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Toxoplasma gondii in marine mammals

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Toxoplasma gondii is a zoonosis of worldwide distribution, it has been found in many different species of warm-blooded animals. Felids act as the end-host in the lifecycle of *T. gondii* and it is assumed that all warm-blooded animals can act as intermediate host. Because of the absence of felids in the marine environment the presence of *T. gondii* in marine mammals is surprising. Several studies have shown the presence of this parasite in marine animals. Although disease or pathology associated with toxoplasmosis is rare in marine mammals, it is possible for marine mammals to develop clinical symptoms, mostly due to immunosuppression. In this study, we investigated the presence of the parasite in samples from stranded marine mammals from the Dutch, Belgian, United Kingdom and German coast by using PCR and serological testing (MAT, Modified Agglutination Test). Preliminary results from samples from stranded marine mammals on the Dutch coast show that this parasite is infrequently present in these stranded animals. One positive animal out of 102 individuals (0,98%) was found using PCR. Serologic testing on 81 animals showed 33 positive animals (41%), but only at the lowest dilution (1/40). Different transmission routes (such as coastal run-off, mechanical vectors) and predisposing factors (such as Polychlorbiphenyls, Morbillivirus) are hypothesized and some indications have been found, but these are still insufficiently investigated. Since *T. gondii* is able to infect humans, research on the spreading of *T. gondii* in the marine habitat is relevant for public health in areas where marine mammals are consumed. In European regions the relevance of this research is in the fact that *T. gondii* in marine mammals act as an indicator for the pollution of the marine environment. Marine mammals, being at or near the top of the food chain, act as sentinels for the marine environment.