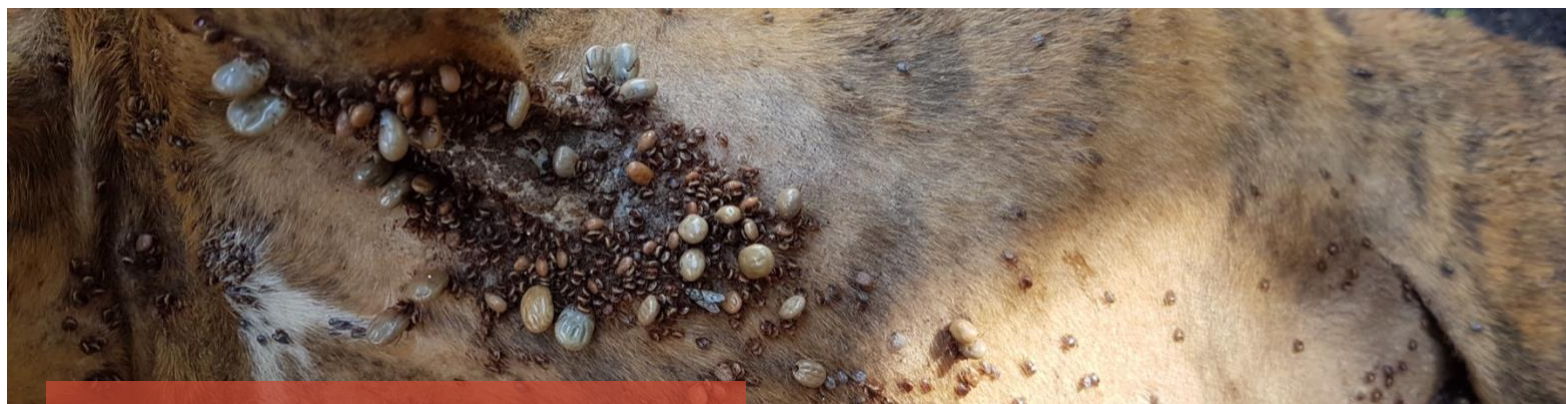


EHRlichiosis

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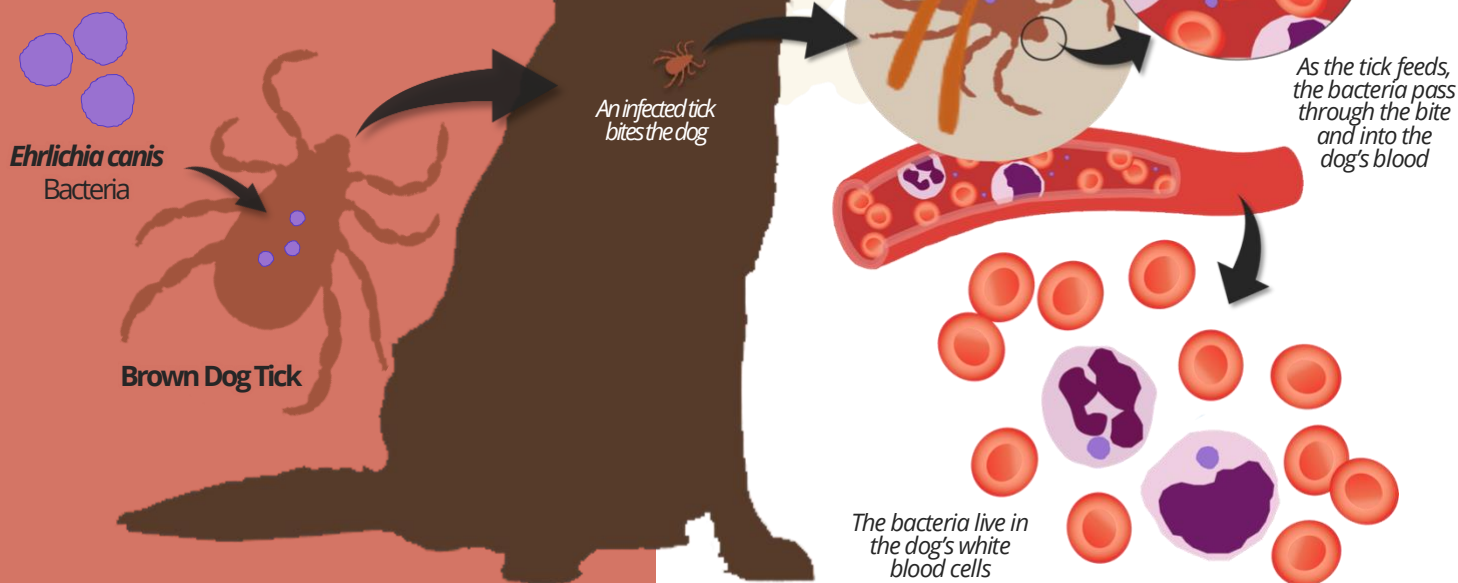
What is Ehrlichiosis?

