

VETgirl VETERINARY eMAGAZINE

BEAT

ISSUE 26 OCTOBER 2025

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TOPICAL THERAPIES FOR WOUND HEALING IN HORSES

Holly Roessner DVM, DACVS-LA
North Carolina State University, Raleigh, NC

Wounds are a common part of equine practice. If possible, primary closure is preferred to result in a better functional and cosmetic outcome. Successful primary closure results in shorter healing times and decreased costs. Unfortunately, primary closure may not always be possible, especially if there is significant tissue loss or infection present. Alternatively, primary closure can fail due to excessive tension, motion, or underlying infection, resulting in the need for second intention wound healing. Many topical therapies exist to aid in this process, with three main goals in mind: maintaining a moist environment, reducing the antimicrobial load, and enhancing the wound environment to support the phases of wound healing.

Wound healing is comprised of four phases:

1. Hemostasis
2. Inflammation
3. Proliferation
4. Maturation or Remodeling

These phases overlap and total timing depends on multiple factors, including wound size, presence of infection, and immune status of the patient.

- **Phase 1:** Hemostasis lasts up to 48 hours, characterized by vasoconstriction and clotting factors and platelets working to prevent further blood loss from damaged vessels.
- **Phase 2:** Inflammation lasts up to 7 days in acute wounds but can last longer in chronic wounds. The inflammatory phase is characterized by an influx of white blood cells to clear bacteria and debris. Clinically this is manifested by heat, pain, and edema around the wound.
- **Phase 3:** Proliferation lasts days to weeks, with the primary role of granulation tissue formation. Additionally, the wound bed experiences angiogenesis, contraction, and epithelialization.
- **Phase 4:** Maturation/Remodeling can last weeks to years and comprises the formation of scar tissue. New tissue will become stronger and more flexible over time but always remains weaker and less elastic compared to normal skin.

Struggling with how best to manage wounds in your equine patients? In this VETgirl Webinar, **"Topical Therapies for Wound Healing in Horses,"** Dr. Holly Roessner, DACVS-LA, reviews practical approaches to second intention healing, infection management, and topical therapy selection to optimize outcomes. Missed the webinar? Watch the replay **HERE** or check out the highlights below!

Wound infection is common in equine patients due to a high likelihood of contamination at the time of injury. Additional risk factors for infection include the presence of foreign material or sequestrum formation, poor vascular supply to wounds on the distal limbs, and the immune status of the patient. Horses with uncontrolled pituitary pars intermedia dysfunction (PPID) have reduced tissue healing and increased likelihood for infection.

Clinical signs of wound infection include excessive discharge, poor quality granulation tissue, signs of local infection, and a failure to respond to therapy. Systemic antimicrobials are generally utilized in addition to topical therapies. Wound debridement is critical and may need to be performed multiple times, as biofilm is often present and can reform within 24-72 hours. Tissue culture and sensitivity is recommended to guide therapy in any chronic, non-healing wounds.





A shoulder wound with primary closure failure and infection, treated with manuka honey (Photos courtesy of Dr. Holly Roessner, DACVS-LA)

There is an abundance of topical medications available for use, with limited scientific evidence and regulatory oversight.

TOPICALS WITH ANTIMICROBIAL ACTIVITY:

- Triple antibiotic ointment (neomycin, polymyxin B, and bacitracin) is a classic topical antibiotic. It has a wide antimicrobial spectrum but is ineffective against *Pseudomonas* species. The zinc portion of bacitracin stimulates epithelialization but can retard wound contraction. In a controlled experimental study, wounds treated with triple antibiotic ointment healed 13 days slower compared to non-treated wounds, making it a less favorable choice for equine wounds.[1]
- Silver sulfadiazine 1% ointment is a commonly used topical, with a wide antimicrobial spectrum, including Pseudomonas and fungi. It is an excellent topical choice for wounds, including all types of burns. SSD binds to tissue to form inactive silver compounds, so it must be applied at least once daily for maximum antimicrobial efficacy. The cream does not adhere well to the wound bed, so a bandage is often utilized to hold it in place.
- Medical grade manuka honey is made by bees pollinating the *Leptospermum scoparium* bush. Manuka honey has a wide antimicrobial spectrum due to the presence of unique manuka factor (UMF), a compound known as methylglyoxal. A higher UMF is associated with superior healing. Manuka honey reduces inflammation by reducing edema and the presence of debris and necrotic tissue within the wound bed. Manuka honey promotes a moist environment, and wounds usually appear more exudative compared to wounds treated with other topical medications. Multiple studies support the use of medical grade manuka honey for wound healing, including a study in which treated wounds healed 12 days faster compared to untreated wounds.[2] There has been speculation that nonmedical grade honey made locally would have improved antimicrobial activity against resident bacteria. Unfortunately, nonmedical grade honey has a significant risk of bacterial or fungal contamination with unknown efficacy. Therefore, medical grade honey with a high UMF should be used if possible. This product is available in gel, paste, and prefabricated calcium alginate sheets that can be cut to size.
- Cadexomer iodine is a 0.9% iodine in starch gel. Iodine is slowly released from the starch molecules, leading to enhanced antimicrobial activity. It is effective against MRSA *and Pseudomonas* biofilms in mice wounds and *ex vivo* in equine wounds, but no *in vivo* equine studies exist.[3]
- Amorphous silicate gel (Zarasyl) is a patented barrier cream comprised of amorphous silicate nanoparticles and polyethylene glycol. There are no controlled studies, but a retrospective series in horses reported no exuberant granulation tissue, no complications, and high owner satisfaction.[4]
- Octenidine dihydrochloride is a hydrogel with wide antimicrobial spectrum, including fungi and *Pseudomonas*. In humans, octenidine hydrogel has shown improved healing of chronic wounds. There are no studies in horses.
- While nitrofurazone has a wide antimicrobial spectrum, it is inactivated by wound exudate and is ineffective against *Pseudomonas*. Most importantly, nitrofurazone is a reported carcinogen, causing ovarian and mammary tumors in mice and rats. Additionally, nitrofurazone decreases epithelialization and contraction and promotes exuberant granulation tissue. While still used by some today, there are many superior, safer products available.

Exuberant granulation tissue is common in distal limb wounds of horses due to a prolonged inflammatory phase, combined with microvascular occlusion of capillaries and an imbalance of collagen homeostasis. While bandages are frequently utilized to maintain a clean wound healing environment particularly in the distal limb, they can stimulate angiogenesis and formation of inflammatory exudate, contributing to a prolonged inflammatory phase.

The primary treatment for exuberant granulation tissue is debridement. The presence of granulation tissue above the skin edges halts epithelialization and contraction, so the granulation bed should be trimmed to just below the skin edge. Topical steroids can be used judiciously to reduce the formation.

TOPICAL STEROIDS:

- Triamcinolone or triamcinolone containing antifungal and antibiotic creams are often used to reduce formation of exuberant granulation tissue, but other steroids can be used as well. Topical steroids are contraindicated in infected wounds, and substantially delay wound healing by delaying contraction, epithelialization, and angiogenesis. Use should be limited to 1-3 applications maximum.



