



UK Health
Security
Agency

Be Tick Aware toolkit

Raising awareness of the potential risk posed by ticks and tick-borne disease in England

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Executive summary

There are approximately 20 species of tick that are endemic in the United Kingdom (UK). Of these, the sheep, castor bean or deer tick (*Ixodes ricinus*) most commonly bites humans and this toolkit focuses on this species. Ticks can carry a range of microorganisms some of which may cause disease in humans. The most common of these causes the bacterial infection Lyme disease (LD). Tick borne encephalitis (TBE) is a viral infection which can also spread via the bite of infected ticks. There have only been a handful of confirmed cases of TBE in the UK. There are a number of other tick-borne infections such as Louping Ill, Anaplasmosis and Babesiosis, but these are also rare. LD remains the most significant tick-borne infection in England and Wales in terms of severity and incidence, with the incidence of LD increasing over the past decade.

Although the highest numbers of LD cases are reported amongst residents living in parts of Southern England, any area where humans can encounter infected ticks poses a potential public health risk. Overseas travellers may be at increased risk of acquiring LD because some countries have higher LD incidence rates than the UK. Raising awareness of ticks and the associated risks is an important step towards the prevention of tick-borne disease.

UK Health Security Agency (UKHSA) has developed this toolkit which aims to facilitate the implementation of locally driven tick awareness initiatives. This toolkit can be used by local authorities and other stakeholders to target residents and visiting members of the public in their area, to raise awareness of the risk posed by ticks. Locally driven tick awareness campaigns have been shown to successfully raise awareness of the risks posed by ticks.

This toolkit provides background information on ticks, LD risk, how to improve awareness of ticks and mitigate against tick-borne diseases through the promotion of UKHSA's key message which is to 'be tick aware'. Raising tick awareness should increase knowledge of ticks, exposure risk and the potential health risks, as well as promote the adoption of preventative behaviours such as carrying out regular tick checks and prompt tick removal. Tools and links to additional resources included in this toolkit aim to assist in the delivery of tick awareness messaging at the local level. Such messages can be delivered via actions as simple as signposting or through more intensive methods such as campaigns.

UKHSA are encouraging local authorities and other stakeholders to use this toolkit to assist in delivering consistent tick awareness messages at the local level, particularly during spring, which is a high-risk period for tick bites. Coordinating our key messages can increase public knowledge of ticks and disease risk, whilst empowering individuals to adopt protective health behaviours that have the potential to reduce tick-borne disease risk in the UK.

Section 1: Introduction

The purpose of this toolkit

UKHSA regularly responds to queries relating to ticks and tick-borne infection risk and there is a need to provide clear, evidence-based guidance on ticks and tick bite prevention to help reduce the risk of infections such as LD. Our ambition is to expand tick awareness coverage to all areas in England by working in partnership with local authorities and similar stakeholders. This toolkit provides information resources that will enable local stakeholders to deliver public health information on ticks and tick-borne disease prevention directly to their population and visitors.

Who this toolkit is for

From behavioural theory research, we understand that the public do not feel they have access to clear guidance, particularly on how to recognise ticks and remove them safely. Small behavioural changes, as well as access to trusted information and guidance on what ticks are and how they can be identified, can help the public reduce the chances of being bitten and know what to do if they are bitten.

This toolkit provides resources and tools to deliver information on tick ecology, tick bite avoidance, tick-associated health risks, correct tick removal and symptom recognition for tick-borne infections. The information contained within it can be used by local authorities and other stakeholders wishing to use tick awareness materials and guidance to promote the adoption of tick bite prevention behaviours that will help reduce the risk of tick bites and potentially the incidence of LD and other tick-borne diseases in the UK.

Section 2: Ticks in the UK

Ticks are small, spiderlike creatures that feed on the blood of animals, including people. During this feeding process, they can transmit pathogens that can result in infections such as LD. In the UK, the most important tick species to human health is *Ixodes ricinus*, more commonly known as the sheep, castor bean or deer tick. This species can be found feeding on humans and is the principle vector of LD and other tick-borne infections.

Life cycle of a tick

The tick life cycle is made up of 3 active stages; larvae, nymphs and adults. Each stage needs an animal host on which to feed before it can progress to the next stage, or in the case of the adult females, lay eggs. The life cycle takes on average 3 years to complete. When ticks search for a host on which to feed, they climb to the tips of vegetation and use special sensory organs on their front legs to detect stimulants such as carbon dioxide, changes in light, and body heat given off by hosts. As a host brushes past the vegetation, ticks climb on. Once a suitable feeding site has been found on the host, the tick will take one continuous blood meal (lasting for a varying number of days, depending on the life stage of the tick). The tick will then detach and drop off into the vegetation to digest and progress to the next stage. After mating, adult female ticks will lay several thousand eggs at ground level before dying. *Ixodes ricinus* will only survive if this occurs outdoors and in suitable tick habitat.

Where ticks are found

Ticks are very sensitive to temperature and humidity, requiring areas with dense ground level vegetation for survival, reproduction or establishment. Areas such as woodlands, grasslands and moorlands provide this dense vegetation layer and a suitable range of hosts on which ticks can feed. Ticks can also be found in some urban parks and gardens. Within these habitats, ticks can be highly abundant in wooded areas and on the edges of woodland or scrub, often used by wildlife. Without larger hosts such as deer or livestock that adult ticks feed on, tick populations are less likely to become established, even when suitable vegetation, and temperature and humidity conditions are met. Repeat introductions of ticks into suitable areas can occur if those areas are accessible to the fauna on which they feed. It is therefore possible to come into contact with ticks in any environment accessible to wildlife, although the risk is likely to be higher where tick populations can become established.

