

Raccoon as a vector of pathogenic zoonosis in Central Europe

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Raccoons (*Procyon lotor*) are opportunistic carnivores native to North America. However, nowadays they are distributed across mainland Europe as a result of escaped pets and introductions. Raccoons are well known to be hosts for many parasites that can be transmitted to wild-life, domestic animals and also humans. Raccoons have been recognized as possible sentinels of parasites like: *Baylisascaris procyonis*, *Cryptosporidium* spp., *Babesia* spp, *Neospora caninum*, *Toxoplasma gondii* or *Trichinella* spp. Because of their migration for long distances introduction of the raccoon has had adverse effects on animals and humans health in European Countries. The biggest raccoon's expansion in Poland comes from West, directly from Germany. The aim of our studies was to examine the presence of 3 parasite species: *N. caninum*, *T. gondii* and *Trichinella* spp. in raccoons from Central Europe. Samples were collected from Poland, Germany and the Czech Republic between 2012 and 2016. Tissue samples (brain, lung, heart; muscles: diaphragm, tongue, masseter, upper and lower forelimb, upper and lower hindlimb) and meat juice were collected as part the project coordinated by the Department of Parasitology, Institute of Genetics and Microbiology, Wrocław University, Poland. 164 raccoons were examined for the presence of *Trichinella* larvae, 44 from those raccoons were examined for the presence of *N. caninum* and *T. gondii* using both molecular and immunological analysis.

Trichinella larvae were detected in 11 examined muscle samples based on their morphology. The isolated muscle larvae were identified by multiplex PCR as *T. spiralis* and *T. pseudospiralis* (89.9% and 9.1%, respectively), no mixed infection was observed. Immunological tests showed the presence of antibodies against *T. gondii* in 13.6% analysed samples, while *T. gondii* DNA has been found in 40.9%. Antibodies against *N. caninum* were found in 15.9% but no parasite DNA was observed in any sample.

Our findings show that the raccoon population acts as a reservoir for dangerous zoonosis: trichinellosis, neosporosis and toxoplasmosis.