A tarsal wound with infection and exuberant granulation tissue (Photo courtesy of Dr. Holly Roessner, DACVS-LA)

BIOLOGIC TOPICALS:

- Platelet rich plasma (PRP) gel has become a popular treatment for wounds, particularly if a practitioner already has access to a commercially available PRP kit and centrifuge. The gel is then easily made using a PRP kit, which activates platelets using thrombin and calcium gluconate to form a gel. Platelets provide growth factors and hydrolytic enzymes that are useful in multiple phases of healing. PRP has been shown to improve angiogenesis, shorten the inflammatory phase, and improve epithelialization and collagen organization in multiple equine studies.[5] While this is promising, the price point is considerably higher compared to other topicals mentioned here and needs to be considered.
- Amnion, the innermost layer of fetal membranes, has increased in popularity over the last few years as a wound healing treatment. Amnion has been shown to contain valuable growth factors, modulate inflammation, recruit stem cells, and promote epithelialization. It is available commercially as a sheet or injectable liquid. If a practitioner has access to fresh, healthy amnion, it is relatively simple to harvest, inexpensive to process, can be cut to size, and can be stored up to 12 months for future use.[6] Multiple equine studies showed favorable results, with amnion-treated wounds displaying reduced granulation tissue and more rapid healing time.[7]

WEBINAR HIGHLIGHTS

A metacarpal wound treated with amnion, healing well 7 weeks later (Photos courtesy of Dr. Holly Roessner, DACVS-LA)





In summary, there are many topical products available. Some should never be used (nitrofurazone), some should be used with caution in certain scenarios only (steroids), and others can be used based on practitioner experience and preference. The topicals presented here have some, though still limited, evidence-based support. Frequent evaluation of wound healing to ensure it is progressing as expected is recommended. Repeat debridement should be performed if infection or exuberant granulation tissue occurs, and underlying metabolic disorders affecting the immune system should be diagnosed and treated if wound healing is still delayed.



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THE ANSWERS YOU REALLY WANT TO KNOW ABOUT FELINE ATOPIC SKIN SYNDROME

Joya Griffin, DVM, DACVD
Animal Dermatology Clinic, Louisville, KY

Still scratching your head over feline allergic skin disease? In this VETgirl Webinar, **"The Answers You Really Want to Know About Feline Atopic Skin Syndrome"** Dr. Joya Griffin, DACVD, reviews our updated understanding of feline atopic skin syndrome (FASS), from reaction patterns and diagnostic challenges, to evidence-based treatment approaches. Missed the webinar? Watch the replay **HERE** or check out the highlights below!

Far less is known about allergic skin disease in cats compared to dogs and humans. Feline patients often present differently, with variable clinical signs, inconsistent demonstration of IgE, and with limited knowledge regarding their skin barrier function. There is debate as to whether atopic dermatitis (AD) even exists in the cat. For years, the term non-flea, non-food hypersensitivity dermatitis (NFNFHD) was the preferred term and more recently the term feline atopic skin syndrome (FASS) is often favored. FASS is one component of the broader feline atopic syndrome (FAS) which encompasses a spectrum of hypersensitivity disorders with varying presentations that affect the skin, gastrointestinal and respiratory tracts. Whatever the terminology chosen, little is known about allergic dermatitis in cats relative to their canine counterparts. In one retrospective study, NFNFHD was found in 12% of allergic cats. The face and ventrum were most commonly affected and allergen-specific IgE was detected in almost 70% of these cats suggesting an allergic component. But overall, few studies exist.





Common facial (left) and ventral abdominal (right) presentations of feline allergic dermatitis (Photos courtesy of Dr. Joya Griffin, DACVD)

Likewise, little is known about the microbiota of allergic cats. Secondary bacterial infections are reported in less than 50% of cases which is less common than reported in dogs. This may be due to decreased corneocyte adherence of bacteria, though more recent studies show higher prevalence of infections. Cats with bacterial infections may present in varying ways that are less commonly seen in dogs. They can have lesions as subtle as erythema and seborrhea or present with classic pustules. Other signs of infection include crusted papules, eroded to ulcerated plaques, and linear to nodular granulomatous lesions that may be ulcerated. Because these presentations are similar in appearance to the reaction patterns that occur in allergic cats, secondary *staphylococcal* infections may go overlooked. A fungal dysbiosis was found in the skin of allergic cats in one study with *Malassezia* being isolated in higher numbers in affected sites pointing toward the importance of looking for and treating secondary infections in cats that present with skin disease.

The exact pathomechanism of FASS remains unclear, however, histopathologic studies show similar inflammatory reactions as found in the canine patient. T cell involvement is apparent but whether IL-31 is a key pruritogenic cytokine remains unclear.

Cats with allergic skin disease, whether related to food, fleas or environmental allergens, present with varying reaction patterns. FASS can also been seen in conjunction with allergic asthma, conjunctivitis, and rhinitis in some cases. The cutaneous reaction patterns in the cat include head and neck pruritus (or lesion-less pruritus), eosinophilic granuloma complex, self-induced hair loss ("fur-mowing"), papulocrustous dermatitis ("miliary dermatitis"). These reaction patterns do not indicate a specific hypersensitivity disorder. They can be seen alone or in various combinations in the same cat and can present differently from season to season or as allergy symptoms worsen over time. For example, one year the cat may have an indolent ulcer as a reaction pattern due to pollen allergen andthe following year may erupt with miliary dermatitis. These reaction patterns can also occur in non-hypersensitivity diseases as well as atopic dermatitis, food hypersensitivity, insect hypersensitivity, adverse cutaneous drug reaction, contact hypersensitivity, and intestinal parasite hypersensitivity.

FELINE REACTION PATTERNS:

1. Head and neck pruritus. The pruritus may be focused around the head and neck but can also be generalized and is not pathognomonic for one type of hypersensitivity disorder. Differential diagnoses include atopic dermatitis, food hypersensitivity, adverse cutaneous drug reaction, flea allergy dermatitis.



Facial pruritus in a cat (Photo courtesy of Dr. Joya Griffin, DACVD)

2. Miliary dermatitis which appear as pinpoint crusted papules that are often rimmed by erythema and felt before they are seen as they can underly haired skin. Can be found commonly around the head and the neck and on the dorsum. Differentials include hypersensitivity disorders, bacterial infection. drug hypersensitivity, hypereosinophilic syndrome, ectoparasites: *Cheyletiella, Otodectes, Lynxacarus*, chiggers, lice, dermatophytosis.



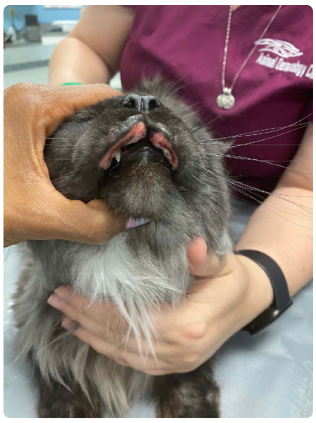
Miliary dermatitis on a cat's neck (Photo courtesy of Dr. Joya Griffin, DACVD)

3. Eosinophilic Granuloma Complex which includes the indolent ulcers, eosinophilic plaque, eosinophilic (linear) granuloma and eosinophilic granuloma causing a swollen or "pouty"-appearing chin. Differentials include hypersensitivity disorders or idiopathic and in the case of indolent ulcers can mimic squamous cell carcinoma. If not responding to treatment, biopsy is warranted.



Eosinophilic plaques on the ventral abdomen of a cat (Photo courtesy of Dr. Joya Griffin, DACVD)





Eosinophilic granulomas on the tongue (left) and indolent ulcers on the lips (right) can be components of eosinophilic granuloma complex in cats (Photos courtesy of Dr. Joya Griffin, DACVD)

4. Self-induced hair loss and trauma, aka the "fur-mowing" cat (symmetric lesion-less pruritus). History is particularly important and can be challenging as some cats do not report excessive licking or grooming. Cats can often groom in private. Owners instead, may report excessive licking or grooming, vomiting of hairballs, or note hair in the feces, or large tufts of hair in the environment. On close examination, barbered or broken hairs can be seen. Can prove whether a cat is causing hair loss and it is not spontaneous by performing an "E-collar test" or by examining hairs via trichogram to see if hairs are broken or split from excessive grooming. Differential diagnoses include atopic dermatitis, food hypersensitivity, adverse cutaneous drug reaction, ectoparasites (fleas, *Cheyletiella, Otodectes, Demodex gatoi*), hyperthyroidism, and psychogenic (less likely if symmetric).



