

# PRESS INFORMATION

**“8<sup>th</sup> Meeting of the International Scientific Working Group on TBE  
(TBE: Tick Borne Encephalitis)”  
“TBE a European Health Challenge”  
Hotel Bayerischer Hof, Munich  
Friday, March 17<sup>th</sup> 2006**

## **The geography of TBE emergence: defining the problems and testing hypotheses** Prof. Dr. Sarah Randolph

In Europe, the commonest tick-borne diseases are Lyme disease caused by bacteria and tick-borne encephalitis (TBE) caused by a virus. Records going back half a century show that TBE has increased significantly over the past 2 decades, but the causes are not yet understood. A single cause, common to all of Europe, is unlikely because the pattern of epidemiological change varies markedly between countries, and also between different regions within countries.

- In Western Europe, TBE incidence has generally increased steadily since the mid-1980s.
- In many Central and Eastern European countries, very abrupt increases coincided with independence from communist rule in the early 1990s. This was more dramatic in the Baltic States and Poland, where cases increased up to 30 times within 1 year, than in the Czech Republic and Slovakia, where case numbers doubled.
- In Hungary and Croatia, fewer TBE cases were recorded from 1997 onwards.
- Irrespective of the overall national pattern, in each country there are different areas where TBE incidence has either increased, or decreased, or stayed the same.

Given this highly complex situation, the first problem is to derive accurate, spatially explicit descriptions of the epidemiological changes that we are trying to explain. As part of the EU-funded EDEN project (Emerging Diseases in a changing European Environment) (<http://eden.cirad.fr>), 16 partners from 14 countries within the Tick-Borne Diseases sub-project have collected archived data to match records of TBE over the past 35 years to records of possible causal factors: public health activities, climate, land-cover, tick abundance, host abundance, and sociological indicators of changes in human behaviour. Currently the working hypothesis is that a variety of environmental changes caused by different human influences (e.g. environmental awareness, industrial and agricultural practices) act independently, but synergistically, to increase the abundance of infected ticks and also the risk of human contact with those ticks. In some hotter, drier parts of Europe, the changing climate may have become less suitable for ticks, causing a decrease in TBE.

Such hypotheses will be tested with new field data on ticks and their infection prevalence, collected over the next 3 years at 4-6 sites in each partner country. Only when we fully understand the past and present can we predict risk in the future as environmental conditions continue to change.