

known, but it is certainly an outdated fallacy that a tick must remain attached for two days. It makes sense that the longer a tick is attached, the more chance you have of being infected by any disease that it carries. However, some research has shown that at least one of the tick-borne diseases, Ehrlichia, can be transferred almost immediately.

If an infected tick bites me, will I become ill?

The majority of people who are bitten by a tick, do not experience disease symptoms. In some instances this will be because the tick was not infected. In other cases people can remain asymptomatic (without symptoms) although they do actually carry the disease. Some of these people may never have symptoms, while others can start to experience illness at a later time in their life. However, some victims can start feeling noticeably ill within days or weeks of being bitten. The majority of people may never make the link between their illness and a tick bite.

How many people remain undiagnosed or misdiagnosed?

There is a widespread lack of knowledge and awareness in Britain regarding tick-borne diseases. Many people with typical symptoms will not actually be tested for the presence of even the most common of the diseases. For those who are tested for one or more of the possible diseases, a negative (and thus inconclusive) test will generally result in further investigation being abandoned. Few people will be lucky enough to see a GP with sufficient knowledge to give a clinical diagnosis, i.e. based on symptoms, knowledge of a tick bite event, etc. For many years, criticism has been aimed at the clinical unreliability of laboratory tests. It is suggested that official statistics for prevalence of tick-borne diseases in Britain are an underestimate of the true picture.

It is likely that the majority of people suffering from tick-borne diseases do not receive treatment at all because they remain undiagnosed or misdiagnosed.

In Britain, medical education is highly variable regarding diseases transmitted by ticks. Much reference literature about diagnosis and treatment protocols requires updating. It may be left to you, the patient, to continue to emphasise that symptoms were linked to a tick bite.

Further Information

All our leaflets are available free of charge from our website where you can find more about Lyme disease, including links to many other resources. www.lymediseaseaction.org.uk

Leaflets are also available from:

**Lyme Disease Action,
PO Box 235, Penryn. TR10 8WZ. UK**

Including a donation/sae will help us in our work for people affected by Lyme disease.

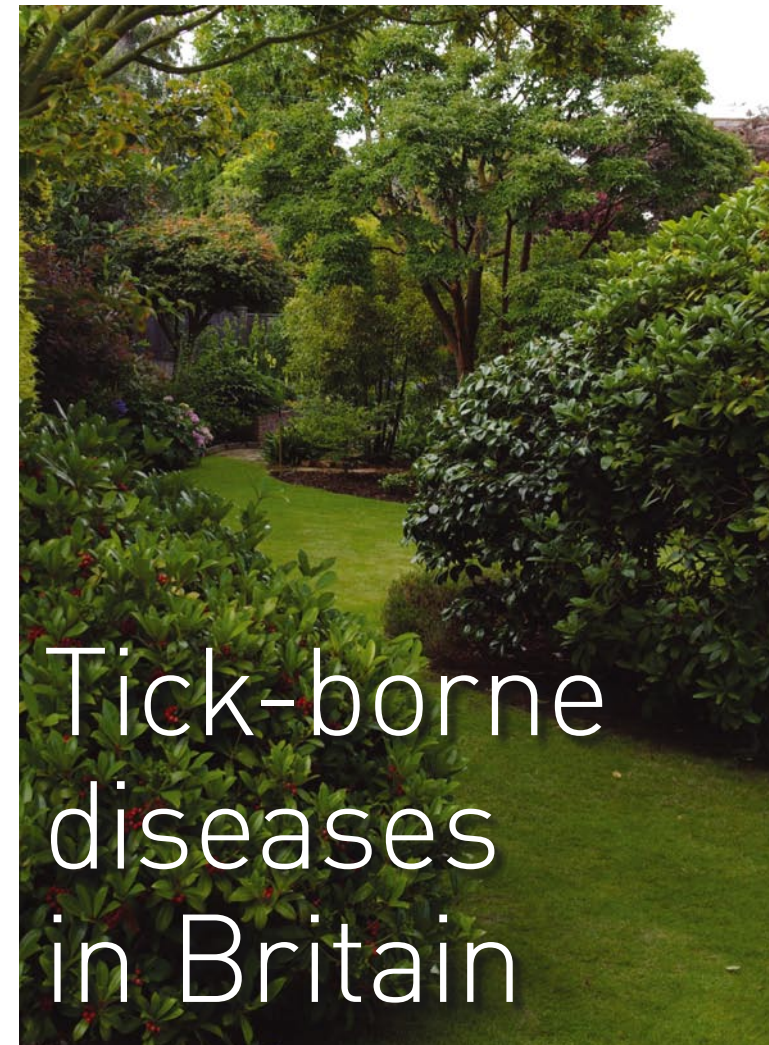
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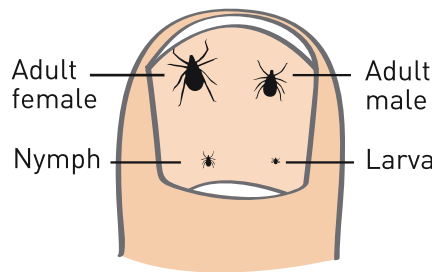