Self-induced hair loss on the ventral abdomen of a cat (Photo courtesy of Dr. Joya Griffin, DACVD)

WEBINAR HIGHLIGHTS

DIAGNOSTIC APPROACH TO THE PRURITIC CAT:

Diagnosing FASS in the cat is a diagnosis of exclusion as it is in the dog. Biggest challenges come from difficulty doing diet trials in cats especially in multi-cat households or when owners cannot prevent the cat from roaming outdoors. Some feline owners are also insistent that their cat will not tolerate any diet change or is a "picky eater". Ectoparasitic control can also be a difficult topic to approach when owners insist that their cat is indoor only and thus could not possibly be exposed to parasites or pollens for that matter. In fact, indoor air quality is almost identical to outdoor air quality so indoor only cats are not exempt from environmental allergies. Looking into the origin of the cat (likely at one point was outdoor, perhaps a stray), other animals that go outdoors and are in contact with the indoor cat, and new cats that have joined the household can serve as a risk factor for *Demodex gatoi* or fleas. Dermatophytosis should also be excluded as some cats with ringworm can be pruritic due to the cutaneous inflammatory response.

TREATMENT

The approach to treatment in the allergic cat is similar to that of the dog, however, there are limited options for medical management of pruritus that are FDA approved for use. Antihistamines, glucocorticoids and cyclosporine are often used extra-labelly. Atopica® liquid is the only licensed medication for the treatment of FASS in cats and can offer good relief of symptoms but generally requires daily administration initially and has a lag period before improvement is seen that lasts 3-4 weeks. Once symptoms are controlled, tapering to every other day may be possible. Compounded cyclosporine in the form of flavored chewables, liquids or smaller capsules can be given to cats who are challenging to medicate.

Oclacitinib (Apoquel®) has shown efficacy in reducing clinical signs in a few limited studies in cats with FASS; however, is not labelled for use in cats and should be used with caution due to narrow margin of safety in cats. If used CBC and biochemistry analysis is warranted. Lokivetmab (Cytopoint®) is not recommended for use in cats due to the potential for severe adverse reactions to this foreign protein (caninized monoclonal antibody).





Allergen-specific immunotherapy remains my treatment of choice as a targeted, long-term, drug-free option. The goal of immunotherapy is to manage the symptoms without daily chronic medications that often carry side effects. The added benefit of not having to catch a cat daily for oral medications is often appealing and provides a better quality of life for the owner and the cat. Intradermal testing is performed to identify specific allergen reactivity, however, can be challenging due to transient and weak reactions. Serologic testing is frequently utilized either alone or in combination with intradermal testing. Studies on the efficacy of immunotherapy in cats are also limited, however, I have had good success with immunotherapy with decreased need for chronic medications and fewer allergic flares over time. Subcutaneous immunotherapy is well-tolerated in most cats. Transdermal immunotherapy is a newer mode of administration and is very well-accepted by most felines and has shown good efficacy so far (Alibre™ Animal Inc). Sublingual immunotherapy is less often chosen due to the need for once to twice daily administration but is a good option for some owners. While beginning immunotherapy, low-dose alternate day glucocorticoids or Atopica® liquid is used to provide relief of pruritus. Antihistamines provide little relief alone in the majority of cats but may provide steroid-sparing effect in some cats.

Limited studies have shown mild to moderate efficacy to support use of Redonyl® and Cerenia®. Redonyl® and now Dermaquin® Skin Support Supplement contain palmitoylethanolamide (PEA), an anti-inflammatory endocannabinoid supplement that reduces mast cell degranulation. PEA has been shown to reduce pruritus and lesions in atopic dogs. In a small study, Redonyl® was able to maintain methylprednisolone-reduced level of pruritus and lesions than placebo. Maropitant (Cerenia®) reduced pruritus in 11/12 cats by more than 50% and 10/12 cats had reduction in lesions on the skin in one open study conducted over 4 weeks.

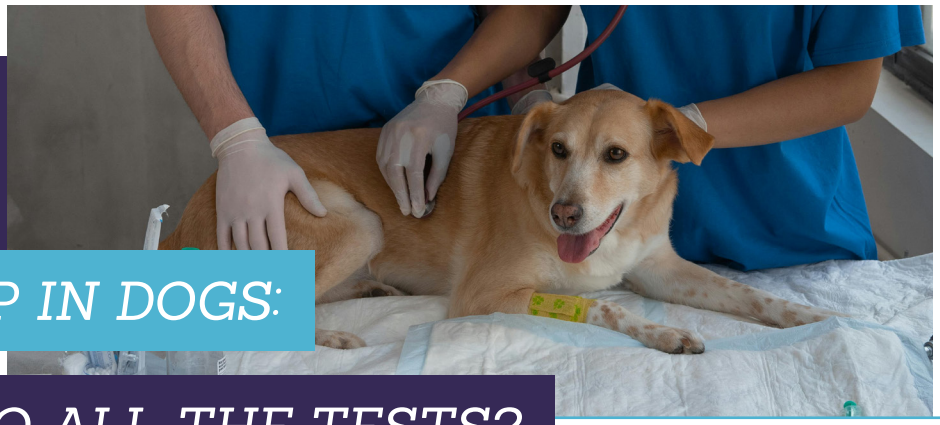
Topical therapy is important in cats to reduce allergen exposure and restore the barrier function of the skin. Key is to find the product that works best for the pet parent and is well-tolerated for the cat. Medicated wipes or mousse are useful to treat inflamed or focally infected areas, though some cats will tolerate bathing. I utilize low-potency steroids and tacrolimus for focally inflamed and pruritic lesions along with topical spot on products that contain essential oils and fatty acids like (Dermoscent® Essential 6 Spot-on, Atopivet® spot-on, mousse, or collar).



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WEBINAR HIGHLIGHTS



HIGH ALT & ALP IN DOGS: IGNORE, OR DO ALL THE TESTS?

John Sessions, DVM, DACVIM
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What should you do when your canine patient's ALT or ALP is elevated? In this **VETgirl article, Dr. John Sessions, DACVIM (SAIM),** reviews how to interpret liver enzyme changes and when to pursue further diagnostics. Read on for practical strategies to better diagnose and manage common hepatobiliary diseases in dogs.

INTRODUCTION

In this session, we delve into the clinical evaluation of hepatobiliary diseases, particularly focusing on diagnostic methods, tests, and clinical management strategies associated with elevated liver enzymes in dogs. Liver diseases are commonly encountered in veterinary practice, and an understanding of the various diagnostic tools and disease-specific considerations is vital for accurate diagnosis and effective treatment.

LIVER ENZYME TESTS: ALT, AST, AND THEIR IMPLICATIONS

One of the first indicators of hepatocellular injury are alterations in liver enzyme levels. Alanine aminotransferase (ALT) and aspartate aminotransferase (AST) are two primary markers used to assess hepatocellular damage. ALT is more specific to hepatocytes and is a sensitive marker for liver injury, though it has a relatively long plasma half-life (~2.5 days) and may remain elevated for days to weeks following an acute insult. In contrast, AST is present in various tissues, particularly in mitochondria, and while it can indicate liver disease, it is less specific due to its presence in muscle tissue. AST also has a shorter half-life and normalizes more quickly (hours to days) compared to ALT.

When ALT and AST levels rise, it is crucial to investigate the underlying cause, especially if the increase is greater than two times the normal reference range or persists for weeks to months. Elevated levels of these enzymes may indicate hepatocellular necrosis, viral hepatitis, or other liver pathologies.



