

Seroprevalence and associated factors of toxoplasmosis in female children and adolescents in Germany

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1. Background

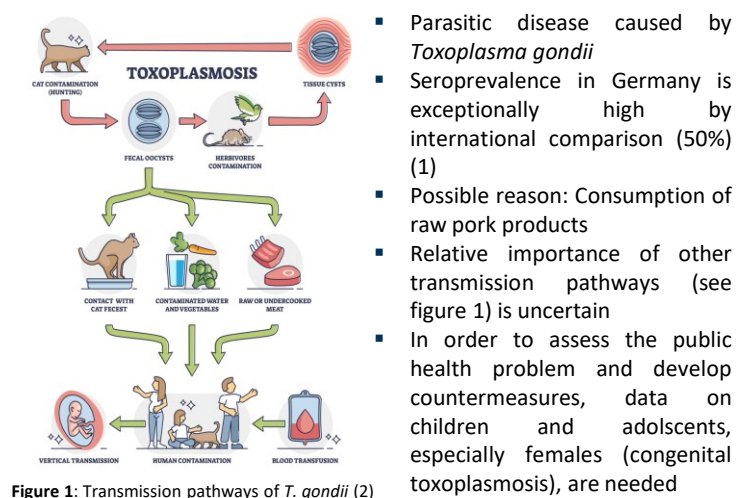


Figure 1: Transmission pathways of *T. gondii* (2)

2. Method

Data basis	German Health Interview and Examination Survey for Children and Adolescents – 2nd follow-up (2014-17)
Study design	Cross-sectional
Study population	3 to 17-year-old girls with permanent residence in Germany (n=1 453)

- Serum specimens were tested for the presence of *T. gondii* IgG antibodies using enzyme-linked fluorescence assay (ELFA)
- Determination of overall and stratified seroprevalence
- Identification of associated factors in multivariable logistic regression models based on directed acyclic graphs
- Sampling weights were applied for all statistical analyses to ensure representativeness

3. Results

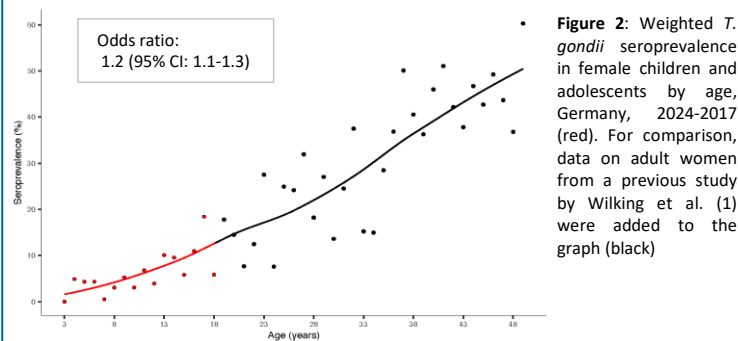


Figure 2: Weighted *T. gondii* seroprevalence in female children and adolescents by age, Germany, 2014-2017 (red). For comparison, data on adult women from a previous study by Wilking et al. (1) were added to the graph (black)

- Weighted *T. gondii* seroprevalence: 6.3% (95% CI: 4.7-8.0)
- Low socioeconomic status and living in rural areas or cities are significantly associated with seropositivity (see figure 3)
- No correlation between vegetarianism and seropositivity

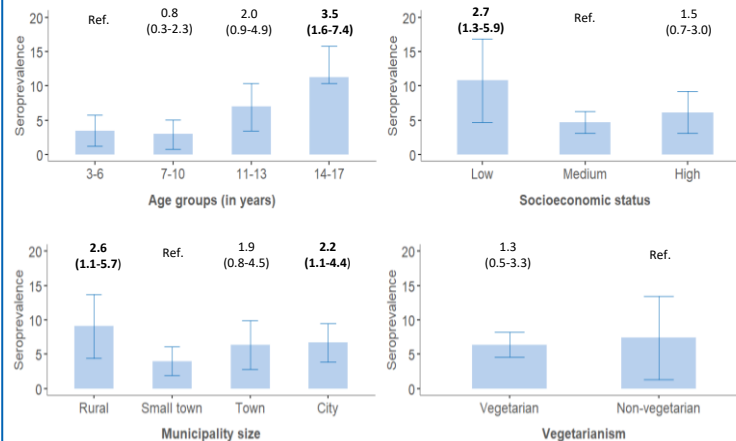


Figure 3: Stratified weighted *T. gondii* seroprevalence with 95% CI in female children and adolescents and adjusted odds ratios with 95% CI from multivariable logistic regression, Germany, 2014-2017

4. Discussion

Key messages

- T. gondii* causes a high infection pressure for girls and young women in Germany
- Transmission pathways might differ between age groups
 - More environmental than meat-related infections in children and adolescents (3)
 - Alternatively, risk factors associated with meat consumption have shifted over time (e.g. improvements in meat production)

Limitations

- Serosurvey is cross-sectional and represents the cumulated lifetime risk for infection → misclassification of exposures and unmeasured confounding is possible
- Lack of data on different exposure variables (e.g. cat ownership)

Recommendations

- Different *T. gondii* prevention strategies in children and adolescents
- Overall aim: efficient primary prevention (low contamination of environment and livestock) following a One Health approach

5. Contact & References

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References:

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- VectorMine. Schematische Gliederung der Toxoplasmose-Erkrankung und der Kontamination durch parasitäre Erkrankungen – Vektor Illustration. 2024. <https://www.istockphoto.com/de/vektor/schematische-gliederung-der-toxoplasmose-erkrankung-und-der-kontamination-durch-gm2076883395-564951896>
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