Seroprevalence of *Toxoplasma gondii* in domestic pigs, sheep, cattle, moose and wild boars in the Nordic-Baltic region: Methodological considerations

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BACKGROUND & OBJECTIVE

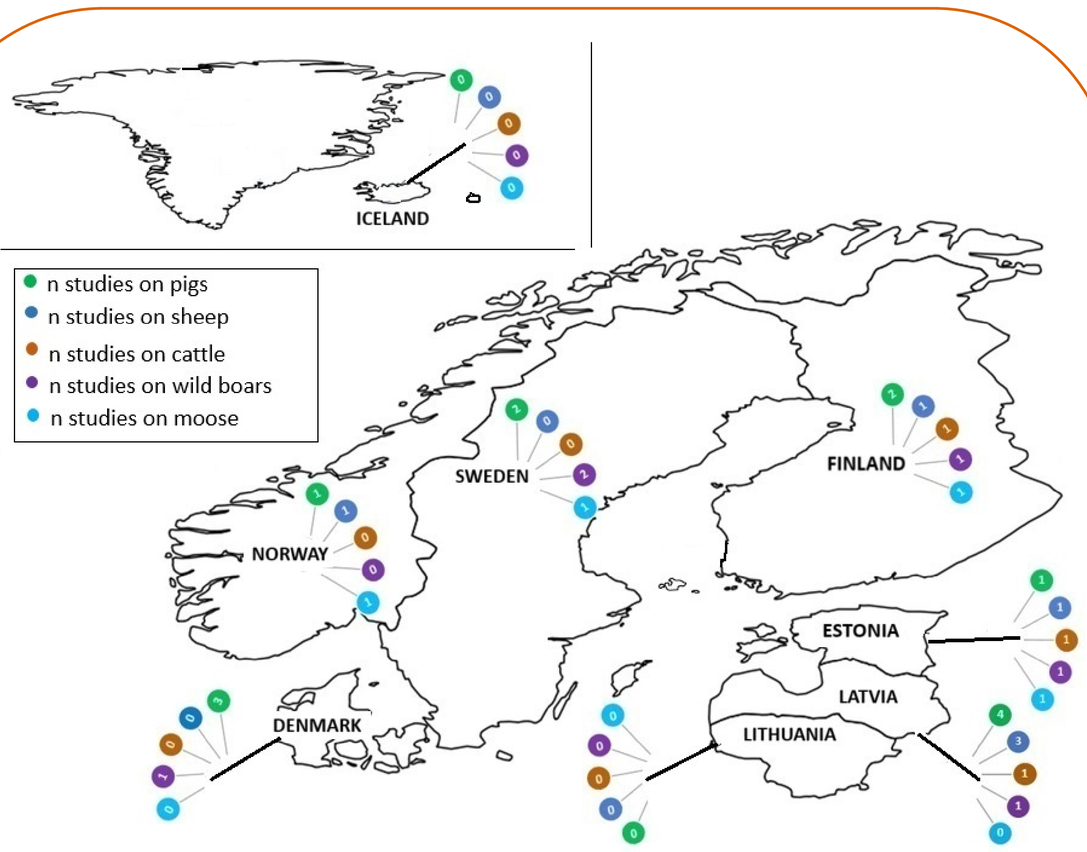
- The seroprevalence of *Toxoplasma gondii* in humans varies by country in the Nordic-Baltic region.
- Our objective was to estimate if meat of infected animals could explain this geographical variation.

METHODS

- Systematic review and meta-analysis of existing seroprevalence studies.

RESULTS

- From 271 studies identified, 32 were included in the meta-analysis.
- Eight studies reported both the sensitivity and the specificity of the serological test used.



Number of *T. gondii* seroprevalence studies in domestic pigs (N=13), sheep (N=6), cattle (N=3), wild boars (N=6), and moose (N=4) by country in the Nordic-Baltic region, 1990–2018 that qualified for a meta-analysis (Olsen et al. 2019)

Estimated *T. gondii* seroprevalence and heterogeneity measures by two age groups (young = ≤ 1 year, old = > 1 year) in domestic pigs, sheep, wild boars and moose using mixed effects model in the Nordic-Baltic region (Olsen et al. 2019)

Host species	Age group	Pooled seroprevalence (%) (95% CI)	Heterogeneity			Statistical effect of age
			Q	Q-P	I^2 (%)	P-value
Domestic pig	Young	4.0 (2.0–6.3)	69.6	<0.01	90.0	< 0.0001
	Old	18.1 (12.0–25.2)	32.8	<0.01	91.0	
Sheep	Young	13.1 (5.6–23.0)	3.9	0.14	49.0	0.04
	Old	27.8 (17.9–38.9)	188.4	<0.01	99.0	
Wild boar	Young	25.7 (16.0–36.7)	10.2	0.02	71.0	0.10
	Old	38.4 (28.0–49.4)	35.3	<0.01	91.0	
Moose	Young	8.3 (4.0–14.0)	46.3	< 0.001	85.0	0.01
	Old	19.4 (13.0–26.7)	20.5	< 0.001	94.0	