TESTS FOR CHOLESTASIS AND DRUG INDUCTION

In addition to ALT and AST, alkaline phosphatase (ALP) and gamma-glutamyltransferase (GGT) are commonly measured to evaluate cholestasis or biliary tract disease. ALP is typically not present in normal hepatic tissue but can be induced by obstructed bile flow or certain drugs, including glucocorticoids and anticonvulsants. GGT is more specific for liver disease, with elevated levels strongly indicating hepatobiliary disorders, such as cholangiohepatitis or bile duct obstruction. When both ALP and GGT are elevated, the likelihood of liver disease is increased to 94%.

EVALUATION OF LIVER FUNCTION

Liver function is not solely determined by enzyme activity. Several other biochemical tests, including albumin, blood glucose, bilirubin, and major clotting factors, provide insights into liver function. Particularly notable is the role of bile acids in assessing hepatobiliary function. Serum bile acid levels, particularly when evaluating a fasting and post-prandial sample, can offer valuable diagnostic insights. Elevated fasting serum bile acids (FSBA) are indicative of hepatobiliary disease, with post-prandial samples providing additional diagnostic sensitivity, especially in cases of portosystemic shunts or portal vein hypoplasia.

Ammonia levels also serve as an important diagnostic marker. High levels of ammonia indicate a dysfunction in the liver's ability to detoxify by converting ammonia to urea, which is critical in diagnosing portosystemic shunting or significant hepatic dysfunction.

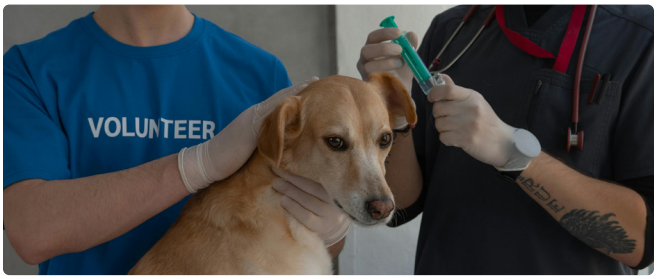
PROTEIN C: A BIOMARKER OF HEPATIC FUNCTION

Protein C, an anticoagulant protein synthesized in the liver, has emerged as a useful biomarker for hepatic function. Decreased activity of protein C has been found in dogs with congenital or acquired portosystemic shunts, offering a potential diagnostic tool to differentiate between portosystemic shunts and microvascular dysplasia (MVD). Low protein C levels, in conjunction with high bile acids, suggests the presence of portosystemic shunts and may guide further diagnostic imaging and treatment.

IMAGING AND BIOPSY: TOOLS FOR LIVER DIAGNOSIS

Imaging techniques, including ultrasonography and radiographs, are essential for evaluating liver size, shape, and the presence of masses or biliary system abnormalities. However, these methods are not sufficient to differentiate specific types of parenchymal liver changes. Fine needle aspiration (FNA) is useful for identifying vacuolar hepatopathies or liver neoplasia but is less effective in detecting inflammatory changes.

Liver biopsy remains the gold standard for diagnosing the type and extent of hepatic damage. Surgical and ultrasound-guided needle biopsies provide definitive histological information, allowing for targeted treatment. A study by Dr. David Twedt evaluating 150 liver biopsies in dogs revealed chronic hepatitis, neoplasia, and vascular anomalies as common causes of liver disease. However, the study also indicated that a needle biopsy should be interpreted with caution due to variable correlations with wedge biopsy results.



CANINE CHRONIC HEPATITIS

Chronic hepatitis in dogs is a condition characterized by persistent inflammation of the hepatic parenchyma, which, if left untreated, can progress to cirrhosis and portal hypertension. Laboratory findings typically include elevated ALT and AST levels, with some dogs showing increased bilirubin and decreased albumin levels as the disease progresses. Serum bile acids are often elevated in chronic hepatitis, with post-prandial measurements offering additional diagnostic utility.

The etiology of chronic hepatitis remains unclear in most cases, although copper-associated hepatopathy, particularly in Bedlington terriers, is well-documented. Copper accumulation in the liver is a significant concern, and diagnosis is made through liver biopsy and histochemical staining techniques. Other potential causes include drug-induced hepatitis, immune-mediated conditions, and infections like leptospirosis or Bartonella.

MANAGEMENT OF CHRONIC HEPATITIS

Treatment of chronic hepatitis aims to address the underlying cause (if identified) and to manage the inflammatory response to prevent further hepatic damage. Specific therapeutic interventions may include anti-inflammatory drugs like prednisone, azathioprine, or cyclosporine. In cases of copper-associated hepatitis, copper chelation with agents such as penicillamine or trientine is critical, followed by lifelong treatment with zinc to prevent copper re-accumulation.

Supportive care, including the use of antioxidants such as Vitamin E, SAMe, and milk thistle, is commonly employed to protect hepatocytes from oxidative damage. Managing secondary complications like ascites, hepatic encephalopathy, and GI ulceration is also essential in cases of advanced liver disease.

PROGNOSIS AND CLINICAL OUTCOME

The prognosis for dogs with chronic hepatitis depends largely on the stage of the disease and the presence of secondary complications like cirrhosis or portal hypertension. Studies show that dogs with early-stage chronic hepatitis can live for several years with appropriate treatment, while those with advanced cirrhosis often have a much shorter survival time. Prognosis is particularly poor for dogs with significant hypoalbuminemia, hypoglycemia, and coagulopathies.

CONCLUSION

Liver diseases in veterinary medicine encompass a range of pathologies, each with distinct diagnostic and management strategies. Early diagnosis, aided by a combination of enzyme tests, bile acids, imaging, and biopsy, is critical for successful treatment and improved prognosis. With advances in diagnostic tools, such as protein C activity and imaging techniques, veterinarians can now more accurately assess liver function and tailor treatment to the specific needs of their patients.

The key to managing liver disease lies in a comprehensive approach that incorporates clinical evaluation, laboratory testing, and appropriate imaging techniques, along with a focus on disease-specific therapies. With continued research and clinical experience, veterinarians can offer improved care and outcomes for dogs with hepatic diseases.



BLOG HIGHLIGHTS

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THE IMPORTANCE OF KITTEN KINDERGARTEN: EARLY SOCIALIZATION AND LEARNING

Tabitha Kucera, CCBC, RVT, KPA-CTP, VTS (Behavior)
Chirrups and Chatter Behavior Consulting

Curious how to set your feline patients up for lifelong confidence and better veterinary visits? Look no further! In this **VETgirl article, Tabitha Kucera, CCBC, RVT, KPA-CTP, VTS (Behavior)** breaks down the importance of early kitten socialization and introduces the concept of "Kitten Kindergarten." Read on to learn how structured classes and positive exposure can prevent behavior issues, strengthen the human-animal bond, and make trips to the vet less stressful for everyone!

Unfortunately, "Cats are among the most popular pets worldwide, but there are still major gaps in the public's general understanding of their social behaviors and related needs, including for socialization"[1]. Thankfully, as veterinary professionals, we have an opportunity and responsibility to educate caregivers on the importance of kitten socialization which can include having kitten kindergarten classes.



Image by Susann Mielke from Pixabay

Lack of and/or poor early socialization in our feline patients results in the foundation for many adult behavioral patterns, which include increased sensitivity to new experiences, higher emotionality, fear, phobias, hyperactivity, compulsive disorders, and aggression.[2] These behaviors can result in fear of handling and veterinary visits, relinquishment, and damage to the human-animal bond.

WHAT IS SOCIALIZATION AND THE KEY SOCIALIZATION PERIOD

Socialization is the process in which appropriate social behaviors are developed. During this time, an animal learns how to recognize, interact, and bond with the species they coexist with.

Socialization is not just about exposure—it's about training concepts and life skills. It's about introducing kittens to the world in a managed way, ensuring they are not stressed or afraid, while pairing new experiences and stimuli with things they enjoy, like treats or play.

