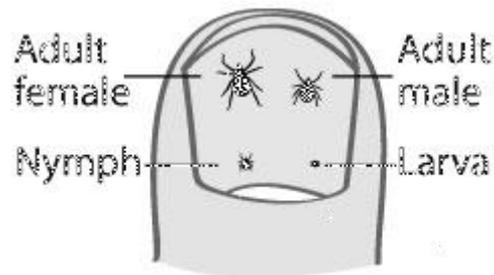


Ticks - Lyme disease & other tick borne diseases in Britain

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 3 stages of the life-cycle: larva, nymph, and adult.



To the naked eye the larvae look like specks of soot, while nymphs are slightly larger, pinhead or poppy seed size. With their eight legs, adult ticks resemble small spiders.

Once an adult tick has started to feed, its body will become filled with blood. As the blood sac fills it generally becomes lighter in colour and can reach the size of a small pea, generally grey in colour. The tick bite itself is totally painless and most people will only know they have been bitten if they become aware of a feeding adult tick attached to them. However, it is the pinhead size nymph that is the most likely to bite you.

What do ticks eat?

Ticks feed on the blood of just about any bird or mammal and some reptiles too. They pick up Lyme disease and other infections from these animals, e.g. mice, voles, squirrels, blackbirds, pheasants and seabirds, which naturally carry the diseases. Ticks carry more diseases than any other invertebrate host. If an infected tick subsequently bites you, it may transfer one or more of the diseases into your bloodstream.

A tick can be born with the disease that its infected mother tick carries. So, all three stages of the life cycle, larva, nymph and adult, are capable of transmitting disease.

When are ticks active?

Cold temperatures reduce tick activity, so ticks are most active from April to October. During warm winters & in certain areas of Britain, ticks 'quest' for blood throughout the whole year. Ticks may survive for more than a year without food & their bodies can remain in a dormant state for long periods. Because their bodies dry out easily, lack of moisture can be fatal to them at these times, e.g. hot, dry summers & very cold or dry winters.

Where are ticks active?

Ticks can survive in many places but prefer slightly moist, shady areas such as grass, bracken, bushes and leaf litter. This is also where the animals they feed on are most likely to visit. Ticks can be found in both rural and urban locations. They are least likely to live in short grass or dry heather.

Do all ticks carry diseases?

There are 'hotspot' locations throughout Britain where tick activity has been linked with cases of one or more of the tick-borne 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 & for how long will the 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 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.

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.

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.

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.

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.

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.

Can I avoid ticks?

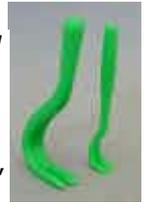
It is very difficult to avoid ticks totally because they can be found in urban parks and gardens, as well as typical countryside locations. It is possible for you or your pets to bring ticks into your home. The best strategy is 'awareness'. Check yourself for ticks whenever you have visited a place where they may have been present. Do this both immediately and for up to three days after any outdoor visit. This may allow you to see any adult tick that has attached. Once it has started to feed, its blood-engorged body will make it very visible. If you find a tick, remove it as soon as possible.

Ticks can locate their prey by detecting host body heat, carbon dioxide and ammonia. They may crawl towards a stationary host or stretch out their front legs, equipped with tiny 'grappling hooks' in order to attach to a passing host. So anything you can do to thwart these tactics may help you to avoid tick bites. There are many suggestions about how to stop ticks reaching your skin but there has been little measurement of their effectiveness. Awareness still remains the best strategy.

- You should make it more difficult for a tick to reach your skin by wearing shoes rather than sandals and tuck long trousers into socks.
 - Ticks can be more easily seen on white or light-coloured clothing.
 - Avoid a tick's favourite places by walking in the middle of paths and check yourself after sitting on logs or leaning against tree trunks.
 - If you picnic, use a light coloured picnic blanket to sit on. The underside of the blanket can be more easily checked for the presence of ticks.
 - Check your pets for ticks when they come into the house and keep pets that have outside exposure off furniture especially bedding.
 - Spray your clothing with an effective anti-tick pesticide. There are a variety in outdoor shops and chemists. Make sure you follow the instructions carefully.
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How do I remove a tick?

Your main aims are to remove all parts of the tick's body and to prevent it releasing additional saliva or regurgitating its stomach contents into your bite wound.



DO use a proprietary **tick removal tool*** (available from many vets or pet shops), and [follow the instructions provided](#). This tool will grip the head of the tick.

* Alternative Methods : With **pointed tweezers** grasp the tick as close to the skin as possible without squeezing the tick's body, pull the tick out without twisting – there may be considerable resistance. If no tools are available, rather than delay use a **cotton thread** - Tie a single loop of cotton around the tick's mouthparts, as close to the skin as possible, then pull gently upwards and outwards.



DO cleanse the bite site and tweezers, with antiseptic before and after removal.

DO wash hands thoroughly afterwards.

DO save the tick in a container in case you develop symptoms later (label with date and location). The Health Protection Agency are currently running a scheme to investigate ticks, details available at www.lymediseaseaction.org.uk/information/tick.htm or from the HPA at www.hpa.org.uk.

DO NOT squeeze or twist the body of the tick, as this may cause the head and body to separate, leaving the head embedded in your skin.

DO NOT use your fingernails to remove a tick. Infection can enter via any breaks in your skin, e.g. Close to the fingernail. **DO NOT** crush the tick's body, as this may cause it to regurgitate its infected stomach contents into the bite wound.

DO NOT try to burn the tick off, apply petroleum jelly, nail polish or any other chemical. Any of these methods can cause discomfort to the tick, resulting in regurgitation, or saliva release.