Ehrlichiosis is a serious and deadly disease in dogs that is caused by the bacteria *Ehrlichia canis* (sometimes referred to as *E. canis* or simply *Ehrlichia*). Ehrlichiosis is a tick-borne disease, meaning that it is spread between dogs by ticks, specifically the Brown Dog Tick. Dogs can only become infected with ehrlichiosis after being bitten by an infected tick. The bacteria cannot be spread directly from dog to dog (or from dogs to people), The bacteria is quite unique because it gets into the dog's bloodstream and lives inside the dog's blood cells, which allows it to hide from the dog's immune system.

Infection with *Ehrlichia canis* is a nationally notifiable disease.

If you suspect the presence of *E. canis* in any dog in your community, you must report it to your local veterinary service provider or contact the Emergency Animal Disease Hotline at: **1 800 675 888**

How is *Ehrlichia canis* spread?

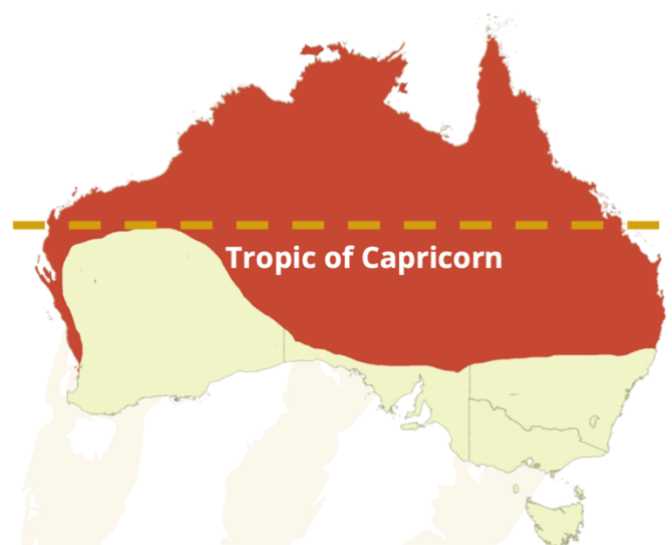


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Australian states and territories (yellow shading) where *Ehrlichia canis* has been detected in dogs.



Approximate distribution of the Brown Dog Tick in Australia. Adapted from DAFF (2022b).

Canine Ehrlichiosis in Australia

Ehrlichiosis was first detected in dogs in Western Australia, in May 2020 but has since been found in areas of northern South Australia, the Northern Territory and Queensland. Dogs in areas with large numbers of Brown Dog Ticks are the most likely to get ehrlichiosis. As ticks carrying *E. canis* spread across Australia, there is the potential for infection with *E. canis* to occur in any area where Brown Dog Ticks can be found, particularly in areas north of the Tropic of Capricorn (see the map, above), where Brown Dog Ticks are most common.

What are the signs of ehrlichiosis?

In countries where ehrlichiosis has been around for a long time, many of the dogs that get ehrlichiosis will have mild symptoms that are often treatable. In Australia where the disease is new, the dog populations have no previous exposure to the bacteria, which means that the disease can be much more severe or even deadly. This is especially true for dogs that do not receive proper veterinary care early in the course of the disease. The main symptoms of infection are lethargy, not wanting to eat, weight loss and fever. Some dogs may have cloudy or goopy eyes, nose bleeds or abnormal bleeding. Any dog with symptoms of ehrlichiosis needs to be seen by a vet.

