

Clinical Protocol for Ticks

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Even astute owners may not detect tick infestation until ticks have fed long enough to become engorged (≥ 7 days), and a single tick can attach, transmit a vector-borne pathogen, and drop off the patient without the owner's knowledge.

EVERY OUTDOOR PET IS AT RISK

- Disease rates from tick-borne pathogens vary by region. Common pathogens include:
 - *Ehrlichia* spp
 - *Rickettsia* spp
 - *Borrelia burgdorferi*
 - *Anaplasma* spp
 - *Babesia* spp

SUGGESTIVE HISTORY OF TICK EXPOSURE

- Access to wooded or untreated areas (higher exposure = higher risk)
- Heavy regional tick populations (see capcvet.org for individual county information)
- Lack of continuous tick control
- Positive vector-borne disease screening test

EXAMINATION FINDINGS

- Larvae, nymphs, or adult ticks (especially on head, ears, axillary region)
- Fever
- Lethargy
- Joint effusion
- Petechiae or ecchymoses
- Anemia or thrombocytopenia

- Lymphadenopathy
- Subclinical infection is common; patients may present with no signs

DIAGNOSIS & TREATMENT

- Draw blood on patients with current or past tick infestation.
- Screen asymptomatic patients for relevant pathogens and perform a CBC; symptomatic patients require additional tests (eg, serum chemistry panel, urinalysis to screen for proteinuria).
- Coinfections are possible, and our diagnostic ability can be limited; an expanded tick profile may be utilized to detect other pathogens when a patient's initial screening (clinically affected) is positive.
- If necessary, identify tick species via microscope to determine risk for specific vector-borne diseases.
- Remove large numbers of ticks manually and/or by bathing.
- Multiple products can eliminate ticks within 24–48 hours.
- Only fipronil and flumethrin are approved for cats.



- Isopropyl myristate (Resultix, bayerdvm.com) can be used directly on attached ticks (useful for heavy infestations).
- Low-grade infestations may be addressed by removing individual ticks (see **Step 7**).
- Based on signs and results (eg, epistaxis, petechiae/ecchymoses, anemia, thrombocytopenia), initiate treatment; patients that test positive but exhibit no signs should be monitored.

PREVENTION

- Every team member needs to stress that disease transmission may have already occurred.
- All dogs and outdoor cats should receive year-round prevention approved for use in that species (eg, monthly topicals, collars containing acaricides).
- Clients may reduce their pet's exposure by limiting time spent outdoors, treating the environment with acaricides, or discouraging contact with alternative hosts (eg, deer).

STEP 2 Team Education Primer ►

Ticks *at a Glance*

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Tick species and populations vary according to region, ecology, and environmental patterns.* The veterinary team is the first line of defense against the transmission of tick-borne diseases, and education is the best weapon.

COMMON TICKS & DISEASES THEY TRANSMIT

- **Lone Star Tick (*Amblyomma americanum*):** Noted for its long mouth parts and a single white spot on the back of adult females. Found in wooded areas and grassy meadows. Associated with white-tailed deer. Potential pathogens transmitted include *Ehrlichia chaffeensis*, *E. ewingii*, *Francisella tularensis*, and *Cytauxzoon felis*.
- **Gulf Coast Tick (*Amblyomma maculatum*):** Mouth parts are similar in length to the Lone Star tick, but the scutum (back plate) is more ornate and lacks a white dot. Range is also limited compared with the Lone Star tick. Capable of transmitting *Hepatozoon americanum* and *Rickettsia parkeri*.
- **Blacklegged Tick (*Ixodes scapularis*):** Also known as the *Deer tick*, identified by long mouth parts and a black scutum on the adult female. As suggested by its nickname, also is associated with white-tailed deer. Capable of

transmitting *Borrelia burgdorferi* (Lyme disease), *Anaplasma phagocytophilum*, and *Babesia microti*.