A kitten's key socialization period begins at **2 weeks of age and lasts until approximately 7 to 10 weeks.** During this time, kittens become less dependent on their mother for survival and start engaging more with their environment and social interactions. Kittens are most receptive to learning from new experiences, and their social learning is enhanced.

While the primary socialization phase occurs between 2 and 7 weeks, **kitten socialization classes remain valuable for kittens up to 12 weeks of age.** Beyond 14 weeks, kittens may become more cautious or even reactive toward unfamiliar cats, making early social experiences especially important.[3]



Image by Artem Makarov from Pixabay

Socialization doesn't end after kittenhood. **Continued safe and positive exposure** to new experiences throughout a cat's life helps maintain confidence and adaptability, reinforcing the foundation built during early development.

WHAT IS KITTEN KINDERGARTEN

An early socialization, training, and education program for kittens between 7 and 16 weeks plays a crucial role in setting them up for lifelong success. These programs teach essential life skills, help caregivers recognize and prevent common behavioral and health issues, and strengthen the bond between kittens and their families. They also provide a valuable opportunity to educate caregivers about normal feline development and behavior, ensuring they understand their kitten's needs. Additionally, structured classes offer a safe and controlled environment for exposure to handling and veterinary

procedures, helping kittens build confidence and reducing stress in future vet visits. By incorporating these programs into your hospital, you not only support feline well-being but also foster lasting relationships with caregivers.

IMPLEMENTING KITTEN KINDERGARTEN IN VETERINARY PRACTICE

For veterinary clinics considering offering Kitten Kindergarten, it's essential to structure the program thoughtfully to support positive experiences for kittens. The goal is gradual exposure rather than overwhelming them with too much too soon, allowing them to build confidence and resilience.

Key considerations for a successful program include the age range of participants—kittens aged 8 to 14 weeks are ideal. Class size should be small, typically 3 to 7 kittens, to ensure individualized attention and a calm environment. Classes are usually held for four weekly sessions, each lasting 45 to 60 minutes but can differ.

Some key topics include :

- Body language and normal feline behavior.
- Socialization and positive exposure, socializing to different people, other kittens, etc. (new sounds, textures, and environments).
- Cooperative care and handling ensure kittens are comfortable with grooming, nail trims, and medication.
- Carrier and travel training helps kittens become comfortable with wearing and walking on a harness, carriers, car rides, and veterinary visits.
- Enrichment including creating a feline friendly environment.
- How animals learn: Positive reinforcement training and problem behavior prevention and management.
- Giving animals choices as part of building a trusting relationship.

For veterinary professionals leading Kitten Kindergarten, a strong foundation in cat behavior and development is essential. Teachers should master positive reinforcement techniques and understand how animals learn, while prioritizing health and safety protocols. Effective communication and classroom management skills are crucial for creating a supportive and engaging learning environment. Additionally, a commitment to continuing education helps educators stay current with best practices.



Image by JackieLou DL from Pixabay

WHAT IF YOU CANNOT DO CLASSES?

If offering Kitten Kindergarten classes isn't possible at your clinic, discuss behavior and the importance of socialization in appointments, host kitten socialization in-person lectures where caregivers come without their kittens, refer clients to Kitten Kindergarten online or in-person classes and share evidence-based animal welfare positive behavior resources. A study found that even brief educational sessions can have a lasting impact on cat behavior.[4] The study revealed that a conversation lasting less than an hour during a kitten's first veterinary visit can significantly reduce unwanted behaviors over time. Caregivers who received behavior guidance during these visits reported fewer behavioral issues with their cats. By educating caregivers, we empower them to make informed decisions, which leads to better cat welfare and a decrease in undesirable behaviors. Prioritizing education is essential for improving behavior and overall well-being in cats.

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FELINE BEHAVIOR RESOURCES

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BLOG HIGHLIGHTS



BALANCE MATTERS: HOW TO IMPROVE WORK-LIFE BALANCE IN VETERINARY MEDICINE

Dr. Justine Lee, DACVECC, DABT
Director of Medicine / Co-founder, VETgirl

Struggling to find balance between long hours, demanding cases, and your personal life? You're not alone. In this **VETgirl** blog, **Dr. Justine Lee, DACVECC, DABT,** shares practical tips on improving work-life balance in veterinary medicine - from time management and healthy habits, to boundaries and support systems. Read on for strategies to help you stay happy, healthy, and thriving in this challenging profession!

It's no secret that our veterinary profession started as a boundless love for animals. As a veterinarian or veterinary technician, our job comes long hours, tireless effort, demanding clients/pet owners, and high stress. When it comes to our amazing veterinary technicians, tech assistants (TA) and CSR/CSC, it also comes with way too low of a salary. It's a profession full of joy and stress, passion and burnout. But finding balance between your personal life and career is essential to maintain happiness, promotion, and health. We all know that the veterinary profession ranks high when it comes to dramatic rates of burnout and suicide ideation. It's imperative that we find ways to keep ourselves happy and healthy. In this VETgirl blog, we share some tips on how to improve your work-life balance in veterinary medicine. (BTW, if you haven't downloaded our free "Put Your Mental Health First" e-book, make sure to get it **HERE**).



1. FOCUS ON TIME MANAGEMENT

Time is the most precious resource, especially in veterinary medicine where emergencies may cause you to work beyond the scheduled hours. But time management is crucial for achieving the coveted work-life balance. You need to plan out your activities, prioritize them and manage your time appropriately. For example, setting boundaries with clients and colleagues, such as being firm with your lunch breaks or leaving work on time and delegating as much as possible, are essential. It may take some time, but with practice and habit, you can become more efficient with your time. You can read all about how to be more efficient as a veterinarian **HERE** in our blog from 2015. (And that's before COVID, when our profession got even less efficient due to curbside, higher pet populations, quarantine requirements, and home schooling!). Allocate the right number of "minutes" to the task too. If you think it's going to take 2 hours for inventory, actually set a timer and calculate it, so you know that the next time you do inventory, it actually takes 14 hours. Then schedule and block that time off for you appropriately!



2. EMBRACE HEALTHY HABITS

Physical exercise, a healthy diet, and emotional wellness are vital. Nurturing your physical, mental, and emotional health helps increase productivity and your ability to handle stress. Make time for exercise, prioritize a balanced diet plan (See Dr. Mike Tokiwa's healthy food tips **HERE**), manage your emotions, live in the present, try to cultivate gratitude in your life, engage with your hobbies, and spend time with your family and friends. You can even pick up some tips on happiness here with Dr. Mike Tokiwa.



3. PURSUE CONTINUING EDUCATION (CE)

OK, shameless little plug for VETgirl here, the #1 online veterinary CE platform out there! One significant way to balance work and life is to pursue continuing education. Staying up to date with the latest advancements in veterinary medicine can lead to career advancement and satisfaction. It can also help sharpen your skills and make you feel better equipped to handle difficult cases. Taking continuing education courses can help you stay updated on the cutting edge in your field, and feed your professional interests, which eventually results in happiness and balance. Plus, you can get a free 14-day VETgirl **TRIAL HERE**.



4. SET BOUNDARIES

Clients and colleagues, especially pet owners, can make it difficult to maintain work-life balance. You can set boundaries on your availability by limiting your work hours, making it clear to clients when you are available to take their calls, and delegating tasks to other team members. Making things clear and actively communicating your boundaries is essential. For me, learning to say no was the best way that I learned how to establish work boundaries. I need to do this so I can help take care of my family, which to me, is my #1 priority. I mean, you can see why, right?



5. FIND A SUPPORT SYSTEM

Support is essential in achieving work-life balance. Find a support system that can help you manage stress and responsibilities. You can look for mentorship, engage with peers who have similar work experiences, or connect with your friends and family. Having someone to share your experiences, listen to your doubts and concerns, and provide you with valuable advice, can offer emotional support, minimize burnout, and increase overall happiness.



