

for a thorough inspection. It helps to get someone else to check areas where it is difficult for you to see.

When returning home, shake outer clothes and leave them outside to avoid bringing ticks indoors. In centrally heated homes, ticks are unlikely to survive but it is better to avoid having them as house guests!

Keep your pets treated against ticks. Various products are available from your veterinary surgery. Use caution when buying products from pet shops and supermarkets. Some active ingredients (e.g. permethrin) can be toxic to certain animals, such as cats. Non-chemical treatments are available from various outlets but may not be as effective.

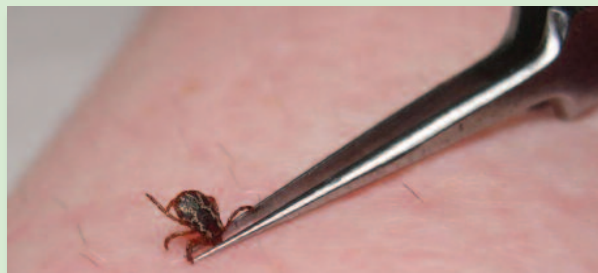
### HOW DO I REMOVE A TICK SAFELY?



Correct tick removal is vital in helping to avoid transmission of infective organisms. Freezing or burning a tick can cause it to regurgitate its blood meal (which may contain infective agents), as can smothering it in substances such as spirits, oil/butter, nail varnish or petroleum jelly. Squashing or scratching off a tick can spill infective fluids and leave mouth parts behind in the skin, causing abscesses and scarring. Compressing a tick's body can cause infective fluids to be squeezed into the host. Never remove a tick with your fingers or handle it with bare hands as some infective agents can enter through breaks in the skin or through mucous membranes (touching eyes, nostrils or mouth).

### CORRECT METHODS OF TICK REMOVAL

Ideally, wear plastic gloves and preferably use a tick-removal tool. Be aware that not all types of tool are as safe as they claim to be and can cause damage or compression to the tick. A study, comparing four removal devices, demonstrated that the O'Tom Hook (or Tick



Twister) was the most efficient at removing ticks without causing damage or compression (Vet Rec 2006; 159: 526–529). O'Tom hooks are available from BADA-UK, or from some veterinary surgeries and pet stores. In the absence of a tick-removal tool, use fine-pointed tweezers. Approach the tick from the side to avoid compressing its body.

Grasp the tick as close to the skin as possible. Gently pull/lever upwards until the tick detaches. Do not twist as tweezers exert too much pressure on the mouth parts and they may break off. After removal, disinfect the bite site thoroughly and check for any remaining parts (these may be removed with a sterile needle). Wash hands with soap and water or disinfect them.

It can be useful to keep the tick for a while in case you become ill over the following weeks; it can help your doctor in making a diagnosis. Write the date of the bite on a piece of paper in pencil and put it with the tick in a plastic bag, then store in the freezer. To dispose of the tick, throw the whole unopened bag away in the dustbin. Do not handle the tick with bare hands, even if it is dead.

Should any symptoms occur, seek medical advice without delay. Photograph any rashes.

For comprehensive information on tick-borne diseases in people and pets, and for tick-removal and -repellent products, please visit our website ([www.bada-uk.org](http://www.bada-uk.org)), where copies of our leaflets are also available.

Alternatively, please send a first class A5 SAE to  
**BADA-UK, PO Box 544, Wath upon Dearne,  
Rotherham, S63 3DW.**

BADA-UK Registered charity No. 1113329, England and Wales,  
Registered charity No. SC038414, Scotland.  
Company number 5539748

# Ticks and tick-borne diseases in the UK.



*Are you tick aware?*

### WHAT ARE TICKS?

Ticks are members of the spider family. They feed on the blood of a host (a chosen animal or human). Unfed, they are generally flat and sesame-seed-shaped. Depending on its age and sex, an unfed tick can be as tiny as a full stop (0.5mm), up to about 3mm. A fully-fed adult female can be as large as a coffee bean. It can take a number of days for a tick to become fully engorged.

Unfed ticks range in colour from red or brownish, to black. Once fed, they are usually purple, blue-grey, or flesh pink. Like spiders, ticks have eight legs, except when they are larvae (baby ticks), and have six legs. During their life cycle, ticks feed on small to large wild and domestic animals, birds, and humans.



## WHERE ARE TICKS FOUND?

Ticks are usually found in long grass, leaf litter, and on low plants. They wait for a host to pass and then latch on with hooked front legs. Then they look for a safe place to feed.



