful to dogs because they need odors and other information to assess what's happening around them."[3]

Now, not every walk you take with your dog has to be a leisurely sniff-fest. But at least once a day, let your canine BFF sniff to his heart's content and feel good that you're letting your dog be a dog! Evaluating the emotional environment of your home is also a good idea. I have a hunch future research will validate what we very much suspect is true — that pets in happy homes tend to be healthier and more balanced than pets who live in stressed or sick homes.

Specialty Wins

Central Florida MSC

December 15, 2017
No Sweeps
Regular Classes
Judge: Brian C. Bogart

WD...Top Gun Maverick/ Smith
RWD...Destineez Avenger/Shelton
WB...Tajinastes Gomera/Alvarez
RWB...Blackwitch El Nina/Beagle
BOB...GCHS Minuteman Justified/ Boechler/McMillan
BOW...Tajinastes Gomera/Alvarez
Sel Dog...Ch. Beauideal Bombay Sapphire/Sarvas
Sel Bitch...Ch. Destineez Caged Heat at Char N Co/Stukey
Best Puppy...Belle Terre Lucy in the Sky with Diamonds/Murphy
BBBE...Blackwitch El Nina/Beagle

So long, farewell,
auf wiedersehen,
adieu...adieu...adieu...
to you and you ...
who have not paid your dues.....DUES ARE OVERDUE....

Make checks payable to AMSC and send to Bonnie Keyes

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or pay through PayPal

AMSCOPE

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UPCOMING SPECIALTIES

Gateway MSC March 2, 2018
Regular Classes: Mrs. Boutwell
No Sweepstake classes offered
Obedience: Ms. Pat Kasten

AMSC SPECIALTIES

Roving specialty-Perry GA. April 15,2018
Regular Classes:Terry Stacy
Sweeps: Ken Allen

Great Western June 24,2018
Regular Classes: John Constantine
Sweeps: Kim Griffin

Montgomery County October 7, 2018
Regular Classes: Joan Huber
Sweeps: Susan Atherton

Schnauza Palooza April 6,2019
Regular Classes - David Kirkland
Sweepstakes Classes - Patricia O'Brien

Great Western 2019
Regular Classes - Steve Hayden
Sweepstakes Classes - Cheryl Coffman

Montgomery County 2019
Regular Classes - Brian Bogart
Sweepstakes Classes - Carla Nickerson

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Password is:
Schnauzer2015

Here's the link to the Members Section:

http://amsc.us/members-log-in

Please write down or save the User Name and Password as there is quite a bit of pertinent information in our Members Section.

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