Lyme Disease Guidance

Introduction

Ticks are tiny members of the arachnid family and are found across the UK. They are widely present in both rural and urban areas.

They feed on the blood of other animals and tend to be found in long vegetation, where they attach themselves to a passing host. Tick bites themselves are usually relatively harmless, but if the tick is carrying bacteria picked up from a previous host animal, it can pass that infection on to the new host. If that host is human, serious diseases can occur.

Ticks are likely to be present in almost all of the areas in which DNPA staff and volunteers operate, and occupations such as forestry, agriculture and nature conservancy are likely to be at higher risk of both tick bites and associated illness. Whilst it may be difficult to completely avoid ticks, there are some practical steps that can be taken to reduce both the likelihood of being bitten and risk of illness or complication. This guidance is written to increase awareness of the risks and the symptoms to look out for if a bite does occur.

Definitions

TERM	DEFINITION
Tick	*A tiny spider like parasite found in woodland and heath areas. Ticks feed on the blood of birds and mammals (including humans)*
Lyme disease *(Lyme Borreliosis)*	*A bacterial infection transmitted to humans via the bite of an infected tick*
Tick Borne Encephalitis	*A bacterial infection transmitted to humans via the bite of an infected tick, which targets the central nervous system.*
Chronic illness	*A long-term illness that develops and worsens over time and is not treatable*

Relevant Legislation

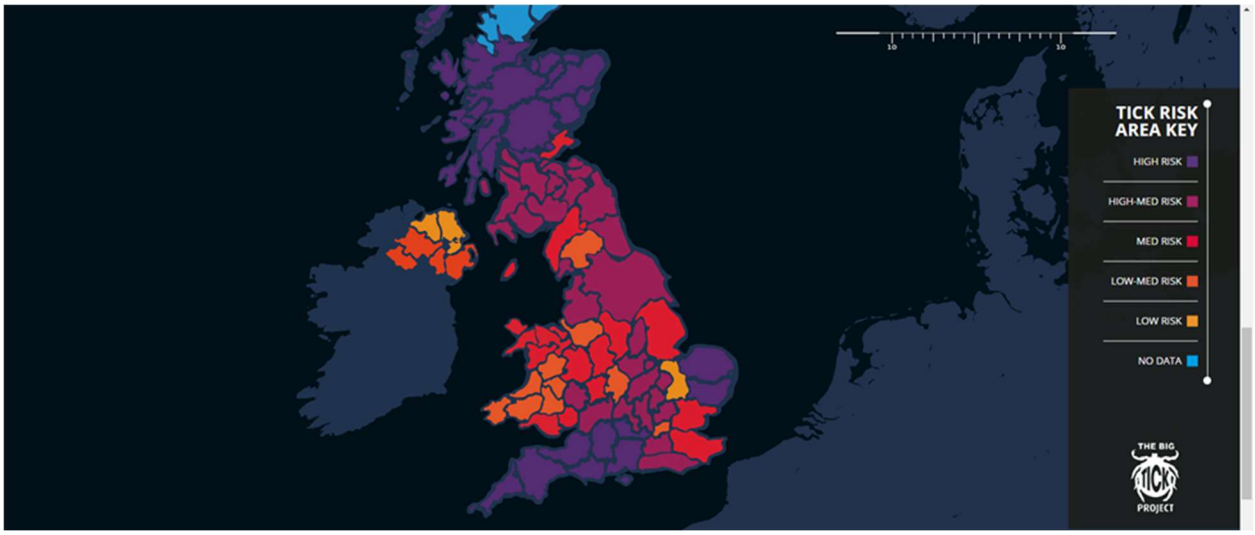
- **Health & Safety at Work Act 1974 -** https://www.legislation.gov.uk/ukpga/1974/37/pdfs/ukpga_19740037_en.pdf
- **The Management of Health & Safety at Work Regulations 1999 –** http://www.legislation.gov.uk/uksi/1999/3242/pdfs/uksi_19993242_en.pdf

Useful links

- http://lymediseaseuk.com/
- https://www.lymediseaseaction.org.uk/
- https://www.nhs.uk/conditions/lyme-disease/
- https://www.hse.gov.uk/agriculture/assets/docs/lyme-disease.pdf
- http://caudwelllyme.com/
- https://www.gov.uk/government/news/tick-borne-encephalitis-detection-in-england

What is a tick and where are they typically found?