- **American Dog Tick (*Dermacentor variabilis*):** Found in Eastern and Central U.S., as well as areas of the Pacific Coast. Identified by a distinctive ornate scutum and short mouth parts. Commonly encountered along roadways and trails and in forests. Potential vectored pathogens include *Rickettsia rickettsii*, *Francisella tularensis*, and *Cytauxzoon felis*.
- **Brown Dog Tick (*Rhipicephalus sanguineus*):** Identified by short mouth parts and a brown scutum. Thrives in dry environments. This tick is a 3-host tick but is unique in that



*Geographic references are generalized; the Centers for Disease Control and Prevention (cdc.gov/ticks) can be referenced for ticks specific to individual regions.



all 3 hosts can be dogs, or the same dog, accounting for home and kennel infestations. Agents vectored include *Ehrlichia canis*, *E ewingii*, *E chaffeensis*, *Rickettsia rickettsii*, *Babesia canis*, *B gibsoni*, *Hepatozoon canis*, and possibly *Anaplasma platys*.

• **Rocky Mountain Wood Tick (*Dermacentor andersoni*):**

Like the American Dog tick, commonly found along roadways, trails, and in forests of the Rocky Mountain region. Can potentially transmit *Rickettsia rickettsii* and *Francisella tularensis*.

• **Western Blacklegged Tick (*Ixodes pacificus*):**

Like the Blacklegged tick, transmission of organisms responsible for anaplasmosis and Lyme disease is possible. Commonly found near the West Coast.

ENVIRONMENTAL CONTROL

- Remove brush piles and mow and trim tall grass
- Avoid attracting deer and control other hosts (eg, mice)
- Apply environmental acaricides to yards, kennels, or other areas where dogs congregate

PATIENT-SPECIFIC CONTROL

- Keep cats indoors
- Treat outdoor cats with approved acaricides year-round
- Use topical acaricides year-round; consider the strategic application of additional products for patients with high exposure (eg, hunting dogs)
- Use long-acting collars, which are effective and may improve compliance

Every year, client misconceptions about ticks lead to needless morbidity from tick-borne illnesses. Although many clients have strong doubts about the need for year-round protection, client education—especially when presented without judgment—saves lives. Every team member can help clients make good decisions by knowing the facts and communicating them with conviction.

STEP 3
Communication Keys ▶

Conversation Opportunities

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Whether discussing preventive medications, proper removal, or vector-borne diseases, every practice team member will have the opportunity to communicate with clients about ticks. Common conversations between clients and team members include:

The Case: A client, panicked and uncertain, calls after finding an engorged tick(s) on his or her pet

Ticks do not die just because it is winter.

CLIENT

I'm so glad you answered the phone: I just got back from a walk with Truman and when I took off his harness I felt a big lump. I thought it was a growth, but when I looked closer I realized it was a tick...and I don't know which is worse! I feel horrible—it has obviously been there for a long time. What should I do?

RECEPTIONIST

I know how you feel, Mr. Jones—seeing a tick on your pet can be very unpleasant! Don't feel badly; lots of owners don't realize the tick is there until it becomes engorged, and Truman has such long hair.

The best thing to do is to bring Truman in to see a technician who will be happy to remove the tick and look him over to check for others. As I look through his record, I notice tick preventives have not been purchased in recent years. Has it been purchased

elsewhere? I can make a note to have the technician review recommended preventives so you can choose the one that is best for Truman. Year-round prevention is the best way to keep him safe. Can you bring Truman by in the next hour or so?

The Case: Groomers and kennel attendants often find ticks on a patient. A conversation should take place with the client, either on the phone or at discharge

GROOMER/KENNEL ATTENDANT

Sammy was absolutely wonderful today, but I did find 2 ticks—one was behind his ear and the other on his chest. I had the technician remove them, but I wanted to talk to you about whether he is on preventive medications.

CLIENT

Well, because we walk in the woods almost every day, I bought something at the store this summer, but I haven't applied it since October when it cooled off. We had that freeze, so I figured all the ticks died.



