

# Toxoplasma infection increases risk of schizophrenia, study suggests

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Findings from what is believed to be the largest comparison of blood samples collected from healthy individuals and people with schizophrenia suggest that infection with the common *Toxoplasma gondii* parasite, carried by cats and farm animals, may increase the risk of schizophrenia.

A report on the study, conducted among U.S. military personnel by researchers from Walter Reed Army Institute of Research and Johns Hopkins Children's Center appears in the January issue of the *American Journal of Psychiatry*.

Researchers found that of the 180 study subjects diagnosed with schizophrenia, 7 percent had been infected with toxoplasma prior to their diagnosis, compared to 5 percent among the 532 healthy recruits. Thus, people exposed to toxoplasma had a 24 percent higher risk of developing schizophrenia. The difference, while seemingly small, is important, researchers say, because the ability to explain even a small portion of the 2 million cases of schizophrenia in the United States may offer clues to the disease and some possible treatments.

For example, the investigators say they plan to study whether aggressive treatment of toxoplasma infection with antiparasitic drugs in patients with schizophrenia could halt the progression of the mental disorder, characterized by paranoia, delusions and hallucinations.

Most infections with toxoplasma occur early in life following exposure

to the parasite in cat feces or undercooked beef or pork. Infections rarely cause symptoms, but the parasite remains in the body and can reactivate after lying dormant for years.

“Our findings reveal the strongest association we’ve seen yet between infection with this very common parasite and the subsequent development of schizophrenia,” says Robert Yolken, M. D., a neurovirologist at Hopkins Children’s who was among those conducting the analysis.

Previous studies have reported on the link between schizophrenia and the presence of toxoplasma antibodies, which are evidence of past infection, but this is the first study to show that infection with the parasite can precede the initial onset of symptoms and subsequent diagnosis with schizophrenia, Yolken says.

Because the U.S. military routinely tests its active personnel for toxoplasma, among other infectious agents, and stores blood samples in a central repository, researchers were able to determine the time line between infection and a diagnosis of schizophrenia.

“Until now, the only thing we could say is that some people with schizophrenia also had been infected with toxoplasma at some point, but we couldn’t tease out which came first,” Yolken says. “With our current study, we were able to show that infection came first.”

While most people infected with toxoplasma never develop schizophrenia, the parasite may be a trigger in those genetically predisposed to the disorder, a classic example of how genes and environment come together in the development of disease, Yolken says.

Source: Johns Hopkins Medical Institutions

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