When in doubt, know that achieving work-life balance in veterinary medicine requires a concerted effort. Time management, healthy habits, continuing education, setting boundaries, and finding a support system are essential practices that can help you create a better balance between work and life. By adopting these helpful tips, you take important steps to achieve a happy, healthy career as a veterinary professional.

BLOG HIGHLIGHTS

MIND MASSAGE

Missed out on our webinars because life is too busy? As a VETgirl ELITE member, you can watch it on-demand whenever you want! Here are the top highlights you should have learned from some of the popular webinars this quarter!

May 4, 2025



Machine Learning in Diagnostic Imaging: Is it Accurate and Should I Really Use It?
by Dr. Diane Wilson, DACVR

- Yeah, we get it – we still use fax machines in #vetmed. But learn to embrace artificial intelligence (AI), as it's here to stay. We're all responsible for learning about the use of AI in our veterinary profession as part of our oath to continually improve our professional knowledge.
- Four key elements to developing a responsible AI tool for diagnostic imaging are 1) board-certified radiologists, 2) data scientists, 3) lots of data, and 4) education of end-users.
- Proper use of an AI tool for diagnostic image interpretation can improve efficacy & efficiency of patient care, and it starts with understanding what the tool can and cannot do.
- Improper use of an AI tool for diagnostic imaging will likely yield no useful information, and it could also yield misinformation and put patients at risk for unnecessary tests or procedures.

Sponsored by: Antech
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Small Animal Webinar

May 6, 2025

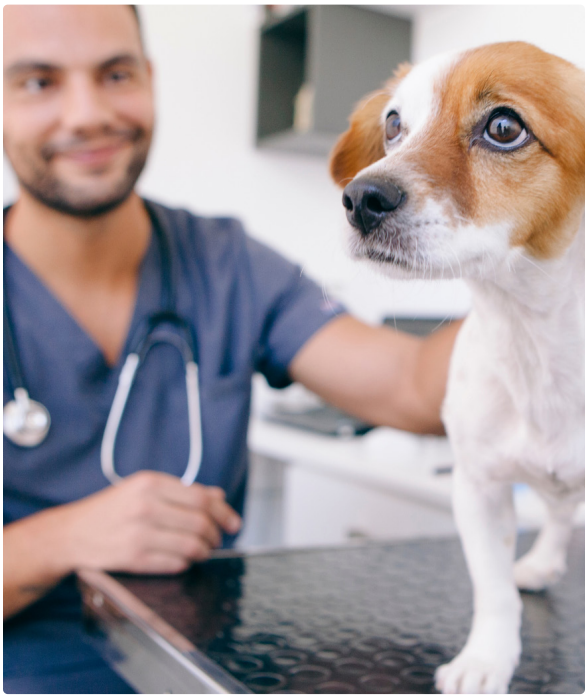


Empowering Your Veterinary Team: The Key to Efficiency, Satisfaction, and Growth
by Brittany Yost, CVPM, CVBL, CCFP

- Hate to break it to you, but you can't DO IT ALL. Trying to do it all reduces efficiency. Empowering your team by delegating responsibility not only improves workflow, but also boosts employee satisfaction & promotes long-term practice growth.
- Delegating responsibilities fulfills the needs of the *practice*; empowering employees fulfills the needs of *our people*.
- Develop the habit of acknowledging & reinforcing the positive because recognizing team wins will build morale and motivation.
- Evaluate your leadership regularly.
- Ask yourself:
  - Do team meetings foster participation or feel top-down?
  - Are you actively giving and receiving feedback? Consider anonymous surveys for honest insight
  - Track employee turnover
  - Use data to monitor practice efficiency and revenue growth

Practice Management Webinar

May 13, 2025

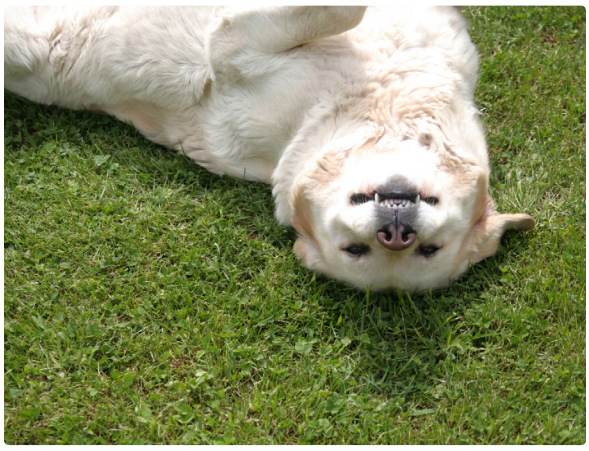


Buffering the Chaos: Acid-Base Traditional Analysis
by Walter L. Brown, RVTg, VTS (ECC)

- The body is smart and will attempt to compensate for a primary acid–base disturbance but it never *overcompensates*; an over-exaggerated response would mean there is a mixed acid-base disturbance.
- Base-excess (BE), or "base deficit" when the value is negative, reflects the net effect of all the body's buffer systems. Outside the species normal reference range, a negative BE (e.g., -15 mEq/L or mmol/L) indicates metabolic acidosis, and a positive BE (e.g., + 10 mEq/L or mmol/L) indicates metabolic alkalosis.
- Gastrointestinal losses can produce various acid–base disturbances: vomiting causes hydrogen-ion loss and metabolic alkalosis, whereas diarrhea causes bicarbonate loss and metabolic acidosis.
- Whichever component (CO_2 or HCO_3^-) moves in the same direction as pH generally represents the primary process.
- You can use your TCO_2 (total CO_2) on your biochemistry panel – it's not an exact proxy for $PaCO_2$ when evaluating acid-base status, however. TCO_2 is only about 1 mEq/L higher than serum bicarbonate (HCO_3^-), so it can be used as an approximation for HCO_3^- if needed.

Technician Webinar

May 14, 2025



Managing Canine Atopic Dermatitis in 2025
by Dr. Thomas Lewis, DACVD

- The International Committee on Allergic Disease in Animals recommends a multi-faceted approach when treating atopic dermatitis in dogs:
  - Treat an acute flare
  - Attempt to identify and avoid all triggers of flare
  - Improve skin and coat hygiene
  - Treat ongoing pruritus with drug therapy
  - Allergen-specific immunotherapy should be offered when feasible
- Zenrelia™ (ilunocitinib) is the second Janus kinase inhibitor (JAK) to receive FDA approval for the treatment of allergic and atopic dermatitis in dogs. In a published comparison study, Zenrelia™ (daily dosing) and Apoquel® (twice daily dosing) have similar efficacy regarding reduction of pruritus for the first 14 days. After 112 days of treatment, 78% of dogs receiving daily Zenrelia™ have an itch level of very mild or less (remission), whereas 53% of dogs receiving once daily Apoquel® have achieved the same level of control.
- Allergen-specific immunotherapy (ASIT) is the only treatment for atopic dermatitis that can actually change the course of the disease, rather than just manage symptoms. Successful implementation requires skill in creating a treatment tailored to your patient's specific allergens, and route of administration either by injection or sublingual drops.

Sponsored by: Elanco

Small Animal Webinar

May 15, 2025

Handling Humans Humanely: Psychological First Aid Skills for Hospital and Field Activation
by Jeannine Moga, MA, MSW, LCSW

- Psychological first aid skills can be deployed by any person - trained laypeople included - to stabilize individuals experiencing acute emotional distress.
- The 3 "L's" (action principles) of Psychological First Aid are: look, listen, and link.
- Psychological first aid skills can also be used by helpers to activate self-awareness and self-regulation, both of which are important for well-being.