When ticks are active

Nymphal ticks are the most important stage for acquiring LD, as unlike adult ticks, they are often harder to spot so remain attached and feeding for longer. The longer an infected tick is attached, the higher the risk of disease transmission becomes. Although larvae are smaller than nymphs, they are less likely to be infected with the bacteria that can cause LD. In England, nymphal tick activity increases during spring, peaking during April to June. During this period, the risk of acquiring a tick bite is highest, but it is important to remember that tick bites can occur at any time of the year. Activity reduces during the summer months but can then pick up again in early autumn. Activity continues over the winter months but at a significantly reduced level. Adult ticks can be active at all times of year but are more active in summer which is also the peak time for larval activity.

Tick bite prevention

The chance of acquiring a tick bite when enjoying outdoor activities (which are important for improving health and wellbeing) can be reduced by:

- regularly checking clothing and exposed skin for ticks that might be crawling on you and brushing them off immediately
- walking on clearly defined paths to avoid brushing against vegetation where ticks may be present
- wearing light-coloured clothing so that ticks crawling on clothing can be spotted and brushed off immediately
- using an insect repellent (for example DEET) that can repel ticks and prevent them from climbing onto clothing or attaching to skin (always follow the manufacturer's guidance)
- wearing long trousers and long-sleeved tops to reduce the direct exposure of ticks to your skin, making it more difficult for them to find a suitable area to attach

Recognising ticks and performing a tick check

In addition to carrying out the prevention measures outlined above, it is important to also check for ticks after outdoor activities. After participating in outdoor activities (for example, walking, running, gardening, camping, picnicking, orienteering) always carry out a thorough tick check. A tick check is carried out by looking and feeling for ticks that may have attached to the skin. By performing a tick check, the chance of infection is reduced because feeding ticks are spotted and removed promptly. Areas where ticks may frequently be found include skin folds, armpits, groin, wrist, waistband area, behind the knees, back of the neck and hairline. Data from UKHSA's Tick Surveillance Scheme shows that adults are commonly bitten on the legs, whilst children are commonly bitten on the head or neck area. However, it

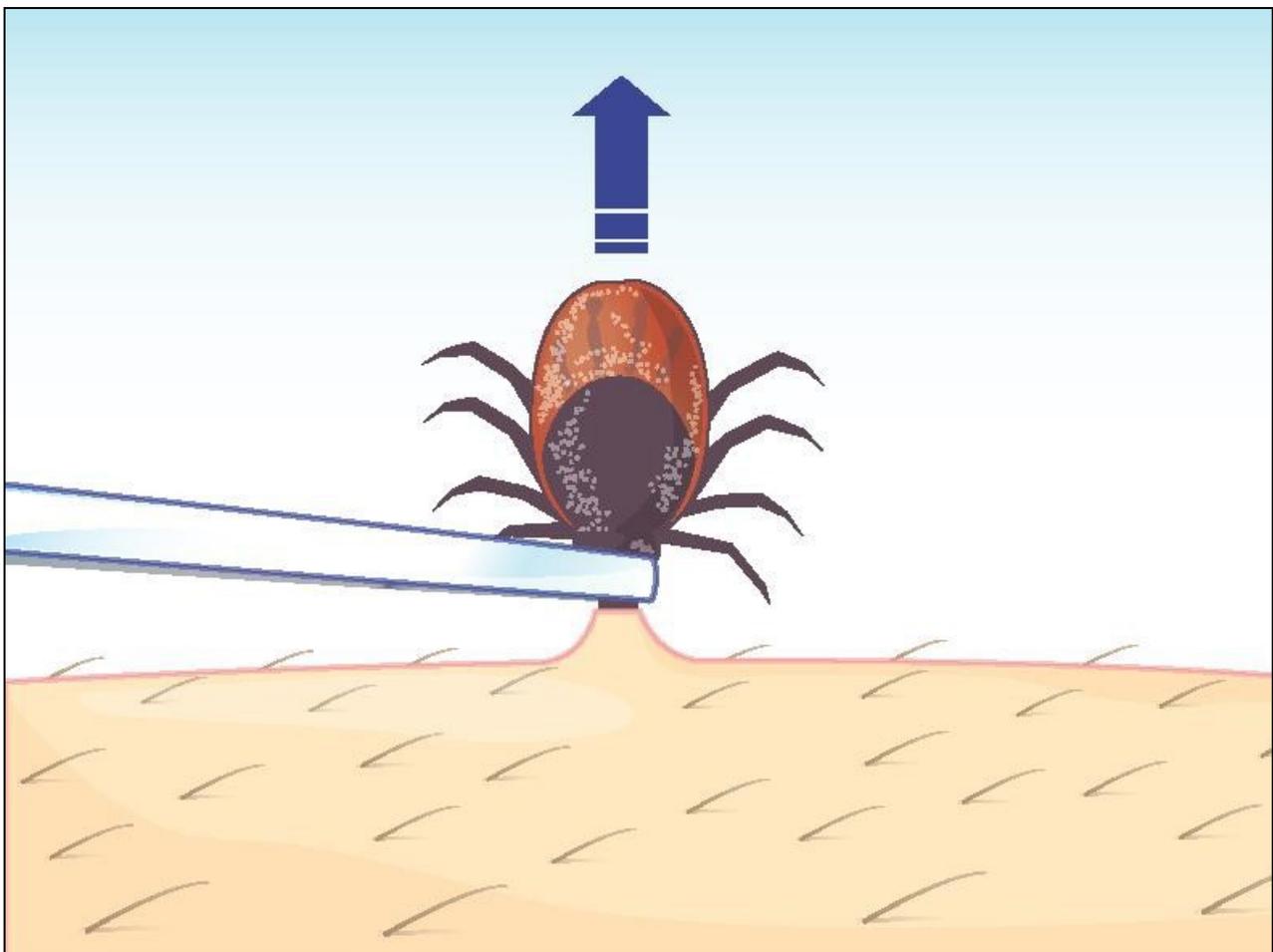
is important to remember that bites can occur on any part of the body and more than one tick can be attached at a time.