Ticks are parasitic arachnids, which feed on the blood of their host. Larvae have six legs and are around the size of a full stop whilst nymphs are slightly larger and have eight legs. It is the nymph that is most likely to bite. Ticks are present in all areas of the UK, but certain locations (including Devon) are known to be hotspots:



Ticks are normally brown or reddish in colour and have small flat, oval bodies that swell as they fill with blood from the host. They live mainly in damp vegetation but climb to the tips of long vegetation to feed. They do this by *questing* – holding onto the vegetation tips with their back legs, waiting for a potential host to pass. When the host brushes against a questing tick, it latches on to the host with its front legs and then uses hooked mouth parts to get under the surface of the skin, where they can feed on their blood for up to 10 days.

Although ticks can be found in most environments, they are most likely to found in the long foliage of woodland, moorland, heathland and urban parks and gardens. As they favour warm, damp conditions, marshes, bogs and wet grassland are particular areas of concern.

KEY POINTS

- Ticks are tiny arachnid parasites found throughout the UK.
- Can be found in almost any long vegetation but favour woodland, moorland, heathland and urban parks and gardens.
- They attach when the host brushes against them.
- They start feeding on the hosts blood, soon after contact and can live on the host for up to 10 days.

Is there a tick "season"?

Traditionally, tick bites were largely seen as a spring and summer hazard. However, with warmer, wetter conditions (possibly exacerbated by climate change) there really isn't a *"tick season*" anymore, with tick bites occurring all year round - including the winter. Because ticks latch onto to skin though, it is perhaps most likely that a person may get bitten in the summer months when skin is more often exposed.

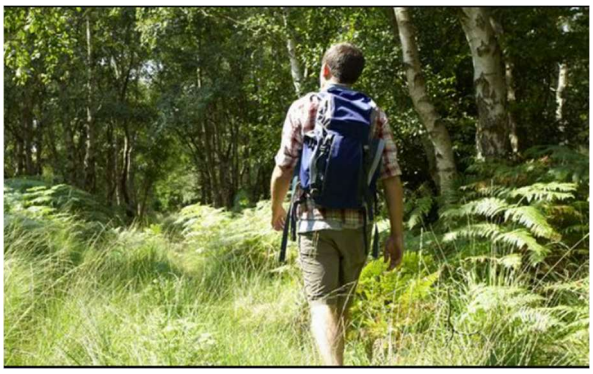
It is safest therefore, to assume that ticks are present all year round but are more likely to be a hazard in the warmer months.

How to avoid being bitten by a tick

Because ticks are present in almost all the areas in which we work, avoiding tick bites is a very difficult task. There are, though, a number of controls that can be put in place to reduce that risk and these are set out below. Remember, that where appropriate, tick bites need to be listed on risk assessments and so the following advice can be used in whole or in part when identifying effective control measures.

STICK TO THE PATH

Ticks can't jump or fly. They can **only** attach themselves by waiting in long vegetation for the host to brush past. *All* long vegetation could contain ticks, but grass, rushes and bracken may be the highest risk. Wherever possible, when walking or working in areas that may contain ticks, stick to paths – short grass, stone, gravel, wood, tarmac or shale tracks are the best option. Whilst this won't completely remove the risk, it will make contact much less likely.



CLOTHING

Sticking to the path, is a highly effective way of avoiding contact, but paths aren't always available and even when they are, they may still be narrow or edged by long vegetation. Because of this, the clothing you wear is a very important way of reducing the risk of tick bites.

The main thing is to keep your skin covered by wearing long trousers and long sleeves. Covering your skin, keeps ticks on the outside of your clothes and away from your body, and arms and legs are the most likely points of contact with long vegetation.

Cuffs are probably the easiest routes for ticks to get under clothing. To prevent this, tuck trousers into long socks and where possible, chose snugly fitting clothing because loose clothing is harder to seal – especially at the ankles and wrists. Tops should be tucked into trousers.

Footwear should be closed at the toe – walking shoes or boots are the most effective.

Some outdoor clothing is now specifically marketed as being tick repellent. These are typically manufactured with certain agents in the fabric that deter ticks and certainly would be a useful consideration for anyone working or spending a lot of time outdoors. However, it is important to remember that the degree of protection this type of clothing offers, will decrease over time as washing and general wear will weaken the repellent effects. For this reason, we would not suggest that this type of clothing is a complete defence against tick bites but may be effective for a limited time if used in combination with the other techniques in this guidance.

A more effective approach is to wear normal, well fitted outdoor clothing, tucked in, and then regularly sprayed with insecticide. Some sprays (especially those containing Deet) are also highly effective when sprayed directly onto skin and this can be done in addition to spraying insecticide on clothing, as an additional preventative control.

Only use a repellent spray if you are sure that you aren't allergic to any of the ingredients.