Wellness Webinar

May 20, 2025



The Answers You Really Want to Know about Feline Atopic Skin Syndrome
by Dr. Joya Griffin, DACVD

- Have an itchy cat? 20% of the time, it's due to Feline Atopic Skin Syndrome (FASS).
- Clinical signs of food allergy in cats can include all of the dermatologic reaction patterns in cats (e.g., miliary dermatitis, eosinophilic skin lesions, head and neck pruritus, self-induced alopecia), gastrointestinal signs and/or conjunctivitis.
- Allergen-specific immunotherapy is effective in up to 75% of cats with FASS.

Small Animal Webinar

June 1, 2025

Pruritic Parasites of the Purrfect Cat – Fleas and Other Itchy Mites!
by Dr. Alice Jeromin, DACVD

- In cats, generalized *Demodex cati* usually signals an underlying internal medicine disease; further diagnostic work-up is warranted.
- *Demodex gatoi* in cats is contagious and all cats in the household need to be treated regardless of the presence of pruritus.
- As flea allergy dermatitis (FAD) is the number one cause of pruritus in cats, make sure to rule out FAD initially before pursuing other causes of pruritus such as Feline Allergy Skin Syndrome (FASS) or food allergy.

Sponsored by: BLUE BUFFALO

Small Animal Webinar

June 2, 2025

Difficult Conversations at the Front Desk
by Dr. Peter Bowie, DVM

- The best way to communicate cost to a client is through focusing on value, personalizing recommendations to their pet, and providing options for positive outcomes whenever possible.
- A team-based approach, along with honesty & good communication, provides an environment to solve nearly all complaints! You've got this!
- No matter how challenging, when a team representative stays true to themselves and the job at hand, they can work as a team with a client to get through challenges.
- The most important characteristics of a problem solver when dealing with complaints is the ability to listen, to empathize and to follow through on promises.

CSR Webinar

June 3, 2025

Working With a Neurologic Horse: Be Prepared, Be Safe!
by Shana Filipek, CVT, VTS-EVN

- The clinical signs we see directly correlate to which part of the neurologic system is affected by the disease.
- Although there is no vaccine for Equine Herpesvirus Myeloencephalopathy (EHM), there is an elective vaccine for Equine Herpesvirus.
- The most common fomites in sick horses? People, feed pans & pitchforks!
- Need to move a down horse more than 3 feet? Use the rescue glide to prevent further injury to the horse.
- Have a horse that needs long-term management for skeletal support? This equine vet tech loves the UC Davis Anderson Sling!

Technician Webinar

July 16, 2025

It's Not Just Ringworm! Common Fungal Dermatologic Diseases in Dogs and Cats
by Dr. Joya Griffin, DACVD

- The majority of *Microsporum canis* cases do fluoresce on Wood's lamp examination.
- Kerion fungal reactions are most commonly seen with *Microsporum gypseum* & Trichophyton mentagrophytes.
- In cats, *Malassezia* is often symbiotic with staphylococcal infections due to growth factors that favor yeast production.
- Viral or internal diseases may predispose cats to *Malassezia* infections, but they can also be seen in allergic cats.
- Deep fungal infections are transmitted via inhalation or wound inoculation of the skin.

Sponsored by: BLUE BUFFALO

Small Animal Webinar

June 4, 2025



Screening and Diagnosis of Canine Hip and Elbow Dysplasia
by Dr. Barbro Filliquist, MAS, Dip ACVS-SA, Dip ECVS

- Hip & elbow dysplasia are common developmental and hereditary orthopedic disorders affecting dogs, with approximately 10% of dogs presented to a teaching hospital being affected by hip dysplasia. Accurate diagnosis and screening for these disorders are needed to decrease the prevalence in dogs.
- Hip dysplasia in juvenile dogs is characterized by hip laxity, which is the primary risk factor for the development of hip osteoarthritis. PennHIP, by measuring a distraction index, can be used in dogs as young as 4 months to detect hip laxity.
- The ventro-dorsal radiographic projection is commonly used to diagnose and to screen for hip dysplasia. Screening schemes use 2-dimensional measurements on radiographs, including distraction index, degree of osteoarthritis, and femoral head coverage, to identify abnormalities. PennHip and computed tomography measurements can predict the development of osteoarthritis in very young dogs, making these screening methods advantageous.
- Elbow dysplasia is hard to diagnose accurately in juvenile dogs! Radiographs and computed tomography (CT) are often necessary to identify all abnormalities. The use of deep learning methods is emerging as a promising tool for screening dogs, as it has shown high sensitivity and specificity in identifying abnormal elbow joints on radiographs.

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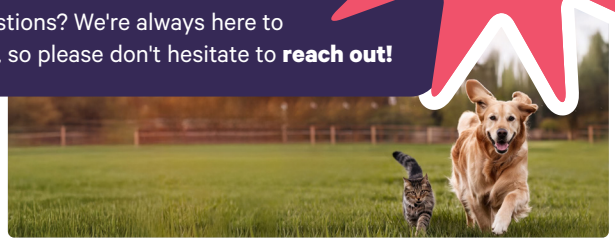
Small Animal Webinar

CE TRACKING WITHOUT THE HEADACHE

TECH TIPS

By **Stacy Calabretta**, VETgirl Technology Program Manager

Questions? We're always here to help, so please don't hesitate to **reach out!**



No more paper piles, Excel formulas, or late-night panic. VETgirl keeps your CE hours organized and stress-free.

If you've ever found yourself digging through your inbox for that one CE certificate, wondering, "Wait, did I even attend that webinar??" — you're not alone. When we asked the VETgirl community how you keep track of their CE hours, the answers varied widely: some keep a running list in their Notes app or mark completed CE in their calendar; others rely on Excel or Google spreadsheets; a few print out certificates and file them away in folders, binders, or notebooks; and some just hang on to paper copies without really organizing them at all. In short, everyone has a system — but most of them are clunky, stressful, and time-consuming. The biggest problem is, those methods usually work... *until they don't, and suddenly you're being audited by your licensing board.*

ENTER: VETgirl

We've built tools to take the chaos out of CE tracking so you can stay focused on what matters — learning, growing, and caring for your patients. Here's how:

1. AUTOMATIC UPLOADS, NO SWEAT

Every time you earn CE with VETgirl, your certificates land automatically on your **My Credits** page. No manual entry, no forgotten certificates, no "Oops, I'll do it later" (because let's be real, later usually means never).

2. ALL YOUR CE IN ONE PLACE

Got CE certificates from other sources? Upload them directly into your VETgirl account. Boom — everything's stored together. And the best part? We keep it all safe for you **forever**. That's right, lifetime storage of every certificate, whether you're an active ELITE member or not.

THE GREAT PAPER CHASE (RETIRED)

"I print CE certificates and keep them in a folder."
Say goodbye to binders, boxes, and mystery piles. VETgirl keeps every certificate safe — forever.



3. SEE THE BIGGER PICTURE (LITERALLY)

Your MyVETgirl Dashboard comes tricked out with visual charts that break down your hours by subject matter and presentation type. You can filter by date, too — perfect for checking where you stand as renewal deadlines creep closer.

SPREADSHEETS BE GONE!

"I use Excel to count up hours at the end of the year."
Our charts do the math for you, instantly breaking it down by subject matter and presentation type.

4. COMING SOON: YOUR CE SIDEKICK IN YOUR POCKET

The new **VETgirl Mobile App** is on the way, and it's about to change the way you track CE:

- **Smarter tracking** – Log, organize, and filter CE like never before.
- **Custom license rules** – Enter your state or specialty's requirements and let the app do the heavy lifting to keep you in compliance.
- **Deadline reminders** – Gentle nudges (before panic mode sets in) so you'll never miss a renewal.

CALENDAR CHAOS, CANCELED

"I jot my CE hours down on my calendar."
Soon, the app will take care of that — and even send reminders before the clock runs out.

BOTTOM LINE?