Prompt and correct tick removal

Evidence suggests that LD transmission risk increases the longer a tick is feeding. Other tick-borne pathogens may transmit more quickly than the Lyme bacterium, so prompt and correct tick removal is an important way to reduce the risk of all tick-borne diseases.

The safest way to remove a tick is to use fine-tipped tweezers or a tick removal tool. Fine-tipped tweezers are different to regular tweezers that might be used to remove eyebrow hair. Fine-tipped tweezers are very narrow and pointed at the tip, and ensure that ticks are not squashed during removal. Grasp the tick as close to the skin as possible and pull upwards slowly and firmly (Figure 1). People can remove ticks safely by themselves, or ask for assistance from others.

Figure 1: Illustrated graphic of a feeding female *Ixodes ricinus* tick attached to skin, being removed with fine-tipped tweezers



Section 3: Lyme disease in the UK

Lyme disease

Early symptoms of LD in humans may include mild flu-like symptoms such as fever, headache and fatigue. Often, but not always, early symptoms are accompanied by a characteristic spreading bulls-eye rash (called erythema migrans) at the site of the tick bite (Figure 2). However, the rash may be absent or atypical, or may not be noticed if it is under the hairline or in an awkward part of the body that is difficult to see easily. The absence of a bulls-eye rash should not be used to rule out a diagnosis of LD. More images of typical LD rashes can be found on the [National Institute for Health and Care Excellence \(NICE\) website](https://www.nice.org.uk).

Figure 2: Examples of a typical erythema migrans, a distinctive red, circular rash sometimes found at the site of tick attachment



How Lyme disease is treated

LD is treatable with a course of antibiotics in accordance with [LD national guidelines](#). However, if left untreated, the infection can spread to affect the nervous system, joints, or the heart. In the UK, preventative antibiotic treatment following a tick bite is not recommended.

More information on Lyme disease treatment can be found at [Lyme disease: resources and guidance](#).

How Lyme disease is transmitted

In nature, the bacteria (*Borrelia burgdorferi sensu lato*) that cause LD are carried in the blood of wild animals (hosts), primarily small mammals and birds. Ticks feeding on an infected animal will take in the bacteria, which remain in the tick for the rest of its life. When an infected tick bites and feeds on a human, the bacteria can be passed on via the tick's saliva. It should be remembered that not all ticks will carry the bacteria which causes LD and not all bites from an infected tick will result in human infection. Latest research in England suggests that on average, ~4% of ticks may be infected with the bacteria that can cause LD, but this can vary by location.

Those at risk of acquiring Lyme disease

Approximately 1,500 laboratory confirmed cases are reported annually in England and Wales, with around 15% of these cases reporting recent travel overseas and therefore may have acquired their infection abroad. Based on laboratory-confirmed LD, cases occur in people of all ages and both sexes are equally susceptible. Peaks in cases are seen in those aged between 45 and 64 years, followed by those aged 25 to 44 years. Cases have been reported from most areas in England and Wales, but more frequently from parts of Southern England. Cases diagnosed in the UK may include those who acquired the infection through a tick bite in another country. More information on laboratory-confirmed case numbers can be found at [Lyme disease epidemiology and surveillance](#).

When there is a risk of acquiring Lyme disease

In the UK, new cases of LD are most commonly diagnosed during the summer season, coinciding with tick activity and high levels of outdoor human activity that may result in tick exposure. Cases are reported throughout the year but nearly half of diagnosed cases occur in July, August and September. Most of these cases are probably acquired in late spring and early summer when tick activity is high and people engage in more outdoor activities. The peak of LD cases in the summer likely reflects the time period between being bitten, developing symptoms, and developing levels of antibodies high enough to give positive results in laboratory tests. Travellers overseas should be aware that there can be a risk of LD in other countries, and some may have much higher LD incidence rates than in the UK. Tick bites can occur at any time of the year, so it is important to be tick aware when travelling.

Increased risk in England and Wales

Information on laboratory-confirmed cases of LD is collated nationally, and the number of such cases in England and Wales has been increasing annually until 2020. Cases

diagnosed and treated on the basis of clinical features and a history of tick bite or exposure, but without laboratory-confirmed tests, are not recorded. Several factors have likely contributed to the rise in laboratory-confirmed cases including: increased tick and LD awareness, improved diagnostics and enhanced surveillance of LD, geographical expansion of ticks and possible extensions of tick activity periods, changes in wildlife populations and distribution, and human-induced habitat or behavioural changes that have resulted in more encounters between humans and infected ticks.

