



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. 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), and is spread via the bite of infected ticks. Despite rare reports of probable cases of tick-borne encephalitis virus in southern England, 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 much 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 a tick awareness 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 resident and visiting members of the public in their area, to raise awareness of the risk posed by ticks. Locally driven tick awareness campaigns have also been shown to be successful in raising 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 and exposure risk, 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; a high-risk period for acquiring LD. 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

### What is the purpose of this toolkit?

The level of knowledge about ticks among the general population in England is low. 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 public or environmental health teams to deliver public health information on ticks and tick-borne disease prevention directly to their local population.

### Who is this toolkit 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, access to trusted information and guidance, and help in knowing 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 have acquired a tick bite.

This toolkit provides resources and tools to deliver information on tick ecology, tick bites and the associated health risks, correct tick removal and LD symptom recognition. 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

### What are ticks?

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.

## 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 moult 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 moult to the next stage. After mating, adult female ticks will lay several thousand eggs at ground level before dying.

## Where are ticks found?

Ticks are very sensitive to temperature and relative humidity, requiring areas with dense ground layer coverage of 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 are often highly abundant in ecotonal habitats, that is, transition zones between different habitats that are often used by wildlife. Without larger hosts such as deer that adult ticks feed on, tick populations are unable to establish, even when suitable vegetation and temperature and humidity conditions are met. Repeat introductions of ticks into suitable areas can occur, however, if such areas are accessible to wildlife that may inadvertently transport ticks that are feeding on them.

## When are ticks active?

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 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 following guidance can be used to reduce the chance of acquiring a tick bite when enjoying outdoor activities.

1. When outside, regularly check clothing and exposed skin for ticks and brush them off immediately.
2. Walk on clearly defined paths to avoid brushing against vegetation where ticks may be present.
3. Wear light coloured clothing so that ticks crawling on clothing can be spotted and brushed off immediately.
4. Use 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).
5. Consider 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.

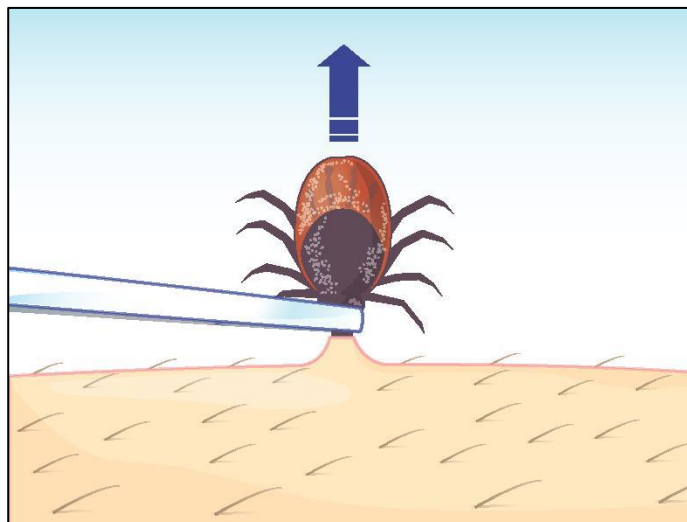
## Recognising ticks and performing a tick check

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) 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 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.

## 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).



**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

### What is Lyme disease?

Early symptoms of LD in humans may include mild flu-like symptoms, including fever, headache and fatigue. Early symptoms are usually accompanied by a characteristic spreading bulls-eye rash (called erythema migrans) at the site of the tick bite. It is important to know, however, that not all cases of LD have this rash (Figure 2) and it may not be noticed if it is under the hairline or in an awkward part of the body that is difficult to see easily. More images of typical LD rashes can be found on the [NICE website](#).



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



## How is Lyme disease treated?

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

More information on Lyme disease treatment can be found on the [government website](#).

## How is Lyme disease transmitted?

In nature, the bacteria 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 ticks' saliva. It should be remembered that not all ticks will carry the bacterium which causes LD and not all bites from an infected tick will result in human LD.

## Who is 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 acquired overseas. 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 on the [GOV.UK website](#).

## When is there 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 were probably acquired in late spring (when tick activity is high) and early summer, allowing for 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.

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

## How can Lyme disease 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.

## Is Lyme disease the only tick-borne disease in England and Wales?

The bacteria that cause LD are the most common pathogens in UK ticks. However, ticks can carry other microorganisms that, if transmitted to humans by a tick bite, may cause other tick-borne diseases.

Ticks infected with tick-borne encephalitis (TBE) virus have been found in a small number of areas in England, and on rare occasions, locally acquired probable cases of human TBE disease have been reported. The risk of this virus to the health of the general population in England has been assessed as very low. The risk of contracting LD from ticks in the UK is far higher (approximately 10,000 times) than contracting TBE.