Ehrlichiosis has three phases:

- **Acute Phase:** dogs usually start getting sick 1-3 weeks after they have been bitten by an infected tick. Dogs can show different symptoms including lethargy, loss of appetite, weight loss, pale gums, or fever. Affected dogs may also be prone to bleeding, leading to bloody noses, or bruises on the skin. Some dogs may develop eye problems that makes their eyes look cloudy. Even though dogs may get very sick, they often survive this stage with or without treatment.
- **Subclinical Phase:** even if the symptoms of ehrlichiosis seem to go away, dogs that do not receive proper treatment may enter the “subclinical phase”. During this phase affected dogs will appear normal. This makes people believe the dog has recovered from the illness. But in reality, the bacteria is simply hiding out in the body causing further damage. In fact, the bacteria hide out for months to years, before causing symptoms again.
- **Chronic Phase:** dogs that enter the chronic phase of the disease will get sick again. But this time, the sickness is usually more severe. These dogs will often become skinny, are prone to bleeding and infections, and may also have problems with their kidneys. This phase of the disease is much more serious and life-threatening, even with proper treatment.

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Dog showing weight loss, loss of body condition and cloudy eyes, consistent with ehrlichiosis.

Prevention

There is no vaccine available to protect dogs against ehrlichiosis. But since ehrlichiosis is a tick-borne disease, by controlling the ticks, you can help control the spread of the disease. Effective control of ticks requires both tick prevention for the dog, as well as pest controls that limit opportunities for tick exposure.

To help prevent ehrlichiosis:

1. Dog owners should use an effective tick prevention and control program.
2. Dogs should be checked for ticks daily.
3. Avoid travelling with dogs to areas where *E. canis* has already been detected.
4. Minimize movement of dogs into and out of the community.
5. Avoid taking dogs into areas where ticks may hide, such as bushy areas with high grasses or leaf litter.
6. Contact a licensed pest controller to manage tick infestations in houses or yards.
7. Grasses in yards and public areas should be mowed regularly to keep grass short.

Tick Prevention and Control Programs

To protect dogs from the Brown Dog Tick and other ticks that can make the dog sick, regular, year-round, tick prevention and control is recommended. LGAs that are interested in looking at options for tick control and prevention for their community should talk to their veterinary service provider.

While tick treatment and prevention are the responsibility of animal owners, LGAs should be familiar with available tick repellents and preventatives. When parasite prevention is used regularly on dogs in the community, it can help to reduce the overall population of ticks in the area. LGAs can support their communities by helping to ensure effective, safe, and affordable tick medicines are available to pet owners and by promoting regular use of parasite treatment. There are two main types of medicines that can help prevent ehrlichiosis: tick repellents and tick preventatives.



FIRST LINE OF DEFENCE
Tick Repellent
(i.e. Seresto® collar, Kiltix® collar or Advantix® spot on)



SECOND LINE OF DEFENCE
Tick Preventative
(i.e. Chews such as Nexgard®, Bravecto®, Simparica® or Credelio®)

Tick Repellents – First Line of Defence

The best way to prevent the spread of *Ehrlichia canis*, is by preventing Brown Dog Ticks from biting and attaching to dogs. While there are many tick-prevention products available that can kill ticks, not all the products kill fast enough to stop the tick from spreading the bacteria to the dog.

Products like **Seresto® and Kiltix® Collars** or **Advantix® Spot On** repel and kill ticks “on contact” meaning that the tick does not have to bite the dog to be killed by the treatment. These are the best products available for preventing the spread of *Ehrlichia canis* and are especially important in areas where the disease has already been detected.

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Tick Preventatives – Second Line of Defence

Most tick preventatives do not act quickly enough to stop the tick from feeding on the dog and spreading *Ehrlichia canis*. But tick preventatives still play an important role in reducing tick populations in communities. Year-round, tick prevention is recommended for all dogs, especially those that live in areas where the Brown Dog Tick may be living.

Products like **Nexgard®**, **Bravecto®**, **Simparica®** and **Credelio®**, are very effective and widely used for tick prevention. While these products can be used at the same time as tick repellents (e.g. **Seresto® Collars**) to provide the greatest possible protection against ticks, dog owners should speak to their veterinary service provider before combining any parasite preventatives.

Tick preventatives must be given regularly to provide continuous protection against ticks. The table below shows how long common medicines for tick control are effective against the Brown Dog Tick. This timeframe also reflects the dosing interval (how often the treatment must be given) to provide continuous tick protection (for example the Seresto® collar needs to be replaced every 4 months to provide continued protection against ticks).

Product	Duration of Protection Against Brown Dog Ticks
Tick Repellents	
Seresto® Collar	4 Months
Advantix®	1 Month
Kiltix® Collar	5 Months
Tick Preventatives	
Bravecto® Chew	2 Months
Bravecto® Spot On	3 Months
Nexgard®	1 Month
Nexgard Spectra®	1 Month
Simparica®	1 Month
Simparica Trio®	1 Month
Credelio™	1 Month
Credelio™ Plus	1 Month

Table showing some of the tick repellents and tick preventatives that claim to be effective against Brown Dog Ticks, and their duration of action.



