

## Health & Physiology

# English and Welsh hospital patients in the Lyme-light

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### ABSTRACT

*A description of the socio-demographic characteristics of hospital admissions for Lyme disease. Cases were predominately female, and in children or retirement age adults. They mainly lived in rural affluent areas with a clear hotspot in southern England.*



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Lyme disease is the most common vector-borne disease in the Northern Hemisphere. It is spread through the bite of ticks and can cause a 'bull's eye' rash, fever, joint pain, and sometimes nerve problems. The amount of Lyme disease in each country in Europe varies a lot. Several factors influence it. The number of ticks present, how many ticks carry the disease, the suitability of habitat for ticks, and lifestyle choices (such as hiking) that place the general public in contact with ticks.

In England and Wales, national figures for Lyme disease are based on positive lab results. Most patients present at their family doctor and are successfully treated. Sometimes patients with unusual presentations end up being treated in hospital. We do not know the demographics of these hospital patients, where in the country they reside, and how they are managed within hospitals. These

data could provide vital information about which Lyme disease patients are accessing the National Health Service (NHS).

NHS England and Wales collect data about every patient that enters their hospitals. These Hospital Episode Statistics can be interrogated to find more information about patients with certain conditions and how they access healthcare. Patients recorded with having Lyme disease were identified between 1998 and 2015. Data was then collected regarding their age, sex, ethnicity, and where they lived. Further data was extracted, exploring how they entered hospitals.

Over the study period, there was only a small increase in the number of patients attending hospitals. They were predominately female, and most cases were in young children and retirement

age adults. Compared to the national population, they were more likely to identify with being white. The patients were spread across the countries at a low level but with clear hotspots of disease in the south and south-west of England. Patients tended to live in rural and more affluent areas. A lot of patients accessed the hospitals through the emergency department.

Information about the patients' characteristics supports previous research. It describes two distinct age groups that appear to be engaging in activities that make them at higher risk of Lyme disease. What do you think these activities could be? We do not know, but it could just be kids being kids and playing outside, or older people hiking or gardening. The map highlights that the risk of Lyme disease is mainly low, but there is one area with higher disease levels. This area is known to have a high number of ticks and is frequently accessed by the public due to its national parks and beautiful countryside. Affluent and rural areas have the highest number of Lyme disease patients. We do not know why, but they may have easier access to the tick habitats and more leisure time to spend in them.

The fact that a lot of people accessed the hospitals via emergency departments rather than being referred to was surprising. This may indicate either that the public is unaware of the symptoms and ease of treatment of Lyme disease, or that they are struggling to get an appointment with their family doctor. This data highlights that more education is

needed to raise appropriate awareness of Lyme disease within the public. This education should be focused on the geographical areas and populations highlighted to ensure that the most at-risk groups are made aware.

This is the first time that hospital patients with Lyme disease have been described in England and Wales. However, this only provides an overhead view of the Lyme disease population. We still don't know what clinical symptoms they presented with, how they were treated, how well they recovered, and how much Lyme disease costs the NHS. There is still a lot of research to be done!

There has only been a small rise in Lyme disease cases in England and Wales, but we now know who and where people are getting infected. With this information, targeted health promotion campaigns can be designed.

Remember, if you get bitten by a tick, remove it in the appropriate manner (<https://www.youtube.com/watch?v=0wotB38WrRY>) and if you develop any signs of illness, see your family doctor. The countryside is a fantastic place to explore and exercise in and provides innumerable physical and mental health benefits. A little tick should not dissuade you from going there, just know what to do if you get bitten!