

Parasite that gives people a real bellyache during summer also found in bats

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Credit: Andy Burton

A new study from Macquarie University has found that a certain type of parasite which infects people in greater numbers during summer, causing symptoms such as diarrhoea and abdominal pain, could also be spread by bats.

Cryptosporidium is a waterborne parasite that comes in many different

types and infects many different hosts, including some species that infect humans and a wide variety that don't. The parasite has previously only been detected in [bats](#) in varieties thought not likely to harm humans, however, researchers from Macquarie have now identified a *Cryptosporidium* species in bats that can infect humans.

"We detected a *Cryptosporidium* species that is considered to be specific to humans in captive flying foxes, indicating that these animals have the potential for carrying this particular variety of parasite in the wild," explained Dr Michelle Power.

"In Australia, *Cryptosporidium* is a reportable disease with infection spikes often seen in humans during the summer months. Infection can occur through direct contact or via water, food, and environmental contamination, which partly explains why infection rates rise during the hotter months, with more people partaking in swimming and outdoor activities. However, we now know that our interaction with bats could also play a role in spreading the parasite."

The researchers were also astounded by the discovery of four new varieties of the parasite in the wild flying foxes.

"We were quite surprised to discover so many new types of the *Cryptosporidium* parasite in flying foxes, which is pretty impressive for a single host. Our work has shown a great diversity of this parasite in bats, and we now have 10 possible species of *Cryptosporidium* within bat hosts. This may align with what we see with other pathogens in bats, which are often highly diverse and do not typically cause disease in these animals," said Dr Power.

The study additionally determined how many animals were positive for any variety of the *Cryptosporidium* parasite, and found that captive flying foxes actually had a higher occurrence of infected individuals at

5.9 per cent, compared to their wild counterparts who only had around 1.7 per cent of their population infected.

The researchers hope that the findings will help organisations involved in public health and water catchment management better understand the environmental distribution of these [parasites](#) and associated transmission risks.

"The spread of [viral diseases](#) by bats has been well studied. We want to determine their role in the spread of other disease causing organisms, that although may not be as severe as viral diseases from bats, also present substantial public health risks," Dr Power concluded.

More information: Sabine Eva Schiller et al. Detection of *Cryptosporidium hominis* and novel *Cryptosporidium* bat genotypes in wild and captive *Pteropus* hosts in Australia, *Infection, Genetics and Evolution* (2016). [DOI: 10.1016/j.meegid.2016.07.002](https://doi.org/10.1016/j.meegid.2016.07.002)

Provided by Macquarie University

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