Caution – Never use more than one tick treatment or parasite treatment at the same time without speaking with your veterinary service provider, as some combinations can be dangerous.

While repellents, like tick collars, can be safe to use with preventatives like Bravecto® or Nexgard®, consultation with your veterinary service provider is strongly recommended before combining tick repellents, preventatives, and any other parasite medicines, as some combinations can have adverse effects. Your veterinary service provider is the best resource for planning tick control and ehrlichiosis prevention programs in your community.

Choosing the Right Tick Treatment

There are many different options for tick control and prevention that are available through AMRRIC or your local veterinary service provider. Unfortunately, no single product is the best choice for every community. For example, while Seresto® collars are one of the best options for preventing ehrlichiosis, in communities where dogs are not used to wearing collars, the dogs may quickly lose the collar. If the collar doesn't stay on the dog, it cannot provide protection against ticks. In these circumstances, community-wide dosing of chewable products will suppress the overall tick population and may be a better method of ehrlichiosis risk reduction. Talk to your local veterinary service provider or AMRRIC to determine the best tick and parasite prevention program for your community.

Some things to consider when choosing tick medicines:

1. Has ehrlichiosis already been found in your community?
2. Is the Brown Dog Tick likely to live in your area?
3. Does the medicine prevent any other parasites that may be present in the community?
4. How long does the medicine last?
5. Is the medicine easy to give?
6. Is the medicine safe for people and animals?
7. How much does the medicine cost?



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Keeping Ehrlichiosis Out of Your Community

Although the Brown Dog Tick will occasionally bite other animals and even people, dogs are their preferred host. *Ehrlichia canis* also appears to be quite dog-specific, although in rare cases, people and possibly cats can also be infected. Because dogs are the main host, limiting the movement of dogs in and out of the community can drastically reduce the risk of ehrlichiosis for communities where it has not yet been reported. This includes dogs that live in the community but travel to other areas (for example pig hunting dogs).

While restricting dog movement can be challenging, especially in mainland areas, LGA's can consider implementing policies and procedures that help to reduce the likelihood of dogs bringing ehrlichiosis into the community. One of the challenges in managing ehrlichiosis is that the tests that are currently available must be performed at a laboratory and may come back as negative even if the dog has ehrlichiosis (especially for dogs that are not showing any signs of sickness). This means that the tests cannot always reliably distinguish between a dog who has been exposed, and one that has not. These tests can also be expensive, they need to be performed by a veterinarian, and it can take quite a while for results to come back.

Since routine testing of dogs coming into communities may not be the best or most practical option, LGA's can consider implementing the following measures to reduce the likelihood of ehrlichiosis coming into their community.

1. **Awareness:** LGA's can help to increase community awareness about ehrlichiosis, how it spreads, and educating the community about the risks of moving dogs in and out of the community.
2. **Owner Declaration:** Requiring dog owners or caregivers to sign a declaration before entering the community saying that their dog has not been previously diagnosed with ehrlichiosis and is not showing signs of the disease. Ideally this would be confirmed by a veterinarian, Biosecurity Officer, Animal or Environmental Health Worker or Ranger that is familiar with the symptoms of ehrlichiosis. This



Puppy showing signs of Ehrlichiosis

- reduces the risk of sick dogs coming into the community.
3. **Health Check on Arrival:** all incoming dogs to be checked for signs of ehrlichiosis or external parasites before entering the community or upon arrival by a veterinarian, Biosecurity Officer, Animal or Environmental Health Worker or Ranger who is familiar with the symptoms of ehrlichiosis. This helps to ensure that animals coming into the community are free of parasites and are not showing any signs of ehrlichiosis.
 4. **Tick Control:** All dogs that enter the community be treated with an effective tick control 3-7 days prior to entering the community, to reduce the chance of dogs bringing ticks with them into the community from other areas. This helps to prevent the dog from bringing ticks carrying *Ehrlichia canis* into the community.
 5. **Tick Prevention:** Because dogs can have ehrlichiosis without showing any symptoms, ideally dogs entering the community, especially from high-risk areas, should be kept on regular parasite prevention for as long as they are living in the community. This helps to prevent dogs that have ehrlichiosis but are not showing signs of disease from spreading the disease to other dogs.