How Lyme disease can be prevented

There is no licenced vaccine for LD, so improving tick awareness and adopting tick bite prevention behaviours are the best measures to reduce the risk of developing LD.

Other tick-borne disease in England and Wales

LD is the most common tick-borne disease in England and Wales. However, ticks can carry other microorganisms that occasionally cause human disease following a tick bite.

Ticks infected with tick-borne encephalitis (TBE) virus have been found in a small number of areas in England, and recently a very small number of human cases have been diagnosed in the UK. TBE can cause a meningitis-like illness. It is usually self-limiting but occasionally causes severe brain inflammation.

The risk of TBE virus to the general population in England has been assessed as very low.

Signs and symptoms of tick-borne encephalitis can include fever, persistent headache, confusion and sensitivity to light. More information is available at [Tick-borne encephalitis](#).

Section 4: Raising tick awareness

Why raising tick awareness is important

Research has shown that knowledge of ticks and perceptions of risk concerning tick-borne infections are associated with protective health behaviours. Research conducted by UKHSA has suggested that tick checking is one of the most effective and well accepted protective behaviours that can be used to potentially reduce the risk of acquiring tick-borne pathogens. In addition, the provision of information on ticks does not discourage the public from visiting the countryside, which is important for improving health and wellbeing.

Key tick-awareness messages

The key message from UKHSA is to 'be tick aware'. Members of the public who are tick aware should know:

- what ticks are and what they look like
- where they might be exposed to ticks
- how to reduce the chances of tick bites when outdoors
- how to carry out regular tick checks after spending time outdoors
- how to safely remove attached ticks
- how to spot disease symptoms and when to seek healthcare advice

[Appendix 1](#) contains an extended list of key facts and messages that incorporate findings from scientific research on ticks and tick ecology that are specific to the UK, and also behaviour change theory. The key messages of carrying out regular tick checks, supported with information on how to do this and how to remove ticks safely, results from research investigating the personal perceived risk that individuals may have towards tick bite risk, and preferences for preventive behaviours.

Many tick bite prevention behaviours and advice are not readily adopted by the public, because it is felt that changing clothing, wearing repellents, or avoiding particular areas will spoil their enjoyment of the countryside. Our key messages promote simple behavioural approaches that emphasise the importance of carrying out regular tick checks following outdoor activity, correct tick removal and disease symptom recognition. Highlighting the simplicity of tick checks and the importance of removing ticks promptly empowers individuals with knowledge to help protect themselves and reduce the chance of tick-borne infections.

Options for promoting tick awareness

Tick awareness can be improved at the local level using the key messages and facts in this toolkit via a number of options.

Option 1: Signposting

This focuses on pointing members of the public in the direction of key health information on ticks and tick-borne diseases. Such information can be found on the NHS and UKHSA websites (see [tools](#) below). Links to websites can be placed on local authority or other locally focused websites, to provide members of the public with easy access to accurate information on ticks and tick-borne diseases.

Option 2: Co-branding and locally developed materials

[Tick awareness materials](#) in the form of a poster and leaflet are available as part of this toolkit (see [tools](#) below). They can be used as they are, or co-branded with the addition of stakeholder logos. Alternatively, the information contained within this toolkit can be used to develop bespoke tick awareness materials for use at the local level, with local branding and acknowledgement of UKHSA. Such materials can be placed on local authority (or other stakeholder) websites (see [tools](#) below).

Option 3: Campaign

Campaigns involve using additional methods to disseminate tick awareness information. It is recommended that both print and social media networks are used to support message delivery. UKHSA, co-branded or locally developed tick awareness materials can be printed and disseminated to general practices, parish councils, pharmacies, minor injury units, primary schools, Scouts, Guides, mental health partnerships and other local relevant groups. In addition, outreach events can be used to showcase tick awareness materials, allowing for direct engagement with members of the public. Locally led events can be held to stimulate discussion and raise awareness and if resources allow, tick removal tools can be disseminated as part of these activities.

Key stakeholders – working in partnership

Local authority, public health and communications representatives are encouraged to engage with local media around raising tick awareness, particularly if choosing option 3. For example, you could join UKHSA's efforts to engage with a range of groups whose patients, residents, visitors or participants may be exposed to ticks, such as outdoor pursuits groups, Areas of Outstanding Natural Beauty (AONB), National Parks, Wildlife Trusts, National Trust, Scouts and Guides, across England, to further spread the message of tick awareness. You

may also be able to encourage local businesses, veterinary practices and GP surgeries to promote awareness among their clients.

Social media

Social media can be utilised for all the above options and can be issued as necessary by relevant communications and public health teams (see [tools](#) below). Social media can also be useful in promoting outreach events to build interest and momentum ahead of time. If members of the public agree, you can take photos during outreach events so they can be used in future social media promotions.

Twitter or Facebook messages can be issued at particular times of the year to promote tick awareness, for example, in line with peak tick activity or other events that might be used to promote tick awareness such as summer safety events.

