Medical Xpress

Badger sleeping habits could help target TB control

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Sleeping away from the family home is linked to health risks for badgers, new research by the University of Exeter and the Food and Environment Research Agency has revealed.

Scientists found that badgers which strayed away from the family burrow in favour of sleeping in outlying dens were more likely to carry TB.

The 12-month study of 40 wild badgers was funded by the Department for Environment, Food and Rural Affairs (Defra) and could have implications for the management of bovine TB in parts of the UK. The behaviour of individual animals is thought to be a key factor in how the disease is spread among animals and livestock. The new findings could help to understand and develop measures to manage TB in badgers.

The study is published online on December 19 2012 in the journal Behavioral Ecology *and Sociobiology*. The work was carried out by Dr Nicola Weber of the University of Exeter's Cornwall Campus, who said: "At a time when stopping the spread of TB is vital for British farming, it's crucial to understand all of the factors involved in the transmission of the disease. Our research found that some individual badgers are more likely to sleep in setts in the outskirts of their territory. These individuals may be coming into contact with other sources of infection more frequently, meaning they could be more likely to both contract and to spread the disease, either to other badgers or to cattle."

Dr Weber attached electronic surveillance collars to badgers from eight groups at Woodchester Park in Gloucestershire, where the badger population is naturally infected with TB. Scientists selected a sample of 40 badgers from across the groups to provide a representative sample of age and sex.

In the study, each group had a territory made up of one or two main setts, which are used as the primary year-round underground den. They also had between three and eight outlying setts, which were occupied less frequently. The badgers were monitored for 28 consecutive days per season for one year to investigate how patterns differed between individuals.

Professor Robbie McDonald of the University of Exeter said: "Badgers occupying outlying dens are most likely to be looking for a mate, or defending their group territories. We think they acquire infection as a result of living on the periphery and contacting more individuals from other social groups, rather than because they are ostracised as a result of contracting the disease. It would be valuable to test the relationship between behaviour and infection more thoroughly.

"For all sorts of human epidemics, from typhoid to the common cold, some people are known to behave in a particular way which means they are more likely to spread the disease than the average individual. Our research demonstrates that this may also be true of TB in badgers. This knowledge could have long-term implications for managing the disease. Whatever the means of tackling infection in wildlife, it would be beneficial to know which individuals are most likely to spread TB to badgers and to cattle, and to design cost-effective management measures accordingly."

Provided by University of Exeter