Signs and symptoms of tick-borne encephalitis are available on the [NHS website](#).

## Section 4 - Raising tick awareness

### Why is raising tick awareness 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.

### What are the 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, what they look like and where
- where they might be exposed to ticks
- how to be vigilant for ticks when outdoors
- how to carry out regular tick checks after spending time outdoors
- how to safely remove attached ticks if they are found
- 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 emphasize the importance of carrying out regular daily tick checks, 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 enable members of the public easy access to correct 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 local authorities (or other stakeholders) can add their logos to the templates, allowing co-branding. Alternatively, any information contained within this toolkit can be used to develop bespoke tick awareness materials for use at the local level (that would have local authority branding, and acknowledgement that the information came from 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, 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/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. The following points can act as guidance when using social media to promote tick awareness.

1. Use #TickAwareness, #BeTickAware and #BeLymeAware in tweets where possible, and encourage stakeholders to use the same as this could help the topic to 'trend' and appear on more feeds.
2. Engage with people who reply to your tweets/posts with questions or comments to continue momentum.
3. 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.
4. As well as encouraging your followers and local organisations/contacts to re-tweet your messages, it is important to 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.

UKHSA are encouraging the promotion of tick awareness at 2 key time periods which present the biggest risk in terms of exposure to ticks; 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.

## Do's and do not's of raising tick awareness

**Do** communicate the importance of spending time outdoors, and the health benefits of leading an active life through participation in outdoor events.

**Do** 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.

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

**Do** 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.

**Do** 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 directly relevant to the situation in the UK. The messages that form part of this toolkit are directly relevant to the UK.

**Do** communicate that the risk of contracting LD in the UK is far higher than any other tick-borne disease. Although tick-borne encephalitis virus has been found in ticks in England, and on rare occasions, locally acquired probable human cases have been reported, the risk of this virus to the health of the general population in England has been assessed as very low. The risk of contracting LD from ticks in the UK is about 10,000 times higher than contracting TBE.

**Do** 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 safer methods to remove ticks in order to minimise infection.

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

# What tools are available to help raise awareness?

Along with this toolkit, accompanying files containing a tick awareness leaflet, poster and images have been made [available](#). 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.

The image displays four UKHSA tick awareness materials:

- Leaflet (top left):** Titled "Enjoy the outdoors but 'be tick aware'", it lists key messages such as "ticks can transmit microbes that cause infections such as Lyme disease" and provides instructions on how to safely remove a tick using fine-tipped tweezers. It includes a comparison of tick sizes to a one penny coin.
- Poster (top right):** Also titled "Enjoy the outdoors but 'be tick aware'", it features a close-up image of a tick on a leaf and provides key messages and more information on where to find ticks and how to avoid them.
- Informational Card (bottom left):** Titled "What are ticks?", it explains that ticks are small, spider-like creatures that feed on the blood of animals, including people. It also lists common habitats where ticks are found.
- Informational Card (bottom right):** Titled "Main health risks", it details the symptoms of Lyme disease, such as a characteristic expanding red rash and joint pain, and emphasizes the importance of early detection and treatment.

The following linked materials from UKHSA are also available for you to use when raising awareness of ticks.

1. [Poster and leaflet images.](#)
2. [Lyme disease: signs and symptoms.](#)
3. [UKHSA's Tick Surveillance Scheme.](#)
4. [Public health matters blog.](#)



5. 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 which can be found on their [website](#) and include a leaflet and poster.

Bath and North East Somerset Council have also produced a [leaflet](#) and [poster](#) which can be found online.

The following links to the NHS website may also be of use:

1. [An overview of Lyme disease](#)
2. [An overview of insect bites and stings](#)
3. [An overview of tick-borne encephalitis](#)

[NICE](#) 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](mailto: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/CLXggt](https://goo.gl/CLXggt) #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](http://goo.gl/CLXgbt) #TickAwareness
- #BeTickAware by knowing what ticks look like, where they can be found and practice prevention behaviours to avoid bites #TickAwareness
- If you do get bitten, #BeTickAware and remove the tick quickly and correctly to reduce any potential risk of infection #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 bulls-eye. 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 three years to complete its life cycle #TickAwareness #BeTickAware
- Ticks climb up vegetation and wait for a host; they use sensory organs to detect CO<sub>2</sub>, 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 1: Key facts/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 is the best way to reduce the chance of tick-borne pathogens being transmitted to humans by feeding ticks. This is true for Lyme disease and other much rarer tick-borne diseases such as tick-borne encephalitis (TBE).

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 the following:

- 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 3-week 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 live in areas where the vegetation provides a thick, moist layer on the ground, such as found in woodlands, grasslands, heaths.

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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# About the UK Health Security Agency

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