VETgirl takes CE tracking from "ugh" to *ahhh*. No more frantic hunts for paperwork, no more last-minute all-nighters before your license renewal — just peace of mind that you're covered.

So go ahead and keep on learning. VETgirl is keeping track.

VETgirl

certificate programs

Get Your Learn On

VETgirl certificate programs: Tailored expertise for veterinary professionals. Our RACE-approved tracks offer 12-60 hours of CE to help you master key areas of veterinary medicine. Earn a personalized certificate to display in your clinic, boost your skills, and elevate patient care. **Best of all, it's included with your VETgirl membership!**

anesthesia & analgesia
Course Outline: 30 hours

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dermatology
Course Outline: 20 hours

Sponsored by Antech
diagnostic imaging
Course Outline: 20 hours

301 ELEVATE
ECC
Course Outline: 35 hours

201 ADVANCED
ECC
Course Outline: 60 hours

101 BASIC
ECC
Course Outline: 35 hours

exotic & small mammal
Course Outline: 31 hours

feline medicine
urinary health
Course Outline: 12 hours

LATAM certificado
en español
Course Outline: 47 hours

mastering common clinical cases
Course Outline: 40.5 hours

nutrition
Course Outline: 12 hours

ophthalmology
Course Outline: 30 hours

practice management
Course Outline: 30.5 hours

preventive care for dogs and cats
Course Outline: 43 hours

201 ADVANCED
veterinary technician
Course Outline: 40.5 hours

101 BASIC
veterinary technician
Course Outline: 40.5 hours

principios fundamentales
en español
Course Outline: 20 hours

Visit **vetgirlontherun.com** to learn more!

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UPCOMING WEBINARS

OCT 1
5:00 PM
Más que pollo con arroz, el correcto abordaje nutricional en mascotas con problemas digestivos
by Dr. David Rodríguez
Sponsored by VETgirl

OCT 2
8:00 PM
How to Create a Collaborative Team Where Everyone Can Contribute
by Dr. Laura Pletz

OCT 5
8:00 PM
Canine Infectious Respiratory Disease: Standardizing Protocols for Vaccination and Treatment
by Dr. Carol Reinero, PhD, DACVIM (SAIM)
Sponsored by Elanco

OCT 6
8:00 PM
Diuretic Therapy for Congestive Heart Failure
by Dr. Gordon Peddle, VMD, DACVIM (Cardiology)

OCT 7
8:00 PM
Untangling the Web of Abuse: A Domestic Violence Primer for Veterinary Professionals
by Jeannine Moga, MA, MSW, LCSW

OCT 8
8:00 PM
OSHA Knocks: How to Prepare Without Going Broke
by Kali Marsh, RVT & Mark Harrison, M.S., Ed

OCT 9
8:00 PM
Skin Biopsy Mistakes and Misconceptions
by Dr. Jeanine Peters-Kennedy, DVM, DACVP, DACVD
Sponsored by Blue Buffalo

OCT 14
9:00 PM
Oral Tumors: What to Do
by Dr. Michael Balke,DAVDC, F-OMFS

OCT 15
9:00 PM
The Acute Lower Motor Neuron Canine
by Dr. Missy Carpentier-Anderson, DACVIM (Neurology)

OCT 16
9:00 PM
All Things Ultrasound: AFAST-TFAST-Vet BLUE in Trauma/ER
by Dr. Greg Lisciandro, DACVECC
Sponsored by Antech

OCT 20
8:00 PM
Feline Neonatal Care: Birth to Weaning
by Dr. Petra Cerna, PhD, DACVIM (SAIM), MANZCVS (Medicine of Cats), CertAVP (SAM - F), MRCVS, AFHEA, AdvCertFB

OCT 21
8:30 PM
From Insertion to Infusion: Mastering IV Catheterization
by Tiffany Gendron, CVT, VTS (ECC)
Sponsored by VETgirl

OCT 23
9:00 PM
Common Diseases in Goats and Sheep
by Dr. Andrea Mongini, DVM

OCT 27
8:00 PM
Top Medication Errors in Veterinary Practice – And How to Avoid Them
by Natalie Young, PharmD, DICVP, BCSCP, FSVHP

OCT 30
8:00 PM
Keeping Your Pack Together: Strategies for Veterinary Team Retention
by Silvia Coviello, CVT, CVPM

Times vary based on time-zon above notes times in EST.

ALL TIMES LISTED ARE REPRESENTED IN EASTERN TIME ZONE.

NOV 6
8:00 PM
Ultrasound of the GI Tract in Dogs and Cats
by Dr. Dominique Penninck, DVM, PhD, DACVR, DECVDI
Sponsored by Antech

NOV 12
8:00 PM
Triage and Treatment of Wildlife
by Dr. Sonia M. Hernandez, DVM, DACZM, PhD

NOV 13
12:00 PM
The Clot Thickens: Lessons from the Trenches
by Dr. Amy Kaplan, cVMA, DACVECC, MRCVS

NOV 13
8:00 PM
Autoimmune Disease
by Dr. Sara Ramos, DACVD
Sponsored by Blue Buffalo

NOV 16
8:00 PM
Echinococcus: A Tapeworm on the Run or a Slow-Moving Trainwreck?
by Dr. Kamilyah Miller
Sponsored by Elanco

NOV 17
9:00 PM
Level Up: Advancing Your Career Through Professional Engagement
by Amy Johnson BS, LVT, RLATG, CVJ

NOV 18
8:00 PM
Dairy: To Roll or Not To Roll... Considerations For on Farm Roll & Toggle
by Dr. Alyssa Wilhelm, DVM MS

NOV 19
8:00 PM
Stuff Pet Owners Say
by Darren Osborne

NOV 20
8:00 PM
From Poop to Probiotics: Exploring the Gut Microbiome in Companion Animals
by Dr. Sina Marsilio, PhD, DACVIM (SAIM), DECVIM-CA
Sponsored by Purina

NOV 24
8:00 PM
Understanding GI Complications Associated with General Anesthesia
by Dr. Annatasha Bartel, BScH, BVM&S, MRCVS, DACVAA

DEC 2
9:00 PM
Anesthesia for Camelids
by Dr. Rachel Reed, DVM DACVAA

DEC 3
8:00 PM
Exotics Radiology Basics and Common Radiographic Presentations
by Dr. Marie Rush, DACZM
Sponsored by Antech

DEC 8
8:00 PM
Decision Making for Seizure Drug Selection
by Dr. Ryan Gibson DACVIM (Neurology)

DEC 9
12:00 PM
Non-Responsive Enteropathy: A Challenging Condition
by Dr. Linda Toresson, PhD

DEC 9
8:00 PM
Common Rodent Surgical Techniques
by Dr. Katherine Brannick, MS, DVM, DACLAM

DEC 10
9:00 PM
Shelter Medicine in Private Practice
by Dr. Graham Brayshaw

DEC 11
8:00 PM
Practical Strategies for Building Self-Awareness
by Dr. Sally Ryan, SHRM-CP

DEC 14
8:00 PM
Protips: Top 10 Dermatology Do's and Dont's
by Dr. Julia E. Miller, DACVD
Sponsored by Blue Buffalo

DEC 15
8:00 PM
Modernizing Management of C-Section Anesthesia & Analgesia and Newborn Resuscitation
by Amanda M. Shelby, RVT, VTS (Anesthesia & Analgesia)

DEC 16
9:00 PM
IM Title pending
by Dr. Alison Manchester, PhD, DACVIM (SAIM)

DEC 17
9:00 PM
Topic pending
by Dr. Justine Lee, DACVECC, DABT

DEC 18
9:00 PM
Reducing COGS Without Just Trying to Spend Less
by Nicole Clausen, CSSGB, CCFP

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NOTE: When in doubt, all drug dosages should be confirmed and cross-references with a veterinary drug reference guide.