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Tuberculosis in 11 young, primarily indoor-only, raw fed cats in the UK.

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Cases of feline tuberculosis (TB) have been recently identified in 11 cats across Scotland and England. All had similar clinical signs and highly indicative diagnostics, including granulomatous inflammation with acid-fast organisms of typical mycobacterial morphology; 10 tested positive by *Mycobacterium (M.) tuberculosis* complex (MTBC) PCR, initially performed by Leeds University Teaching Hospital reference laboratory. The Animal and Plant Health Agency (APHA) undertook additional testing where samples were available; 5 cases were officially confirmed by the reference test of mycobacterial culture and whole genome sequencing (WGS) (Table 1).

This cluster is unusual as *M. caprae* (aka *M. bovis* subsp. *caprae*) was identified in six cases that could be speciated beyond the MTBC. *M. caprae* is considered exotic to the UK and rarely identified in UK cattle, deer or wildlife.¹ Phylogenetic analysis of the APHA WGS results identified all of the *M. caprae* isolates to be closely related, consistent with a common source of infection.

Table 1. Number and type of mycobacterium-specific diagnostic tests.

Testing laboratory	Confirmed MTBC positive by PCR	Confirmed <i>M. caprae</i> positive by PCR	Confirmed <i>M. caprae</i> positive by culture and WGS
NHS Leeds UTH	10	1	0
APHA	5	5*	4
NHS Edinburgh Royal Infirmary	0	0	1
Total number by test type	10	6	5

*Speciated following MTBC positive result; only four of these five samples were suitable for culture and WGS analysis.

Affected cats were young (8 were under 2 years old) and mainly pedigree with either none, or limited and controlled outdoor access. None had access to raw milk since adoption as kittens or been exposed to humans with active TB. All were fed at least in part, the same raw food diet.

While TB in cats is most commonly seen as cutaneous disease associated with hunting rodents,² these new cases had mainly respiratory signs, highly similar to those seen in previous raw food associated cases.³ Respiratory signs were present in 10 of the new cases, 8 had concurrent intra-abdominal disease. Eight of 9 cats available to follow-up were euthanised on welfare grounds following rapid deterioration. To our knowledge, only one cat is responding well to therapy.

Critically, 5 cats had bronchioalveolar lavage (BAL) performed during their diagnostic investigations; 2 of the BAL samples were tested by Ziehl-Neelsen staining and **both** were positive for acid fast bacteria. These cats may have been actively expectorating infectious organisms with known zoonotic potential.

We strongly urge clinicians to consider the possibility of TB in cats with pulmonary infiltrates, even if indoor-only, and ask about any history of feeding any raw meat based diet and to consider the risks of diagnostic procedures that result in aerosol formation, such as BAL. If undertaking these procedures, please use appropriate personal protective equipment and subsequent practice disinfection.

If you have any suspicious cases, the team at the University of Edinburgh would really like to hear from you. While they are introducing charging for routine cases, advice will be free of charge for these cases; companion.animalTB@ed.ac.uk.

Please remember that suspicion of *M. bovis* in the cadaver of a domestic pet mammal (i.e. in cats or dogs) must be notified to APHA Field Services without delay, as should the identification of *M. bovis* in samples from live or dead animals in a laboratory. APHA could offer speciation by PCR and WGS from ante- and post-mortem samples, and samples (or whole body) from cases meeting specific criteria may be eligible for government funded TB testing.

Conflict of Interest Statement:

The authors declare no conflict of interest.

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