UKHSA use the following hashtags #TickAwareness, #BeTickAware and #BeLymeAware and we encourage you to follow us on Twitter and re-tweet our messages where relevant. When using social media to promote tick awareness:

- use #TickAwareness, #BeTickAware and #BeLymeAware in tweets where possible, and encourage stakeholders to use the same as this helps the topic to 'trend' and appear on more feeds
- engage with people who reply to your tweets or posts with questions or comments to continue momentum
- interact with relevant partners and follow their Twitter feeds, for example local media outlets and NGOs, local MPs and local authorities in and around your area – ask them to re-tweet messages and build a relationship with them
- as well as encouraging your followers and local organisations/contacts to re-tweet your messages, ensure you do the same and re-tweet relevant and interesting messages surrounding tick awareness

Outreach events

Face-to-face events can be organised locally and ideally would happen in the spring or early summer when tick activity increases and when people are more likely to take part in outdoor activities. Such events could include presenting an information stand or holding a discussion group within a public space where people can find out more about ticks and tick-borne disease. These events could utilise UKHSA, co-branded or locally developed materials and could provide opportunity for attendees to receive practical advice on tick removal. Such events also provide an opportunity to answer specific questions or queries from members of

the public, allowing a better understanding of what tick-related issues may be affecting the local population. Outreach events could be targeted to specific 'at risk' groups and tailored to suit local needs. At risk groups can include those who take part in recreational outdoor pursuits (walkers, off-road cyclists, anglers, horse-riders, among others), school-aged children and occupational groups such as countryside officers, conservation officers and other outdoor workers.

In addition to social media, engaging local media can also help promote outreach events. It will be beneficial to involve local media at 3 key times:

1. Pre-event – when you can issue press materials to flag upcoming events to relevant media titles in the area in the hope of driving footfall and securing coverage.
2. During the event – when local media can be encouraged to attend and interact with the public and those running the event; capturing images or interviews where key messages can be promoted.
3. Post-event – to provide feedback on engagement rates and lessons learned.

Timing

It is important to share key tick awareness messaging at appropriate times of the year to remind the public to be on the lookout for ticks, and to consider adopting some simple tick bite preventive behaviours.

Whilst ticks can be active all year, UKHSA are encouraging the promotion of tick awareness at 2 key time periods which present the biggest risk in terms of exposure to ticks. These are the start of the tick season (March and April) and the time of year when most tick bites are reported to UKHSA (June). During these time periods, key tick awareness messages could be shared via social media, to remind people to 'be tick aware'. UKHSA would also aim to promote key messages at these times, allowing for consistent and coordinated messages to be delivered. These timings are a guide, however, and tick awareness messaging can coincide with other public health events, for example, sun awareness, keeping safe in the countryside or physical activity, if these are more appropriate locally.

Event feedback

It is important to obtain feedback during events to raise tick awareness, taking on board comments from stakeholders particularly to evaluate the success of campaigns and to tailor future messaging or materials to local needs. We would encourage you to follow your own local guidance in evaluating campaign work.

Tips for raising tick awareness

Communicate the importance of spending time outdoors and the health benefits of leading an active life through participation in outdoor events.

Talk about the simplicity of carrying out regular tick checks, highlighting the different areas that need checking on children and adults, and encourage individuals to make this part of their daily routine after spending time outdoors.

Discuss tick awareness in the context of the health risk of tick-borne diseases, particularly LD, so that people appreciate the importance of checking for ticks regularly and removing them safely and promptly.

Refer people to the [NHS website](#) for information about the symptoms of LD and other rarer tick-borne diseases, for example, tick-borne encephalitis. Encourage individuals who think they are exhibiting symptoms to contact their GP or dial NHS 111 promptly.

Be mindful that there is a lot of online material available on ticks and LD, much of which stems from the United States, and may not be relevant to the situation in the UK. The messages that form part of this toolkit are directly relevant to the UK.

Communicate that the risk of contracting LD in the UK is far higher than any other tick-borne disease.

Contact UKHSA if you have any further queries on raising tick awareness in your area.

Do not offer alternative suggestions of tick removal that may be common misconceptions or beliefs about how ticks can be removed. The messages included in this toolkit are based on scientific evidence and are the safest methods to remove ticks to minimise infection.

Do not attempt to make any clinical diagnoses if presented with a tick bite, rash or other possible symptoms of tick-borne disease. The public should contact their GP or dial NHS 111 promptly for further advice.

Tools available to help raise awareness

Along with this toolkit, accompanying files containing a tick awareness poster (Figure 3), leaflet (Figure 4) and images have been made available at [Tick bite risks and prevention of Lyme disease: resources](#). Local authority logos can be added to the leaflet and poster templates, by copying your logo into the top right-hand corner. Both templates will look faded upon opening, but printing or saving as a pdf will correct this.

Figure 3: Tick awareness poster

 UK Health Security Agency

Enjoy the outdoors but 'be tick aware'

Ticks can transmit microbes that cause infections such as Lyme disease or tick borne encephalitis.