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Council Pounds & Rehoming

Many councils operate pounds and are involved in rehoming and adoption of dogs, either directly or by working with rescue groups. With ehrlichiosis now in Australia, pounds and rehoming facilities now have new challenges and ethical decisions to make to keep dogs and communities safe. Because ehrlichiosis can be a serious and life-threatening disease, pounds need to consider the health and safety of both the dogs in their care, as well as the rest of the community or other communities the dog may be transported to.

We know that some dogs that are treated by a veterinarian early in course of the disease can recover and go on to live normal lives. But we also know that dogs that are infected with ehrlichiosis may show no signs at all but can eventually develop chronic ehrlichiosis. Even with treatment, dogs with chronic ehrlichiosis often die from the disease.

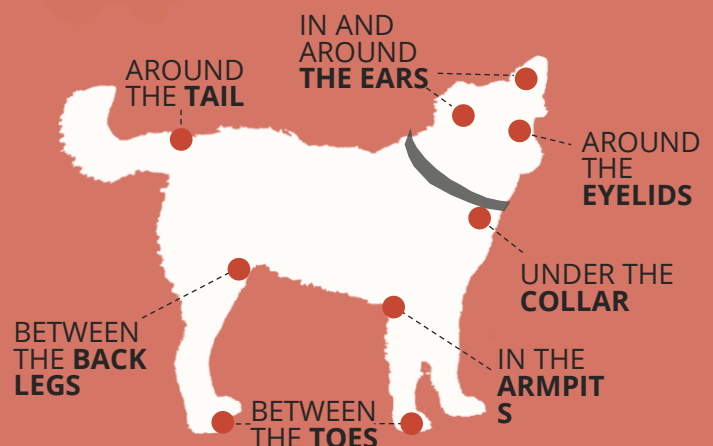
Working with their vet service provider, pounds should develop policies and procedures for testing, treatment, and/or euthanasia of impounded animals that develop symptoms or are diagnosed with ehrlichiosis. Some of the procedures pounds can put into place to help reduce the spread of ehrlichiosis include:

1. **History:** Where possible, a detailed history should be obtained for all dogs that enter the pound, including where the dog came from, areas where it has travelled and any history of tick treatment or prevention.

2. **Testing:** Dogs showing symptoms of ehrlichiosis or dogs that have come from areas where ehrlichiosis has been detected/may be presented should be tested for the disease before they are rehomed.
3. **Treatment or Euthanasia:** Dogs that test positive for ehrlichiosis should be treated by a registered veterinary service provider or euthanised if they are already sick and have serious symptoms, or if treatment is not an option.
4. **Tick Repellent:** Tick repellent products should be used on all impounded animals that live in or have travelled from areas of northern Australia where the Brown Dog Tick may be present. Speak to your veterinary service provider about the best options for tick prevention and control.
5. **Tick Prevention:** Dogs that are diagnosed with ehrlichiosis or are from areas where ehrlichiosis may be present should be treated with a tick prevention for the life of the dog to help prevent the spread of disease to other dogs in the pound or in the community.
6. **Legal Requirements:** If the pound rehomes animals outside the community, speak with your veterinary service provider about the legal requirements for the movement of dogs and other procedures to limit the risk of spreading ehrlichiosis to other communities.

Checking Dogs for Ticks

Pound staff and people working with dogs in areas with Brown Dog Ticks should know how and where to check for ticks on dogs. A proper tick check includes both looking at the dog, as well as gently feeling the dog all over its body, going against the grain of the fur. Ticks can be found anywhere on the dog's body, but there are some areas where ticks are more likely to hide, which are outlined on the diagram on the right.



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Are People at Risk?

Ehrlichiosis is not contagious, meaning that people can't get ehrlichiosis from their dog. But in rare cases, infected ticks can bite and infect people. Since people get ehrlichiosis from a tick bite can become quite sick, using proper preventative measures, including tick repellents and tick preventatives protect dogs in your community can also help to prevent people from being exposed to brown dog ticks.

More Information



AMRRIC has many ehrlichiosis resources freely available on its website for both local governments and dog owners. Scan the QR Code to access AMRRIC's ehrlichiosis resources.

Remember that ehrlichiosis is a notifiable disease in all states and territories across Australia.

For further information about ehrlichiosis in your state or territory or to find information about reporting a case of ehrlichiosis in your area, please click on the map below.



Ticks in the ear of a dog.



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