

Public Health Significance of *Toxoplasma*



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Because of their ability to adapt to many climates, reproduce year-round, and survive on a varied diet, feral pigs (*Sus scrofa*) have expanded their regional range. There are now about 4 million feral pigs in 39 US states. A serosurvey from eastern North Carolina was performed to determine exposure to *Toxoplasma gondii* and *Trichinella* species. *T gondii* is a protozoan parasite of numerous species. Infective oocysts are shed in the feces of members of the family Felidae, where they can persist for up to 410 days on land and for up to 54 months in water. Transmission may also occur by consuming parasite-contaminated meat. Pigs may acquire infection from either source. Seven species of *Trichinella* nematodes have been described, 2 of which (*T murrelli* and *T spiralis*) are predicted to occur in eastern North Carolina. *T spiralis* is widely distributed and can be transmitted interspecifically to mammals and humans. The serosurvey found a 28% prevalence of *T gondii* antibodies in the area studied and a 13% prevalence of antibodies to *Trichinella* species. Modern biosecurity on commercial production farms has nearly eliminated *T gondii* and *T spiralis* infection in domestic swine. However, the recent trend toward organic and free-range production increases exposure to infectious organisms. In addition, as populations expand, the opportunity for feral pig hunting increases, thereby increasing the risk for human disease. Programs are needed to educate hunters on the risk for zoonotic diseases when they clean and/or consume meat.

Commentary: Trichinellosis, once very common, is caused by ingestion of undercooked pork. Legislation prohibiting the feeding of raw-meat garbage to hogs, the freezing of pork, and public awareness of the dangers of raw or undercooked pork products greatly lowered the number of cases. Most cases today result from eating raw or undercooked wildlife such as feral pigs or bear meat. Toxoplasmosis is considered one of the leading causes of death attributed to food-borne illness in the United States, although many infected people may not show clinical signs. Immunocompromised people can have serious consequences from infection. Sources of infection are numerous. Although cats are the primary host and do shed infectious oocysts, handling or eating raw and undercooked meat is the most common route of infection for humans. With an increased feral pig population, it is important that hunters understand the risk for exposure to both parasites as well as what they can do to reduce exposure.—*Patricia Thomblison, DVM, MS*

Prevalence of antibody to *Toxoplasma gondii* and *Trichinella* spp in feral pigs (*Sus scrofa*) of eastern North Carolina. Sandfoss M, DePerno C, Patton S, et al. *J WILDLIFE DIS* 47:338-343, 2011.