Being tick aware by using the following information can help to reduce the chance of tick bites and of being infected:

- you could be exposed to ticks whenever you spend time outdoors, including when in your garden or the local park
- ticks mainly attach to animals, but sometimes they may bite you, your family or your pets
- you can reduce the chance of tick bites by walking on clearly defined paths, using insect repellent and performing **regular tick checks**
- ticks can bite anywhere on the body, including in your hair. More than one tick can be attached to you at a time
- some tick bites can result in infection, so it is important to remove ticks safely and as quickly as possible
- the safest way to remove a tick is by using a pair of **fine-tipped** tweezers or a tick removal tool
- if you begin to feel unwell with flu-like symptoms, persistent headache, confusion or develop a spreading circular red rash (which usually appears within 1 to 4 weeks after being bitten), **contact your GP or NHS 111 promptly.** Mention if you were bitten by a tick or have recently spent time outdoors

Tick sizes compared to a one penny coin

Tick in the environment

Tick attached to skin

Lyme disease bullseye rash

Tick found under hair

For more information, search for the phrases 'ticks' and 'Lyme disease' on these websites:
www.nhs.uk www.gov.uk www.nice.org.uk/guidance

GOV-11370

Figure 4: Tick awareness leaflet

Key tick awareness messages

- **'be tick aware'** and remember that you could be exposed to ticks whenever you spend time outdoors, including when in your garden or the local park
- ticks mainly attach to animals, but sometimes they may bite you or your family. It is important to remember that bites can occur on any part of the body and more than one tick can be attached at a time
- you can reduce the chance of tick bites by walking on clearly defined paths, using insect repellent and performing **regular tick checks**
- some tick bites can result in infection, so it is important to remove ticks safely and as quickly as possible
- the safest way to remove a tick is by using a pair of **fine-tipped** tweezers or a tick removal tool
- if you begin to feel unwell with flu-like symptoms, or develop a spreading circular rash (which usually appears within 1 to 4 weeks after being bitten), **contact your GP or dial NHS 111 promptly**

More information

For more information, search for the phrases 'ticks' and 'Lyme disease' on these websites: www.nhs.uk www.gov.uk

www.gov.uk/government/collections/lyme-disease-guidance-data-and-analysis

www.nhs.uk/conditions/lyme-disease/

www.nhs.uk/conditions/tick-borne-encephalitis/

You can also send any ticks you find to our Tick Surveillance Scheme. Visit www.gov.uk/guidance/tick-surveillance-scheme to find out more.

NICE Lyme guidance: www.nice.org.uk/guidance/ng95

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Corporate member of
Plain English Campaign
Committed to clearer
communication
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UKHSA supports the Sustainable
Development Goals

Enjoy the outdoors but 'be tick aware'

'Be tick aware' to avoid tick bites and know how to take action if you or your family get bitten by ticks

Tick sizes compared to a one penny coin

What are ticks?

Ticks are small, spider-like creatures that feed on the blood of animals, including people. The size of a tick can vary, with a larva being as small as a tiny freckle, and fully fed females similar in size to a baked bean.

Where do you find ticks?

Ticks survive in many habitats, but prefer moist areas with leaf litter or longer grass, like in woodland, grassland, moorland, heathland and some urban parks and gardens. Ticks don't fly or jump. They wait on vegetation for a host to pass by, and then climb on. They bite and attach to the skin and feed on blood for several days, before dropping off. Ticks are found throughout the year, but are most active between spring and autumn.

Main health risks

- ticks can sometimes transmit microbes that may cause human diseases such as Lyme disease and tick-borne encephalitis (TBE), though TBE is rare in the UK. It is important to be tick aware and see your GP promptly for diagnosis and treatment if you recognise the symptoms of tick-borne diseases which can include:
 - a flu-like illness, fatigue and muscle and joint pain
 - a characteristic expanding red rash, known as erythema migrans (present in many but not all cases)
 - persistent headache, confusion or sensitivity to bright light
- you may not always remember being bitten by a tick, so if you have spent time outdoors and develop any of these symptoms, seek advice from your GP or dial NHS 111
- Lyme disease can be treated with a course of antibiotics. Without treatment, more serious conditions can develop such as swelling in some joints or problems with the nerves and heart, so prevention and early detection are key
- rarely ticks transmit tick-borne encephalitis (TBE), however the risk in the UK is very low. Symptoms include flu-like illness, persistent headache, confusion and sensitivity to bright light

Avoiding ticks

- walk on clearly defined paths to avoid brushing against vegetation
- wear light-coloured clothes so ticks can be spotted and brushed off
- use repellents such as DEET
- carry out a tick check

Carry out a tick check

Make it a habit to check your clothes and body regularly for ticks when outdoors and again when you get home. Check your children and pets as well.

Areas that ticks may frequently be found include skin folds, armpits, groin, waistband area, back of the neck and hairline. Data from UKHSA's Tick Surveillance Scheme shows that adults are commonly bitten on the legs, whilst children are commonly bitten on the head or neck area. It is important to remember, however, that bites can occur on any part of the body and more than one tick can be attached at one time.

If you have been bitten

- remove ticks as soon as possible
- the safest way to remove a tick is to use a pair of **fine-tipped** tweezers or a tick removal tool
- grasp the tick as close to the skin as possible
- pull upwards slowly and firmly, as mouthparts left in the skin can cause a local infection
- clean the bite area with antibacterial wash/soap and water, and monitor it for several weeks for any changes
- contact your GP promptly if you begin to feel unwell with flu-like symptoms or develop a spreading circular red rash. Remember to tell them you were bitten by a tick or have recently spent time outdoors

Tick removal with tweezers

Tick in the environment

Tick attached to skin

Lyme disease bullseye rash

Tick found under hair

Also available from UKHSA are:

- [poster and leaflet images](#)
- [Lyme disease: signs and symptoms](#)
- [Tick Surveillance Scheme](#)
- [Public Health Matters blog](#)
- [Watch out, ticks about! YouTube tick-awareness video](#)

Other examples of co-branding and own-branded materials

Wiltshire Council have produced a range of tick-awareness materials that can be found at [Tick awareness](#) and include a leaflet and poster.