GROOMER/KENNEL ATTENDANT

Believe it or not, ticks don't die just because it's winter, which is why we highly recommend year-round prevention as the best defense against tick-borne diseases. If you have a few minutes, a technician can review the products we recommend and help you determine which would be best for Sammy, especially since he is lucky enough to go for long treks in the wild!

The Case: While the technician collects information before the examination, he or she notices that the patient is not current on tick preventive medication

TECHNICIAN

Ms. Larue, according to our records, Sadie is not currently on tick prevention. Can you let me know if you purchased it elsewhere so I can add it to her medical record?

CLIENT

No, I haven't purchased it elsewhere, but it is cold outside, and Sadie barely goes out. We live in a highly developed neighborhood, so her chances of being bitten by a tick are really nonexistent. You probably remember her knee surgery last

year—and it cost a fortune—so I'm just trying to save money where I can.

TECHNICIAN

I completely understand, and I know you take such amazing care of Sadie. My concern is that if she goes unprotected she risks being infected with a vector-borne disease, including Lyme disease, which can be devastating in humans and their pets. Feel free to ask the veterinarian any questions, and I'll come back after the examination and see what you would like to do. Sound like a plan?

The technician should document this conversation in the medical record, as well as notify the veterinarian about the discussion so that he or she can follow up with the client.

An unprotected patient risks being infected with a disease, including Lyme disease, which can be devastating in humans and pets.

The Companion Animal Parasite Council (capcvet.org) is an essential resource for information and training materials on parasitic diseases. Its website includes a variety of tools and resources, including parasite prevalence maps, videos, and free client education brochures—including *Ticks and Your Pet*—that can be printed or delivered straight to the practice.

STEP 4
Team Workflow ►

Team Workflow



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RECEPTIONIST

- ✓ Greet the client and patient by name
- ✓ Ask the client if he or she needs any refills of flea or tick preventives
- ✓ If the patient record does not show previous purchase of a preventive, ask the client if he or she has purchased a product elsewhere and document the conversation in the record
- ✓ Offer the client a brochure to review in the waiting area
- ✓ Communicate the patient's prevention status to the technician so he or she can resume the conversation

TECHNICIAN/ASSISTANT

- ✓ Greet the client and patient by name and escort them to the examination room
- ✓ Review all current medications and reference the receptionist's specific notations regarding flea/tick prevention
- ✓ Ask the client if he or she has any questions about vector-borne diseases, the importance of year-round prevention, or any other information in the brochure
- ✓ When appropriate, refill the current preventive medication or give advice about the most suitable product for purchase (if the patient has skin issues, have the veterinarian review the recommendations)
- ✓ If a client purchases a topical medication for the first time, apply the first dose so the client can see how to do it at home
- ✓ If the client is still hesitant to purchase preventive medication, document the conversation in the record and let the veterinarian know to reiterate the practice's message and recommendations

VETERINARIAN

- ✓ Commend the client for choosing annual prevention, or revisit the subject if the client has not committed
- ✓ Review vector-borne diseases in detail, focusing specifically on those most common in the area
- ✓ When possible, politely reinforce the message by telling a story of another patient that did not receive prevention and was diagnosed with a vector-borne disease
- ✓ Recommend that the client keep the brochure for reference and provide education on proper tick removal
- ✓ Document all conversations in the medical record

RECEPTIONIST

- ✓ Congratulate the client on choosing year-round tick prevention, if applicable
- ✓ Review the product, dosage, and application instructions
- ✓ If a client seems nervous about the application process, welcome him or her back to the practice for a free application demonstration
- ✓ If the client purchases a tick prevention collar, note in the patient's record to remind the client when the collar's efficacy period is ending

