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Chronic infection by *Toxoplasma gondii* and its relationship with Alzheimer's disease

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Toxoplasma gondii (*T. gondii*) is one of the most widely distributed neurotropic pathogens in the world; approximately one third of the world population is infected with this parasite, the causative agent of Toxoplasmosis. Chronic infection was historically considered a latent stage and it was only associated with the pathogenesis in individuals with compromised immune system. However recent studies have shown that chronic infection with this pathogen causes neurophysiological changes, where three mechanisms are involved: the immune response, hormonal changes and neurotransmitters changes, all of which cause neuroinflammation. All this relates the parasite with the

pathogenesis of dementia, especially those mechanisms that produce neurodegeneration. Alzheimer's disease (AD) is the most frequent neurodegenerative disease; it is also the most common cause of demential syndrome. This conference is aimed at highlighting the main aspects that could relate to chronic *T. gondii* infection with AD. The role of *T. gondii* in AD currently remains a hotly debated topic, with multiple studies being carried out to try to link this parasite to Alzheimer's and determine whether the parasite constitutes a risk factor or can play a protective role in the appearance of the AD.

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