Bath and North East Somerset Council have produced an '[Enjoy the countryside and be tick aware!](#)' leaflet and [poster](#).

Pages on the NHS website that may also be of use include overviews of:

- [Lyme disease](#)
- [insect bites and stings](#)
- [tick-borne encephalitis](#)

[NICE guidance](#) provides more information on the [diagnosis and management of Lyme disease](#).

If you need more support using or developing tick-awareness materials, please contact tick@ukhsa.gov.uk

Example tweets

Example Twitter posts about ticks and LD that can be used for your own campaigns are covered below. These include key public health messages and supplementary facts about ticks.

Public health messages:

- Tick activity increases in spring and peaks between April and June, and this is when tick bite risk is highest #TickAwareness #BeTickAware
- Spring is a great time to be outside, but don't forget to #BeTickAware – get tips on how to stay safe here goo.gl/CLXgbt #TickAwareness
- Carry out a #TickCheck after outdoor activities – look and feel for attached ticks on you, your family and pets #TickAwareness #BeTickAware
- If you do get bitten, #BeTickAware and remove the tick quickly and correctly to reduce any potential risk of infection #TickAwareness
- #BeTickAware: walk on paths, avoid dense vegetation, wear light-coloured clothes so ticks can be seen and removed goo.gl/CLXgbt #TickAwareness
- #BeTickAware by knowing what ticks look like, where they can be found and practice prevention behaviours to avoid bites #TickAwareness
- Remove ticks with fine-tipped tweezers, grip the head as close to the skin as possible and pull upwards #TickAwareness #BeTickAware
- Once the tick is removed, wipe the bite site with antibacterial wipes to prevent infection in the wound #TickAwareness #BeTickAware
- #MythBust: don't burn ticks or cover in Vaseline as they may regurgitate stomach content and cause infection #TickAwareness #BeTickAware
- The most common human disease transmitted by ticks is #LymeDisease. To stay safe #BeTickAware. If you are bitten #BeLymeAware and act early
- #BeLymeAware: A common early sign of #LymeDisease is a circular rash that can look like a bullseye. The rash may enlarge over days / weeks
- Help your GP #BeLymeAware: Tell them if you feel unwell after spending time in woodland, heath, parks or gardens where ticks could live
- #BeLymeAware: If you are given antibiotics for #LymeDisease, take the full course even if you start to feel better
- #BeLymeAware: Not everyone gets a bulls-eye rash. Sometimes #LymeDisease may feel like mild `flu. Sharp / prickly nerve pains may be felt
- Blood tests for #LymeDisease can be negative early in the infection. You may need to be retested a few weeks later. #BeLymeAware

Tick facts:

- Ticks are small arachnids that feed on blood of animals and can transmit pathogens that cause infections #TickAwareness #BeTickAware
- There are 22 tick species in the UK, the deer/sheep/castor bean tick (*Ixodes ricinus*) most commonly bites people #TickAwareness #BeTickAware
- Ticks have 3 active life stages: larvae, nymphs, adults. They develop to the next life stage after a blood meal #TickAwareness #BeTickAware

- Different life stages of ticks feed on different hosts; it can take 3 years to complete its life cycle #TickAwareness #BeTickAware
- Ticks climb up vegetation and wait for a host. They use sensory organs to detect CO₂, light or body heat #TickAwareness #BeTickAware
- After feeding, ticks drop off the host into the vegetation to digest and moult into the next life stage #TickAwareness #BeTickAware
- Ticks require dense ground vegetation to prevent drying out and can be found in woodlands, grasslands and moorlands #TickAwareness #BeTickAware
- Ticks are carried by hosts whilst feeding. Wildlife hosts include deer, small mammals, foxes, badgers and birds #TickAwareness #BeTickAware

Appendix: Key facts and messages that can be included in tick-awareness messaging

In the use of any of the materials included in this toolkit, the following accreditation statement should be used: “This text has been provided by UK Health Security Agency, whose mission is to make the nation health secure.” It is recommended that the information below remains unchanged to ensure that consistent information is used for tick awareness activities delivered at the local level.

Primary messages

Tick awareness is an important step towards reducing the chance of getting a tick-borne disease like Lyme disease. Lyme disease is the most common tick-borne infection in the UK.

Tick awareness messaging aims to increase knowledge about ticks, tick bites and the associated health risks, provide clear guidance on tick removal and symptom recognition and encourage the adoption of tick bite prevention behaviours.

Being tick aware by knowing what ticks look like, where they can be found, and practising prevention behaviours will help to avoid tick bites.

Make it a habit to carry out a tick check – an easy way to make sure you haven't picked up a tick while outdoors.

Look over your clothes and body regularly if you're outdoors and brush off any ticks you see.

Carry out a thorough tick check when at home by removing your clothing and having a good look and feel for ticks – look out for anything as small as a speck of dirt or a freckle.

If you do get bitten, removing the tick quickly and correctly can help to reduce any potential risk of infection.

Being bitten by a tick doesn't mean you'll definitely get Lyme disease as not all ticks carry Lyme-causing bacteria. If you are bitten by a tick infected with Lyme-causing bacteria, you can reduce the chances of the bacteria being transmitted by removing the tick quickly.

