

Program: The Cat Lovers - Toxoplasma Gondii

Speaker: Bill Sullivan, PhD, Indiana University School of Medicine

Introduced by: Alison Brown

Attendance: 93

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The speaker for today was Bill Sullivan, PhD, Showalter Professor, Indiana University School of Medicine. The subject was Toxoplasma Gondii, a single cell protozoan parasite. The first part of the talk centered on the cat, the definitive host to the parasite. The cat is thought to have been domesticated about 10,000 years ago and kept as pets by the Egyptians 3600 years ago. Though cats are now found everywhere, they were only introduced to the continent of Australia in the 1800's. There are 600 million cats worldwide and it is the only animal that serves as the definitive host, for this parasite.

Toxoplasma Gondii infects the intestinal tract of the cat where the parasite can procreate by sexual reproduction. The parasite is excreted as an infectious cyst into the environment. The cyst gets inhaled or ingested by human beings or other mammals. Approximately 30-80% of human beings harbor the parasite. It is the most successful parasite on earth. The parasite may be transmitted from secondary host to secondary host by eating raw or under cooked meat (particularly hogs and sheep). The infection becomes clinically significant in the fetus as it develops in the uterus causing encephalitis, hydrocephalus, mental retardation and epilepsy, Most infections in adults are asymptomatic but they can become problematic in immune compromised patients like those with Aids, transplants, or on chemotherapy for cancer.

There are links to behavioral modifications in mice and rats infected with the parasite. This is caused by brain infections which make the rodents much less fearful of the smell of cat urine, and the ability to run as rapidly as well. Once in the cat, the cycle repeats.

There is no completely effective therapy at present, except for Sulfadiazine and Pyrimethaine, which are given while the disease is most active. Both may effect some remission but not a complete cure. There is no treatment for the latent cysts. Research on ways to eliminate the latent cysts is being explored.