95% CI is confidence interval

NOTE: Cattle were omitted from subgroup analysis due to the low number of studies

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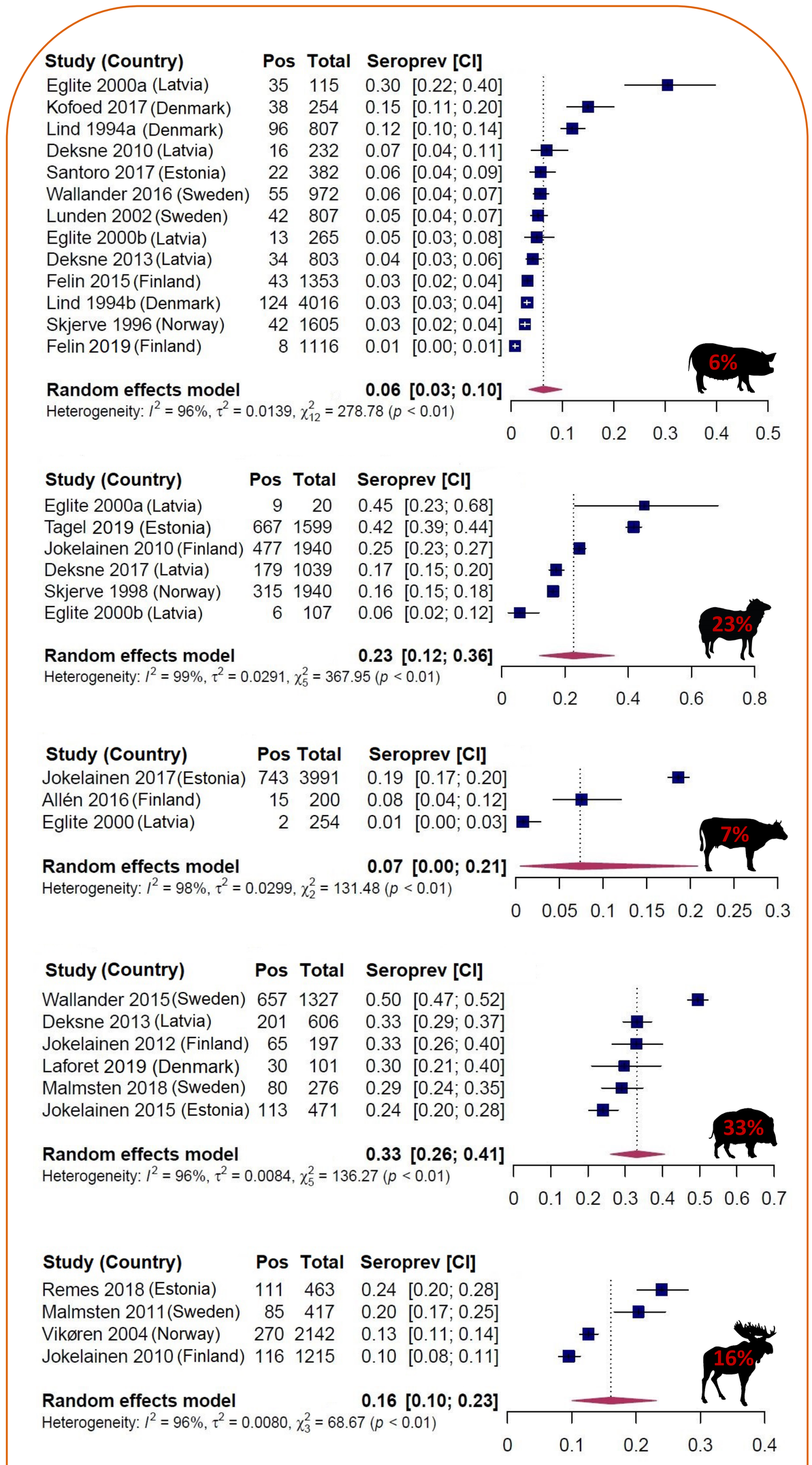

Estimated pooled seroprevalence of *T. gondii* in domestic pigs, sheep, cattle, wild boars and moose respectively, in the Nordic-Baltic region using a random effects model (Olsen et al. 2019)

CONCLUSION

- Low number of studies and lack of information on sensitivity and specificity of the different serological tests prevented identification of patterns by country.
- Future studies should report the accuracy of the tests to allow comparison of results.
- Seroprevalence was high in all five species and significantly higher in older than in younger animals, except in wild boars.

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