Tick-borne diseases in Britain

What are ticks and what do they look like?

Ticks are small, blood sucking arthropods related to spiders, mites and scorpions. There are many different species of tick living in Britain, each preferring to feed on the blood of different animal hosts. If given the opportunity some of them will feed on human blood too.

There are three stages of the life-cycle: larva, nymph and adult.



Illustrations are for general guidance and do not represent any particular species.

What diseases can a tick carry?

Three of the diseases that can be caught from a tick bite in Britain are, Lyme borreliosis, Babesiosis and Ehrlichiosis. Globally, the list of diseases is much longer.

1 Lyme disease or Lyme borreliosis [bore-EL-ee-OH-sis] is caused by bacteria called Borrelia. Early symptoms can develop within weeks. They may include tiredness, chills, fever, headache, muscle and/or joint pain, swollen lymph glands and blurred vision. A characteristic skin rash called erythema migrans may appear. It is generally a circular rash that may clear in the centre, resulting in a "Bull's eye" appearance. It can expand and move around the body.

If early symptoms are not recognised, serious complications can develop weeks, months, or even years later. Later stage symptoms include arthritis in the large joints, which can recur over many years. Nervous system problems are common, e.g. numbness, meningitis (with fever, stiff neck and severe headache), Bell's palsy (paralysis of the facial muscles) and memory problems. Some people experience irregularities of the heart rhythm.

Lyme disease should be diagnosed by a physical examination and medical history. This clinical diagnosis may in some cases be supported by laboratory testing. Diagnosis based on tests alone is not reliable – a negative result does not mean that the disease is not present. Symptoms can mimic those of other diseases. Diagnosis is easiest when there is a skin rash but this occurs in under 50% of patients.

2 Babesiosis [bab-EE-see-OH-sis] is caused by the Babesia parasite, an organism similar to that causing malaria. This attacks the red blood cells and its existence can only be shown by laboratory identification of the parasite. Symptoms, if any, begin with tiredness, loss of appetite and a general ill feeling. In severe cases, as the infection progresses, fever, drenching sweats, muscle aches and headache can follow, leading to complications such as very low blood pressure, liver problems, severe haemolytic anaemia (a breakdown of red blood cells) and kidney failure. Other cases usually have a milder illness and often get better on their own. The symptoms can take from 1 to 12 months after the tick bite to appear and can last from several days to several months.

3 Ehrlichiosis [air-LICK-ee-OH-sis] is a bacterial attack upon the white blood cells. Symptoms usually appear 3 to 16 days after a tick bite.

The most common symptoms are sudden high fever, tiredness, major muscle aches, severe headache, and, in some cases, a rash. Diagnosis is difficult, even in severe cases. Diagnostic tests are not widely available and the diagnosis of Ehrlichiosis is usually based on symptoms and a history of exposure to ticks. Severely ill patients can develop abnormally low numbers of white blood cells or platelets and kidney failure.

Some ticks carry all three of the above diseases at the same time and can transfer them to you in a single bite. The resulting symptoms can be extremely confusing and liable to misdiagnosis. Treatment in such cases is very difficult.

Do all ticks carry diseases?

There are 'hotspot' locations throughout Britain where tick activity has been linked with cases of one or more of these diseases. The reality is that we do not know what percentage of ticks are infected in such areas. Even less is known about other areas of the country where ticks may be present in large numbers but the link between ticks and disease symptoms has not been made. For example, not many people realise that Lyme disease is known to be present in central London parks.

Where and for how long will a tick bite me?

Many people are unaware that they have been bitten because the ticks are tiny and their bites are usually painless. Ticks can attach anywhere on your body, so you do need to check all over. For adults it is particularly important to check armpits, groin, navel, neck and head. In addition, on children, ticks are also frequently found on the head at the hairline.

There are ongoing debates as to how long a tick must remain attached to you before transmitting a disease. The minimum length of time is not