

## Tick-borne diseases

The clinical symptoms of tick-borne disease are frequently unspecific and early diagnosis is not always easy. Unfortunately it is not rare that diagnosis is done too late. In the following the most relevant symptoms of tick-borne diseases are summarized.

- **Anaplasmosis**, caused by several species of the genus *Anaplasma*, a rickettsial microorganism. Often the only noticeable symptom is **high fever**. Other signs can be lack of appetite, weight loss, diarrhea, vomiting, inflammation of the joints with paralysis, neurological symptoms. This disease **can also affect humans**.
- **Babesiosis**, (also called **piroplasmiasis**) caused by several species of the genus *Babesia*, unicellular microorganisms (protozoan). It causes high fever and often dark brownish urine. An acute outbreak can easily kill the pet. If the pet overcomes the acute phase, general weakness, lack of appetite, weight loss and jaundice can follow. Canine babesiosis does not affect humans. Other *Babesia* species can be pathogenic for humans.
- **Borreliosis**, caused by several species of the genus *Borrelia*, a bacterial microorganism agent of **Lyme disease**. Initially fever, lack of appetite and lethargy are often noticed. Later swollen, painful joints and paralysis, often intermittent. In its final stage heart, liver and/or kidney damage can follow with mostly fatal development. This disease **can affect also humans**.
- **Ehrlichiosis**, caused by bacteria of the genus *Ehrlichia*, a rickettsial microorganism. It can take years to show clinical symptoms. Tiredness, reluctance to walk and lack of appetite are usually the first signs. Nasal bleeding, swollen limbs, rash, coughing and difficult breathing, blood in urine and spitting may also develop. If left untreated it becomes easily chronic and fatal development is not uncommon. This disease **can occasionally also affect humans**.
- **Meningoencephalitis**, caused by a **virus** (can be caused by other microorganisms unrelated to ticks). Clinical signs are seldom. They have been reported mainly for large dogs with fatal development. They include fever, neurological signs (epileptic attacks, hyperexcitation, motor dysfunction, etc.). This disease **can also affect humans**.
- **Tick paralysis**, caused by toxins of certain tick species. Signs develop a few days after the tick's bite and include general weakness that develops to paralysis of the hindlimbs. Soon after complete paralysis of the limbs. In case of respiratory paralysis preceded by difficult breathing death can follow in a few more days. Tick paralysis is rare in humans; children are more at risk.
- **Hepatozoonosis**, caused by several species of the genus *Hepatozoon canis*, a protozoan microorganism. Infection is not acquired through a tick's bite but through swallowing or chewing a tick. Most infections remain unnoticed and have a mild development without clinical signs. If the disease breaks out the symptoms depend on the affected organs. Fever, anemia, weight loss, swollen lymph nodes, nasal and ocular exudation, bloody diarrhea and muscular weakness have been described. Severe cases can be fatal due to irreversible organ damage. This disease does not affect humans.