Prompt removal of ticks reduces the chance of tick-borne pathogens being transmitted to humans by feeding ticks.

A characteristic expanding rash, erythema migrans, is present in most **but not all** cases of Lyme disease. Seek advice from your GP or dial NHS 111 if you feel unwell after being bitten by a tick, even when you don't have a rash.

Contact your GP or dial NHS 111 if you begin to feel unwell and remember to tell them you were bitten by a tick or have recently spent time outdoors.

Secondary messages

Take simple steps to avoid coming into contact with ticks such as walking on clearly defined paths, avoiding dense vegetation, wearing light coloured clothing so ticks can be easily spotted and brushed off, or using a repellent such as DEET.

If you have been bitten by a tick:

- remove the tick as soon as possible
- the safest way to remove a tick is to use a pair of fine-tipped tweezers or a tick removal tool
- grasp the tick as close to the skin as possible and pull upwards slowly and firmly, as mouthparts left in the skin can cause a local infection
- once removed, apply antiseptic to the bite area, or wash with soap and water and keep an eye on it for several weeks for any changes

Tick bites may not hurt and you don't always notice you've been bitten, so make sure you thoroughly check yourself, your children and your pets.

Young children are more commonly bitten on the head so carefully check around their neck, behind the ears and along the hairline.

Lyme disease facts

There are around 1,500 laboratory-confirmed cases of Lyme disease in England and Wales each year. Altogether it is estimated that there are 3000 to 4000 new cases of Lyme disease every year in England and Wales. Many cases of Lyme disease will be treated by doctors without the need for laboratory tests.

Lyme disease can generally be treated effectively with a short course of antibiotics, but if it's not treated or there is a delay in treatment, there's a risk you could develop more serious conditions such as nerve damage, joint pain or more rarely, heart problems.

The risk of infection increases the longer a tick remains attached to the skin; removing ticks promptly will reduce the chances of infection.

You may not always remember being bitten by a tick, so if you develop symptoms commonly seen with Lyme disease, seek advice from your GP or dial NHS 111, and remember to tell them you have recently spent time outdoors where you may have been exposed to ticks.

Many people with Lyme disease develop a distinctive spreading circular rash at the site of the tick bite, usually around 1 to 4 weeks after being bitten. However, around one in 3 people with Lyme disease do not report seeing a rash.

Other symptoms of Lyme disease include one or more of:

- flu-like symptoms such as tiredness, muscle pain, joint pain, headaches, a high temperature, chills, neck stiffness
- paralysis of the facial muscles, typically on one side
- nerve pains, which may be sharp or prickly

A small red circular patch may appear soon after the tick bite and persist for a few days. This is normal, but if the red patch does not disappear within a couple of weeks or it begins to spread outwards, it may indicate Lyme disease.

In most cases, Lyme disease can be treated with a course of antibiotics. It is important to finish the course of antibiotics, even if you feel better sooner.

Later symptoms of Lyme disease can include:

- pain and swelling in the joints
- problems affecting the nervous system – numbness or pain in your limbs, paralysis of facial muscles, memory problems
- meningitis – inflammation of the membranes surrounding your brain and spinal cord, which causes headaches, neck stiffness and increased sensitivity to light
- heart problems (rare), such as inflammation of the heart muscle (myocarditis) or sac surrounding the heart (pericarditis), heart block or heart failure

Tick facts

Ticks are arachnids, not insects, so are closely related to mites, spiders and scorpions. Ticks are small spider-like creatures that feed on the blood of animals, including people.

The most common tick in the UK is *Ixodes ricinus*, which is also known as the sheep, castor bean or deer tick. However, unlike its name suggests, this tick will feed on a wide range of mammals, birds and some reptiles, as well as people.

Ticks can be found in woodland, grassland, moorland and heathland, but also some urban parks, gardens and allotments, where there are areas of dense vegetation which create the correct humidity level for tick survival.

Ticks can be found throughout the year but are most active between spring and autumn.

Ticks do not fly or jump – they wait on the tips of vegetation for an animal to brush past and then climb on.

The tick life cycle is made up of 4 stages – the eggs, larvae, nymphs and adults.

Ticks feed on blood, during which they can pass on infections. Bacterial infections such as Lyme disease can be spread to humans when they are bitten by an infected tick.

Ticks feed for one continuous period over a few days during each life stage.

People are most commonly bitten by the nymph stage of tick which are small and can be difficult to spot.

Ticks have special sensory organs on their front legs which they use to detect the heat, carbon dioxide and other stimuli of a passing host on which to feed.

Ticks are tiny, about the size of a poppy seed, but once they have fed, they can be as big as a baked bean.

Ticks feed on lots of different animals, so you may find them on your pets too.

Other tips

UKHSA monitors changes in tick distributions on a national scale via the [Tick Surveillance Scheme](#). Tick samples sent to UKHSA provide valuable information on the distribution of tick species present across the UK, their seasonal activity and their host associations. This information helps to highlight which tick species are important to human and animal health. You can contribute to the scheme by sending UKHSA your tick for identification. UKHSA do not routinely test ticks for pathogens.

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UKHSA is responsible for protecting every member of every community from the impact of infectious diseases, chemical, biological, radiological and nuclear incidents and other health threats. We provide intellectual, scientific and operational leadership at national and local level, as well as on the global stage, to make the nation health secure.

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