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Lyme borreliosis in Bavaria, Germany, 2013–2025: a pre-vaccination baseline

Inhalt

Background

Lyme borreliosis (LB) is endemic in Bavaria and a One Health challenge at the interface of human behavior, climate and tick vectors. Given ongoing climate change and a forthcoming vaccine, we describe long-term epidemiological patterns to identify target groups and establish a baseline for vaccine impact assessment.

Methods

We analyzed Bavarian LB surveillance data from 01.03.2013–31.12.2025, calculating incidence by time, place and person. We assessed seasonality using monthly aggregates, overall incidence trend using Mann–Kendall test and age-specific trends using Poisson regression.

Results

Of 55,990 confirmed cases (median age 54), average annual incidence was 33.1/100,000 (23.2–47.6), with no monotonic long-term trend ($\tau=0.05$, $p=0.855$). Seasonality was stable: 77.8% of cases occurred May–September, peaking in July. Incidence was highest in adults aged 60–69 years (54.6/100,000), followed by those aged 50–59 years (43.6) and children aged 5–9 years (40.5; $p<0.001$). Incidence increased in children aged 0–4 years (IRR=1.047/year; 95% CI:1.036–1.058), while slight decreases occurred in some older age groups. Females comprised 53.8% of cases, but males predominated in severe manifestations.

Conclusions

LB remains of high public health relevance in Bavaria. Our findings reveal important subgroup differences that support risk-based prevention and age-targeted vaccination strategies and warrant further study of underlying risk factors particularly in young children.

Keywords

Lyme borreliosis, Surveillance, Trend analysis, Epidemiology, Germany

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No, I am not a Junior Scientist.

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