

Petting zoos pose risk for spreading drug-resistant bacteria

Petting zoos and hands-on animal experiences are popular attractions around the world as they allow close encounters to a wide variety of animals that many people would not normally have the opportunity to see. They're particularly popular with young children who enjoy being able to hold and pet the animals. As we know children are not always the cleanest individuals and new research from Ariel University in Israel¹ presented at the European Congress of Clinical Microbiology & Infectious Diseases has highlighted the risk petting zoos pose as possible reservoirs for multidrug-resistant bacteria.

Drug-resistant bacteria, particularly extended-spectrum beta-lactamase (ESBL) and AmpC producing Enterobacteriaceae, are becoming of increasing concern in both the veterinary and human medical fields and so investigating possible routes of spread of such bacteria is essential to minimise risks in the future.

The researchers randomly selected eight petting zoos located throughout Israel and collected faecal and body surface samples from 228 animals from 42 different species. Using genetic sequencing they were able to identify the species of bacteria within the sample and whether they contained drug-resistant genes.

They found that 12% of animals were carrying at least one drug-resistant ESBL/AmpC producing bacterial strain and three-quarters of these bacteria were identified in faecal samples.

Two highly virulent strains of *E.coli* which cause either traveller's diarrhoea or urinary tract infections in humans were identified, emphasising the potential for zoonotic transmission. They also found that when animals were being treated with antibiotics, they were seven times

more likely to shed drug-resistant bacteria and as a result should be removed from public display.

Hygiene is the most important factor in minimising the risk of transmission of such bacteria. All petting zoos should have handwashing stations to allow washing before and after handling the animals and food and drink should not be consumed in the area. Antibiotic resistance is something that must be taken seriously and so discovering routes of transmission and ways to prevent this will be essential in minimising the risks of these dangerous bacteria in the future.

References

1. <https://s3.eu-central-1.amazonaws.com/manage.web.static/live/storage/escmid/events/1342/abstracts/145761.html>

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