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The relationship between *Toxoplasma gondii* infection and mood disorders in the third National Health and Nutrition Survey.

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Abstract

BACKGROUND: *Toxoplasma gondii* (*T. gondii*) is a neurotropic protozoan parasite that causes persistent infection in humans. A substantial literature suggests that schizophrenia is associated with increased seroprevalence of *T. gondii*, but a possible link of the parasite with mood disorders has not been as thoroughly investigated.

METHODS: We examined the association of *Toxoplasma*-specific immunoglobulin G results with mood disorder outcomes in 7440 respondents from the third National Health and Nutrition Survey, which is a nationally representative sample of the United States noninstitutionalized civilian population. Regression models were adjusted for numerous potential confounders, including tobacco smoking and C-reactive protein levels.

RESULTS: No statistically significant associations were found between *T. gondii* seroprevalence and a history of major depression ($n = 574$; adjusted odds ratio [OR]: .8; 95% confidence interval [CI]: .5-1.2), severe major depression ($n = 515$; adjusted OR: .8; 95% CI: .6-1.2), dysthymia ($n = 548$; adjusted OR: 1.1; 95% CI: .7-1.8), or dysthymia with comorbid major depression ($n = 242$, adjusted OR: 1.2; 95% CI: .6-2.4), all p values were $> .05$, including analysis stratified by gender. However, there was a significant relationship between *T. gondii* seroprevalence and bipolar disorder type I for respondents in which both manic and major depression symptoms were reported ($n = 41$; adjusted OR: 2.4; 95% CI: 1.2-4.8; $p < .05$).

CONCLUSIONS: In a population-based sample, *T. gondii* seroprevalence is not elevated in unipolar mood disorders but is higher in a subset of respondents with a history of bipolar disorder type 1.

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