Fabrics

Covering up and tucking in, is all well and good, but new problems can be introduced – especially in the summer when it is very hot.

Lightweight, breathable fabrics are usually the best way to avoid getting too hot, and so are generally the best type of material to wear in areas where you may have to protect yourself from ticks. Remember that ticks can start out around the size of a poppy seed, so do avoid breathable clothing that has mesh panels because the holes that allow heat out can also let ticks in! Similarly, avoid stretching socks too tightly over trousers, as this can open up quite large holes in the weave. Don't overlook the importance of choosing the right fabrics – if you overheat, the first thing you are likely to do is to shed layers and that will significantly increase the risk of tick bites.

The colour of outdoor clothing is also important – wearing lighter coloured clothes gives you a better chance of seeing any ticks that you may have picked up and allows you to remove them before they come into any contact with your skin.

When you get home

Perhaps the most important thing to do, is to check yourself for ticks as soon as you get home.

Ideally you should remove any clothing that may be carrying a tick and wash them at a high temperature.

Next, carry out a full body inspection. The main areas to check are:

- Back of neck
- Hairline
- Armpits
- Groin
- Waistband area
- Skin folds
- Backs of knees

You are looking for any ticks that may have got ono your skin, but remember that initially, they are very small and can be very hard to spot. Only once they have started feeding will they become bigger and more obvious.

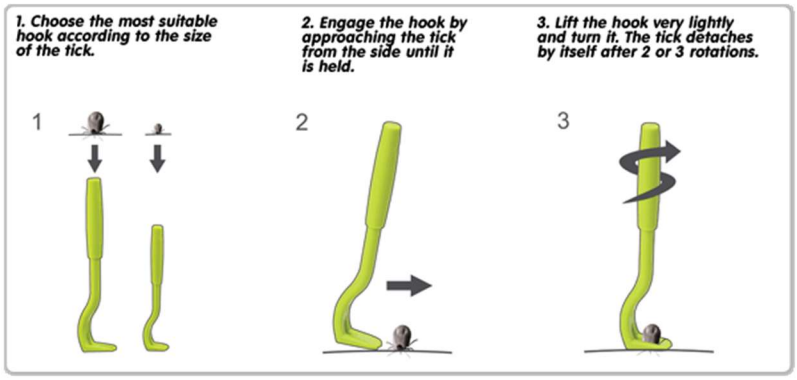
KEY POINTS

- It may not be possible to completely avoid contact with ticks in long vegetation.
- Stick to paths where possible but be aware of overhanging vegetation or long grass verges.
- Wear closely fitted clothing where possible, tucking trousers into socks and tops into waistbands. Long sleeves and long trousers are preferable.
- Clothes designed to repel ticks are available, but their efficacy deteriorates over time.
- Wear lightweight breathable fabrics but avoid those with mesh panels.
- Light coloured clothing is preferable as it helps the wearer spot ticks before they gain contact with skin.
- Spray clothing (and/or skin) with insect repellent before heading outside. Only do this if you are not allergic to any ingredients.
- When you get home, remove any clothing that may have ticks attached, and wash them at a high temperature.
- Examine skin closely for any ticks, paying particular attention to hairline and skin folds.

How to remove a tick

If you find a tick on you, it is important to remove it quickly. As explained in the next sections, not all ticks contain diseases, but if they do, the risk of infection increases the longer they are feeding on you.

If the tick hasn't started feeding, it can easily be picked off and disposed of. If it has started feeding, it will have firmly attached itself and you won't be able to pick it off so it needs to be properly removed. There are a number of theories about how to remove a feeding tick (including freezing, burning and smothering with petroleum jelly) but the only safe method is to use a tick removal tool which avoids squeezing the tick's body (thought to induce the flow of infective agents back into the host) or leaving the head in the skin (which runs the risk of secondary infection). Follow the instructions in the illustration below:



Once the tick has been safely removed, place it in some tissue paper and squash it before disposing in the dustbin or flushing down the toilet. The bite wound should then be thoroughly washed and disinfected.

Lyme disease

Lyme disease is a potentially serious illness, contracted through the bite of an infected tick. Not every tick carries the *Borrelia burgdorferi* bacteria that causes Lyme disease, with Government estimates from 2022 suggest that between 2.5% and 5.1% of all ticks in the UK are likely to be infected. There are currently thought to be between 3,000 – 4,000 cases of Lyme disease in the UK each year.

If the tick is infected with the Lyme bacteria it will pass into the host's bloodstream and the early symptoms will present shortly after being bitten. If discovered quickly, the condition can be treated effectively with a course of antibiotics. However, if the condition is left untreated, serious chronic symptoms may appear months or even years after the bite.

