

Public Health England (PHE) encourages everyone to enjoy the outdoors and ‘**be tick aware**’^{i ii}, i.e. know:

- what ticks are and what they look like
- where they might be exposed to ticks
- how to carry out regular tick checks
- how to safely remove attached ticks if they are found
- how to spot **Lyme Disease**ⁱⁱⁱ symptoms.



Why is this important?

To minimise the chance of long-term ill health.



What is the local context?

Torbay residents will be exposed to ticks on Dartmoor and other places.



What should we do?

Raise awareness and encourage anyone with Lyme Disease symptoms to get promptly diagnosed and treated.

Ticks are small arachnids, closely related to mites and spiders, and can be found at any time of year, but are particularly active from spring through to autumn. The peak tick feeding period is April to June.

They can be found in many places, for example: Dartmoor, coast paths, country parks, woodlands and even urban parks and gardens. PHE have published a tick distribution map^{iv}.

Most ticks do not carry Lyme disease (*Borrelia burgdorferi*), but some do if they have already bitten an infected animal, for example an infected sheep or deer. In general, no more than 10% of ticks may carry the disease^v, although one study found up to 67% in a part of Hampshire^{vi}.

Ticks wait on grasses or other plants and transfer as a person brushes past. They can then crawl around the person before biting and the bite may not be felt because of their anaesthetic.

Attached biting ticks may not be noticed until they are seen, so it is important to regularly check

all skin, or children’s or pet’s skin after being outdoors^{vii}. They are often very small^{viii} but can swell to the size of a small pea during feeding. They like places such as behind knees, ears, armpits, neck and groin. After a while, bacteria may be transferred to the person from the tick, via regurgitation or saliva, so ticks should be removed from people using the correct technique^{ix} and tools^x (i.e. fine-tipped tweezers or twister tool) as soon as possible. It is generally thought that early tick removal reduces the risk of transmission^{xi}. Wash the bite with soap and water afterwards and then wipe with antiseptic.

Fig 1 Images of ticks reproduced from Public Health England



People bitten by a tick should keep an eye on the bite site for several weeks and if a slowly expanding, reddish, circular rash develops, or if they feel unwell with flu-like symptoms such as fatigue or joint pains, then they should see their GP and mention the tick bite.

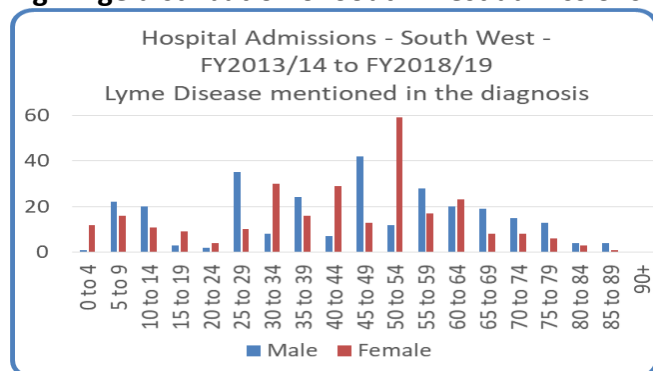
People should stick to paths wherever possible (and not walk through dense vegetation and grasslands), tuck their trousers into their socks and wear light coloured clothing so ticks can be

easily seen and brushed off, and use insect repellents on clothes and skin (those containing DEET^{xii} or PMD - oil of lemon eucalyptus^{xiii} - for example)^{xiv}. Walking sticks can be used to knock long grasses in front. Ticks may survive a washing machine.

The number of cases of Lyme disease in England and Wales showed a significant increase in 2017^{xv}. There were 1,750 serologically confirmed cases of Lyme disease in the UK in 2017: 1,579 in England and Wales (up from 1,134 in 2016), of which 1,214 were acute infections. The south of England contributes about 70%. It has been estimated that there are between 1,000 to 2,000 additional cases of Lyme disease each year in England and Wales that are not laboratory diagnosed. The rate is about 2 per 100,000.

In the South West (6 financial years 2013/14 to 2018/19), hospital episode statistics showed 554 admissions where Lyme disease was mentioned in the diagnosis (279 male, 275 female), ranging from 1 to 89 years old with a median age band of 45-49 years old.

Fig 2 Age distribution of South West admissions



Source: Hospital Episode Statistics (HES)

There is no significant trend by social-economic group. For all of Devon (83 admissions in 6 years, and 59 admissions in 3 years), the rate of admissions was lower for the most deprived 20%, but the numbers were low. South and West Devon Formulary and Referral have produced Lyme disease guidance^{xvi} which refers to NICE Guidance [NG95]^{xvii}.

Further PHE guidance and resources: <https://www.gov.uk/government/publications/tick-bite-risks-and-prevention-of-lyme-disease> including the tick awareness toolkit

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/694157/PHE_Tick_Awareness_Toolkit.PDF and various posters.

References and Further Information

- ⁱ PHE. Tick awareness and the Tick Surveillance Scheme <https://www.gov.uk/guidance/tick-surveillance-scheme>
- ⁱⁱ PHE. Enjoy the outdoors but 'be tick aware' https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/694158/PHE_Tick_Leaflet.pdf
- ⁱⁱⁱ NHS. Lyme Disease <https://www.nhs.uk/conditions/lyme-disease/>
- ^{iv} Ticks distribution <https://www.gov.uk/government/publications/ticks-distribution-of-ixodes-ricinus-in-england-scotland-and-wales>
- Map of tick threat risk <https://www.msd-animal-health-hub.co.uk/BFTP/why-protect/map-of-threats>
- ^v The Guardian. (2017) <https://www.theguardian.com/lifeandstyle/2017/aug/22/ticks-lyme-disease-matt-dawson-harm>
- ^{vi} Lyme Disease Action (2015): <https://www.lymediseaseaction.org.uk/research-papers/uk-b-burgdorferi-strains/>
- ^{vii} PHE. Lyme disease signs and symptoms (2018) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718980/LymeDiseaseSignsAndSymptoms_requested_changes_June_2018_final_Clean.pdf
- ^{viii} Lyme Disease Action UK tick images <https://www.lymediseaseaction.org.uk/about-ticks/uk-tick-images/>
- ^{ix} BADA UK. Tackling Ticks. <https://www.youtube.com/watch?v=m2avEmmLeEA>
- ^x Tick Twister tool https://www.youtube.com/watch?v=k0ow_yWLZoM
- ^{xi} Lyme borreliosis: a review of data on transmission time after tick attachment (2014) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4278789/>
- ^{xii} DEET <https://en.wikipedia.org/wiki/DEET>
- ^{xiii} PMD lemon eucalyptus <https://www.webmd.com/vitamins/ai/ingredientmono-1108/lemon-eucalyptus>
- ^{xiv} Tick Repellents (2016) <https://lymediseaseuk.com/2016/03/27/literature-review-of-tick-repellents-nicola-seal/>
- ^{xv} HM Government. Zoonoses report UK 2017 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765111/UK_Zoonoses_report_2017.pdf particularly pages 51-52.
- ^{xvi} South and West Devon Formulary and Referral Lyme disease guidance <https://southwest.devonformularyguidance.nhs.uk/formulary/chapters/5.-infections/lyme-disease>
- ^{xvii} NICE guidance Lyme disease (2018) <https://www.nice.org.uk/guidance/ng95>