

## Research on the occurrence of *Blastocystis* in humans and animals: new hosts in Poland

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*Blastocystis* cf. *Blastocystis hominis* is a group of intestinal protozoan species common in humans and animals. Isolates of *Blastocystis* show a high genetic diversity across all tested organisms. The studies conducted so far have confirmed the presence of this protozoan in all groups of animals worldwide. Currently, 28 subtypes of *Blastocystis* are known: ST1–ST18, ST21, ST23–ST32 (Maloney et al. 2021).

In Poland *Blastocystis* was first described in humans in 1955 (Stojałowska and Moniuszko 1955). However, in animals, the presence of this protozoan was confirmed for the first time in Poland, by Alfellani et al. in 2013 in the forest mouse *Apodemus flavicollis*, and then in 2014 by Bobusia and Gaweł, in chickens. The research conducted by our team showed the presence of two subtypes in chickens: ST6 and ST7 (Lewicki et al. 2016). In 2015, Salamatin et al. described *Blastocystis pythoni* in the *Cuora mouhotii* turtle (a terrarium animal). In domestic studies, the presence of *Blastocystis* in pigs was also recorded (Rudzińska et al. 2020).

The results of our research showed, for the first time, the occurrence of *Blastocystis* in many species of birds and mammals throughout Poland. We

analysed 134 species of animals, including 57 species of hosts from the Wrocław Zoo. The presence of *Blastocystis* spp. was confirmed in 22 native species of wild and farm animals, and in 24 species of zoo animals. Out of these 22 species, *Blastocystis* was recorded for the first time in Poland in 21 animal species.

Newly described domestic hosts include birds (barnacle goose, Burmese pheasant, game pheasant, Taiwanese pheasant, golden pheasant, black grouse, domestic goose, turkey, mandarin duck, serama chicken, Indian peacock, great grey owl) and mammals (Eurasian wild boar, western hedgehog, red deer, goat, domestic sheep, domestic dog, brown rat, grey wolf, European bison). In our studies on humans and domestic animals, the following subtypes were detected: ST1–ST7, ST9, and ST14. In the studies of zoo animals, which were carried out for the first time in Poland, the presence of *Blastocystis* belonging to five subtypes was recorded: ST1, ST2, ST3, ST5, and ST8.

The results of our research confirm that *Blastocystis* is a naturally occurring protozoan in many species of animals, both in natural and farm conditions.