There are usually more ticks in woodland and forest areas, but they can also be found in fields and parkland, especially where there are livestock and deer. However, ticks can be found in many places where there is wildlife and plant cover, and this can include town parks and gardens.

Ticks are more abundant in late spring to early summer, and again during autumn. However, they can be active all year round during milder weather (above 3.5°C).

## WHY SHOULD I BE CONCERNED ABOUT TICKS?

Ticks can carry a variety of infective organisms which occur naturally in wild animals. However, wild animals rarely get ill, unless they are injured, weak, or already diseased. The tick ingests the organisms when it feeds on an infected animal. Then, when it feeds on a different animal, the organisms are transferred from the tick's saliva. Farm animals, domestic pets and people can get ill if bitten, as they often have no resistance to the organisms.

The most common disease to affect people is Borreliosis (Lyme disease). Symptoms usually begin a few days or weeks after a tick bite. The first signs are often an expanding pink or red rash, called an Erythema Migrans (EM), which may reach up to 75cm in diameter if left untreated. The rash can appear like a bull's-eye (round and with a central clearing), or it may be more irregular. Multiple rashes can sometimes occur. In some cases, a rash is never observed, or it may be found hidden under hair. An EM rash is considered diagnostic of Borreliosis.

Other symptoms may occur, such as fever, headache, chills, muscle and joint aches, and extreme tiredness. If left untreated, the infection can progress and result in more serious complications, such as chronic skin lesions (called Acrodermatitis chronica atrophicans or ACA), heart abnormalities and neurological symptoms. A

neurological infection is referred to as neuroborreliosis and can result in pain/tingling, or altered/loss of sensation and visual problems. Facial paralysis may occur and, in severe cases, paralysis of the limbs.

Borreliosis is a reportable disease in certain circumstances, such as occupationally acquired infection, which is reportable under the 'Reporting of Injuries Disease and Dangerous Occurrences Regulations 1995 (RIDDOR)'. In Scotland, physicians are required by law to report suspected cases, and it is also reportable for those serving in the British Armed Forces.



*Above: An adult female & nymph tick*

Treatment of Borreliosis in the early stages is normally successful but a delay in treatment can affect the course of recovery and may result in permanent tissue damage.

Oral antibiotics prescribed over a few weeks are usually sufficient to treat Borreliosis in the early stages. A more long-standing infection may require longer courses and sometimes intravenous antibiotics are required. Both diagnosis and treatment can be complicated if the tick has transmitted more than one type of infection. One of the more common co-infections is Anaplasmosis and this can have similar symptoms to Borreliosis. Anaplasmosis also responds to antibiotic treatment. Other types of co-infection may require different medications.

Testing techniques for Borreliosis have their limitations and can prove to be falsely positive or negative. It is therefore important to take into account clinical symptoms and a history of a tick bite or exposure to ticks.

Not every tick carries infective organisms, and not every bite will transmit disease. However, the longer an infected tick is allowed to feed, the more likely it is that an infection will result.

## HOW DO I KNOW IF I HAVE BEEN BITTEN?



Ticks have specialised saliva which helps them to feed without discovery. The saliva acts to numb the bite area, to prevent swelling, and keep the blood flowing. Many people with a tick-borne disease do not recall being bitten, so it is important to

check yourself regularly if you have been where ticks are likely to be. If you check yourself and your pets regularly, you are more likely to find a tick before it has attached, or soon after. If the tick is attached, its mouth parts will be buried in the skin. Ticks prefer warm, moist places where blood flows close to the skin, such as the underarms, groin, behind the ears and on the scalp. When checking pets, brush against the coat to see any embedded ticks and also check between pads, in the ears and around the tail.

## HOW CAN I AVOID BEING BITTEN?

When out in tick habitat, wear long-sleeved tops and long trousers tucked into socks, or wear gaiters. Elasticated waistbands and cuffs help to deter ticks from crawling under clothing. Smooth or waxed materials are hard for ticks to climb, and light coloured fabric makes them easier to see.



Use a repellent; 25-50% DEET-based repellents are effective but remember to re-apply when out for long periods. Clothing can be treated as well as small areas of skin. Apply with caution as treatment over large areas can cause toxicity, especially in children. DEET-free products are available but may not be as effective.

Walk on established paths where possible, and keep to the centre to avoid over-hanging vegetation. In overgrown areas, carrying a stick is useful to shake vegetation ahead of you. This may cause ticks to drop off and give them less opportunity to latch on.

Carry a tick remover and antiseptic wipes with you. Check yourself as thoroughly as possible every 3-4 hours. Once you return home, use shower or bath time