The most common symptom of Lyme disease is a rash at the site of the tick bite. The rash can often be in the classic "*bullseye*" appearance (see left on next page) but can also take a range of other forms (see right). It usually appears around four weeks after the bite (but can appear much quicker) and occurs in about two thirds of cases.

The "bullseye rash"

Other forms of Lyme rash

Sufferers may also experience other early-stage symptoms which are similar to flu:

- Fatigue
- Muscle pain
- Joint pain
- Headaches
- High temperature
- Chills
- Confusion
- Neck stiffness

Note – not every case of Lyme disease will result in a rash – if it does not develop but other symptoms do, still assume that Lyme disease is possible and seek medical advice.

Early diagnosis will result in treatment with a course of antibiotics. If it is not diagnosed or treated, more serious chronic conditions will occur as the condition worsens. These include (but are not limited to):

- Inflammatory arthritis
- Numbness or pain in the limbs
- Paralysis of the facial muscles
- Memory problems
- Heart problems (including heart failure)
- Inflammation of the brain or spinal cord (meningitis)

A GP should be consulted as soon as any of the **early-stage** symptoms appear after being bitten. Ensure that the GP is told that you have spent time in areas likely to contain ticks and that you suspect Lyme disease. Despite the prevalence and severity of the condition,

there is not widespread awareness amongst GPs and other medical staff. Diagnosis is often difficult due to the similarity of the symptoms to other conditions and a blood test will usually be carried out to confirm the diagnosis. If you feel the Doctor has not taken your Lyme disease concerns seriously enough, you should request a second opinion.

KEY POINTS

- Lyme disease is a potentially very serious illness, contracted through the bite of an infected tick.
- Not every tick carries the Lyme disease bacteria.
- Early indications include flu like symptoms and in many cases a skin rash which often (but not always) looks like a bullseye.
- If any of these symptoms materialise after being bitten, a GP should be consulted urgently.

Tick borne encephalitis

Tick borne encephalitis (TBE), is a newly detected virus in the UK. As of April 2023, there have only been three confirmed cases in England, but it is far more prevalent in Europe and Asia. The three confirmed cases so far have been detected in Dorset, Norfolk, and Yorkshire.

It is spread through the bite of an infected tick, in exactly the same way as Lyme disease. It causes a range of illnesses, with symptoms ranging from mild flu through to severe infections of the central nervous system, such as meningitis or encephalitis (swelling of the brain).

Symptoms include high fever, headache, neck stiffness, confusion, seizures, fits, and loss of consciousness. Anyone who suffers one or more of these symptoms after being bitten by a tick, should seek medical attention promptly. Medical attention should be sought **urgently** if a person experiences severe headaches, stiff neck and/or pain looking at bright lights after being bitten.

It should be stressed that at this stage, the risk from TBE is classed as **very low** by the UK Government risk assessment. However, that does not mean that we should be complacent as Lyme disease started at the same level in the UK just a few decades ago and is now widely established. For now, it is enough to be mindful that this virus is present in the UK (albeit in very low instances) and if any of the symptoms present after a bite, to seek medical advice urgently.

KEY POINTS

- Newly discovered in the UK
- Spread in the same way as Lyme disease.
- Attacks the central nervous system and can cause very serious illness if left unchecked.
- Symptoms include high fever, headache, neck stiffness, confusion, seizures, fits, and loss of consciousness.
- Urgent medical attention should be sought if symptoms including stiff neck, severe headache or pain looking at bright lights develops.
- Currently very low risk but should be taken seriously.

Ticks and pregnancy

There is currently, very little information or clinical studies on the effects of Lyme disease on pregnancy, however NICE guidelines state that if Lyme disease is contracted during pregnancy, it is *unlikely* that the infection will be passed to the unborn baby. Antibiotics will be prescribed, and the full course must be completed.

There is currently no reliable data on the effects of TBE on pregnancy.

As knowledge and awareness of both conditions increases, the advice and guidance on the effects during pregnancy will become more sophisticated. For now, it is advisable to err on the side of caution and consider Lyme disease and TBE as potential hazards for any pregnant employee or volunteer and should be addressed in the expectant mother's risk assessment.

Training and awareness

DNPA commissioned the Lyme Disease Action who delivered a bespoke training session on the risks of Lyme disease (Lunch & Learn – January 2025). Staff that work on Dartmoor were strongly encouraged to attend the session, with 49 employees in attendance. We will continue to raise awareness about the risks from ticks.

Document Amendment History

Revision No.	Originator of change	Date of change	Change Description
1	Neil White	10 January 2025	New guidance note