

Lyme Disease-General information

Background

Lyme Disease is an infection caused by spiral-shaped bacteria called *Borrelia burgdorferi*, which are carried by some types of ticks. These hard-bodied Ixodid ticks (sometimes known as sheep or woodland ticks) may be found in forested, heathland and moorland areas and also in suburban parklands; they are less frequently found in coniferous forests. Areas inhabited by deer are particularly suitable habitats for ticks, but not every tick infested area has a high risk of Lyme borreliosis, and not all ticks carry the bacteria.

Transmission

Infected ticks can transmit the organisms during blood feeds, when they may be attached to the skin for several days if left undisturbed. Late spring, early summer and autumn are peak times for tick feeding, and ticks tend to be found seeking feeds in areas of long grass. Ticks need a blood meal to transform into the next stage, or lay eggs. They are very small (about the size of a poppy seed), and can easily be overlooked, so it is important to be aware of the risk of tick bite, check for attached ticks and remove them promptly.

Symptoms

The most common problem associated with the infection is a rash spreading from the site of a tick bite, but other more serious problems can occur. These include a viral-like meningitis, facial palsy, other nerve damage or arthritis. All stages of the infection respond to treatment with antibiotics, but it is easiest to treat at an early stage, especially when the rash is present.

Occurrence

Areas in the UK where people acquire Lyme borreliosis include many popular holiday and outdoor activity destinations such as the New Forest, Exmoor, the Lake District, the Scottish Highlands and Islands, North York moors, Thetford Forest, the South Downs. Although these are high risk areas for Lyme borreliosis, any area where Ixodid ticks are present should be regarded as a potential risk area. At least 50% of infections acquired in the UK are known to have been acquired in southern counties of England.

At least 15-20% of laboratory-confirmed infections are acquired abroad, mostly by holidaymakers. European countries include France, Germany, Austria, Sweden, Norway, Denmark, Czech Republic, Slovakia, Slovenia, Croatia, Romania, Bulgaria and the Baltic Republics. The north-eastern and upper midwest states of the USA have numerous high risk areas. Each year, a significant number of infections are acquired in the course of activity holidays, including walking, trekking and mountain-biking.

Prevention

No vaccine against Lyme borreliosis is currently available, so tick awareness, appropriate clothing (i.e. long trousers, thick socks, long sleeved shirts etc) in tick infested areas, and early removal of attached ticks remain the most important prevention measures. Insect repellents containing DEET may also be useful to protect uncovered areas of skin.

Infection can be prevented altogether by taking measures to avoid tick bites and by removing ticks at an early stage of their blood feed, as a tick usually has to be attached to the skin for some hours before transmission takes place. It is important not to try to cover an attached tick with volatile oils, or to try to burn it with a lighted cigarette ends or match heads, as these actions may cause the tick to pass the bacterium into the host's skin prematurely, and also risk damaging the skin by burning. Removal is best achieved with fine-toothed tweezers, pulling steadily away from the skin. Inexpensive proprietary tick removal implements are available from some veterinary surgeries and pet supply stores, and are useful for people who are likely to have frequent exposure to ticks.

It is important to check over the skin surface for attached ticks, including skin folds (armpits, groins, under the breasts, and around the waistband) after a day out in a tick infested area. Carefully check the head and neck, including the hair, of young children. Also check that unfed ticks are not brought home on clothes, and make sure that pets do not carry ticks home on their fur.

*This information is based on the latest advice from the Health Protection Agency-19th March 2008