STEP 5 Team Roles ▶

Team Roles

| TEAM MEMBER | ROLE | RESPONSIBILITIES |
|------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RECEPTIONIST | Patient/client bonding expert and educator | <ul style="list-style-type: none"> ✓ Keep clients calm if an engorged tick is found ✓ Understand the importance of year-round prevention and the basics of vector-borne diseases ✓ Know the most prevalent ticks in the area and the diseases they transmit |
| TECHNICIAN/ ASSISTANT | Client educator | <ul style="list-style-type: none"> ✓ Know the most prevalent ticks in the area and the diseases they transmit ✓ Be able to educate clients on the importance of year-round tick prevention ✓ Be able to remove a tick safely and correctly (using tweezers to grasp the tick as close as possible to the skin or using commercial tick-removal products) |
| VETERINARIAN | Medical expert and client educator | <ul style="list-style-type: none"> ✓ Help determine the preventives that will be carried in the practice and offered through the online pharmacy ✓ Know the most prevalent ticks in the area and the diseases they transmit ✓ Know the signs and treatment protocols for specific vector-borne diseases ✓ Determine when a blood panel should be recommended, based on the signs and/or the risk assessment |
| PRACTICE MANAGER | Team and client education supervisor | <ul style="list-style-type: none"> ✓ Schedule and plan an annual staff meeting on ticks and vector-borne diseases ✓ Order and maintain a stock of practice brochures (both CAPC and product-specific) ✓ Remain current on available preventive medications and keep doctors apprised of any new products and their potential benefits ✓ Order preventives, avoiding duplication to keep inventory at a minimum |



STEP 6 Team Training Plan ►

The Truth About Ticks

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Vector-borne diseases and ticks are such important topics that a staff meeting should be dedicated annually to education—preferably in the spring. Even if the practice does not have a high turnover of team members, a refresher will not hurt. The entire team will be exposed to client questions about ticks, and every member *must* provide accurate information based on the practice's recommended protocols.

Empower some team members to become the experts and go-to sources about ticks and vector-borne diseases.

It is the practice manager's role to schedule and plan this meeting, as well as provide educational materials on:

- Specific practice protocols and recommendations for prevention and testing
- Types of ticks and the most common diseases in the area
- Signs of disease
- Tick removal
- Preventives and application methods used in the practice

Many practices invite a sales representative from their preferred product's manufacturer to talk about all or part of this material with the team. Consider also inviting one of the company's staff veterinarians to make part of the presentation.



Another idea is to empower one of the practice's veterinarians and/or technicians to make a presentation. These individuals then become team experts and go-to sources for questions about ticks and vector-borne diseases.

STEP 7
Client Handout ►

Busting the Tick Myths

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| THE MYTH | THE TRUTH |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ticks die off during winter. | Ticks do not die just because it is winter. They do become less active during cold months but can still attach to your pet—and transmit potentially deadly diseases. |
| I never see ticks on my pet, so we do not have ticks in our area. | Ticks are present throughout the U.S. The 3 life stages capable of attaching to pets (nymph, larva, and adult) are very small. Unless there are dozens of ticks present, or the ticks have fed long enough to become engorged (about 7 days), most infestations go unnoticed. |
| Ticks should be removed with alcohol, a lit match, nail polish, petroleum jelly, etc. | The best removal method is grabbing a tick with tweezers as close to the skin as possible and using gentle, steady traction to lift it. Other methods may facilitate the transmission of infectious agents. |
| Ticks fall from trees. | Ticks live on and just above the ground. When the host approaches, they release from low vegetation and attach to the animal. |
| Those medications do not work—I still see ticks. | No product is 100% effective. Consider this: If a pet encounters 1,000 ticks, a product with 99% efficacy (considered excellent by medical standards) may still leave 10 ticks. With very high exposure, additional measures may be necessary to protect your pet. |
| My dog does not go outside, so I don't need to worry about ticks. | Does your dog go outside to relieve him- or herself? Even a short excursion increases the risk for ticks. |
| I'll start using medication if I see ticks. | Prevention is better for your pet and more cost-effective for you. By the time ticks are detected, disease transmission may have already occurred. |
| I treat my yard, so my pet does not need medications. | Environmental control is <i>great</i> , but it is one of many components of effective tick control and alone is not enough. Combining yard treatment, minor landscaping changes, and—most importantly—year-round preventives for your pet will keep him or her safer. |