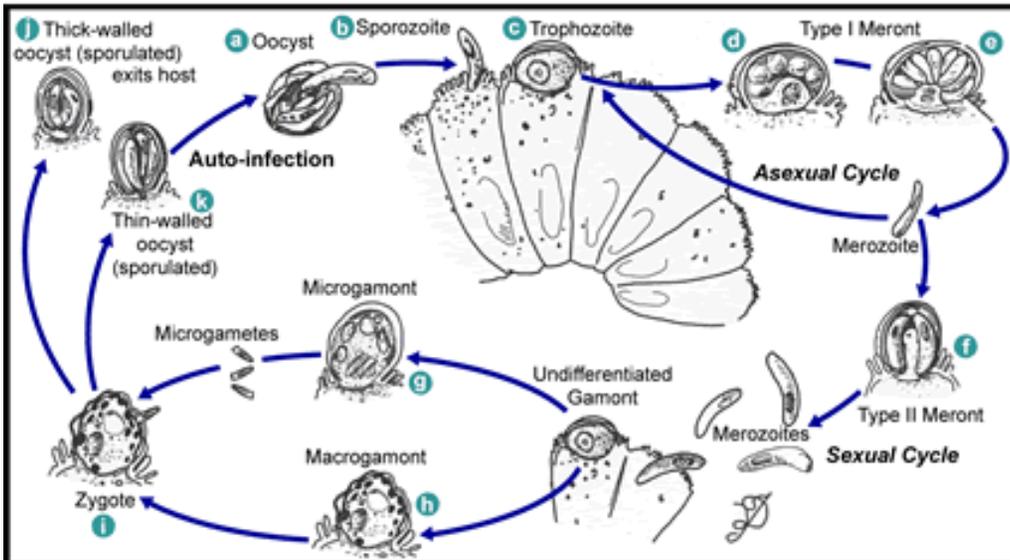
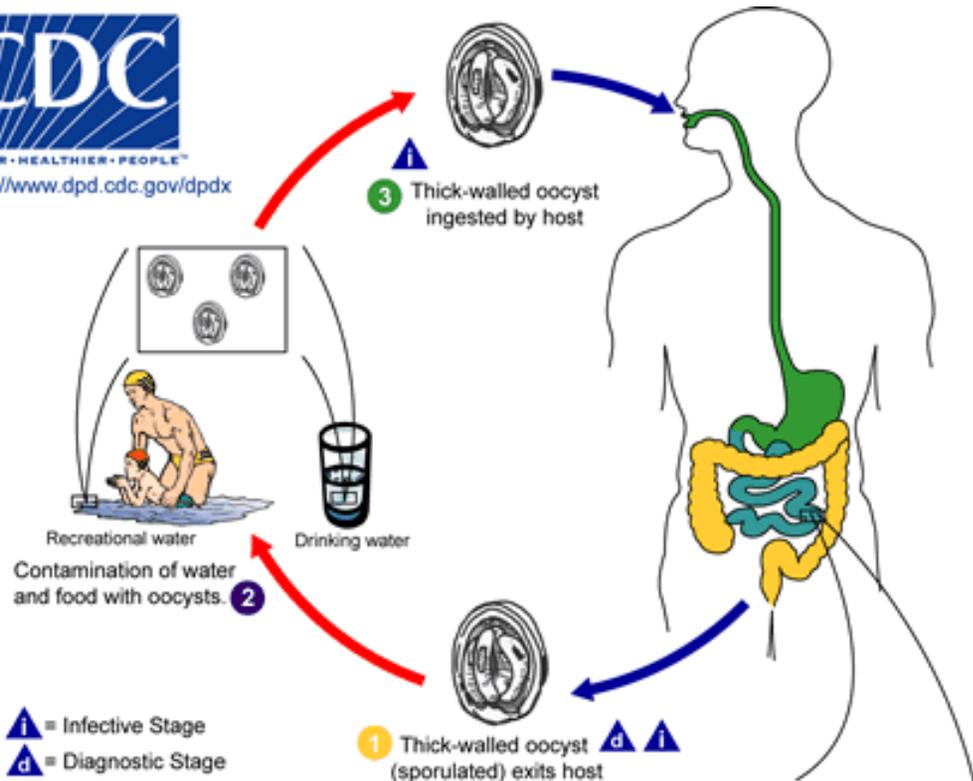




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## CRYPTOSPORIDIOSIS LIFE CYCLE

Causal Agent: Many species of *Cryptosporidium* exist that infect humans and a wide range of animals. Although *Cryptosporidium parvum* and *Cryptosporidium hominis* (formerly known as *C. parvum* anthroponotic genotype or genotype 1) are the most prevalent species causing disease in humans, infections by *C. felis*, *C. meleagridis*, *C. canis*, and *C. muris* have also been reported. Sporulated oocysts, containing 4 sporozoites, are excreted by the infected host through feces and possibly other routes such as respiratory secretions <sup>1</sup>. Transmission of *Cryptosporidium parvum* and *C. hominis* occurs mainly through contact with contaminated water (e.g., drinking or recreational water). Occasionally food sources, such as chicken salad, may serve as vehicles for transmission. Many outbreaks in the United States have occurred in waterparks, community swimming pools, and day care centers. Zoonotic and anthroponotic transmission of *C. parvum* and anthroponotic transmission of *C. hominis* occur through exposure to infected animals or exposure to water contaminated by feces of infected animals <sup>2</sup>. Following ingestion (and possibly inhalation) by a suitable host <sup>3</sup>, excystation <sup>a</sup> occurs. The sporozoites are released and parasitize epithelial cells (<sup>b</sup>, <sup>c</sup>) of the gastrointestinal tract or other tissues such as the respiratory tract. In these cells, the parasites undergo asexual multiplication (schizogony or merogony) (<sup>d</sup>, <sup>e</sup>, <sup>f</sup>) and then sexual multiplication (gametogony) producing microgamonts (male) <sup>g</sup> and macrogamonts (female) <sup>h</sup>. Upon fertilization of the macrogamonts by the microgametes (<sup>i</sup>), oocysts (<sup>j</sup>, <sup>k</sup>) develop that sporulate in the infected host. Two different types of oocysts are produced, the thick-walled, which is commonly excreted from the host <sup>1</sup>, and the thin-walled oocyst <sup>k</sup>, which is primarily involved in autoinfection. Oocysts are infective upon excretion, thus permitting direct and immediate fecal-oral transmission.

Note that oocysts of *Cyclospora cayentanensis*, another important coccidian parasite, are unsporulated at the time of excretion and do not become infective until sporulation is completed.

Life Cycle image and information courtesy of DPDx.