# Wild Tiger Health Centre Information Sheet

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## Disease threat: Dirofilaria immitis

***Hazard description***: A filaroid nematode of the circulatory system, also known as canine heartworm, in the Superfamily Filaroidea.

***Host species:*** The life cycle is indirect: mosquitos of *Aedes*, *Anopheles* and *Culex* spp. are intermediate hosts (Taylor et al. 2007). *D. immitis*, although predominantly an infection of canid species, does infect felids and there are reports of infection in free-ranging carnivores in Serbia (jackal, fox, wild cat and wolf) (Penezić et al. 2014), and reports of associated cardio-respiratory disease in captive wild felids (Mazzariol et al. 2010; Gupta et al. 1999; Ruiz de Ybáñez et al. 2006; Samanta et al. 2007; Kennedy & Patton 1981), including tiger (Kennedy & Patton 1981). In felid species, infection burden is usually low (Ruiz de Ybáñez et al. 2006), with low levels of microfilaraemia. Average pre-patent period 7-8 months (Litster & Atwell 2008). N.B. Zoonotic, but adult worms cannot complete their development in humans (Simón et al. 2009).

***Pathogenesis:*** L3 stages (acquired from a mosquito bite) migrate to tissues in the final host, and mature to adults, after which they pass to the pulmonary artery and the heart where reproduction takes place. Microfilariae are released into the bloodstream – with the life cycle being completed by further mosquito feeding. Microfilariae may not present in the bloodstream for very long in felid species, even in the face of active infection (Ruiz de Ybáñez et al. 2006), limiting test sensitivity for diagnosis, and equally meaning that felids are less suitable final hosts. Infection may be asymptomatic, but severe cardio-respiratory disease and acute death have also been reported in domestic cats (Litster & Atwell 2008).

***Diagnosis***: Microfilariae in blood using commercial kits. Antibody or antigen detection kits (ELISA, PCR).

***Preventive treatment***: Avermectins/milbemycins at monthly intervals during mosquito season (Taylor et al. 2007).

***Free-ranging tiger occurrence:*** No reports found.

***Distribution:*** Widespread, but limited by mosquito distribution. Has been detected in dogs in RFE morphologically, apparently common (*pers comm.* M. Gilbert, N. Sulikhan). Likely present in other tiger range states.

***Assumptions***: None.

***Limitations***: None.