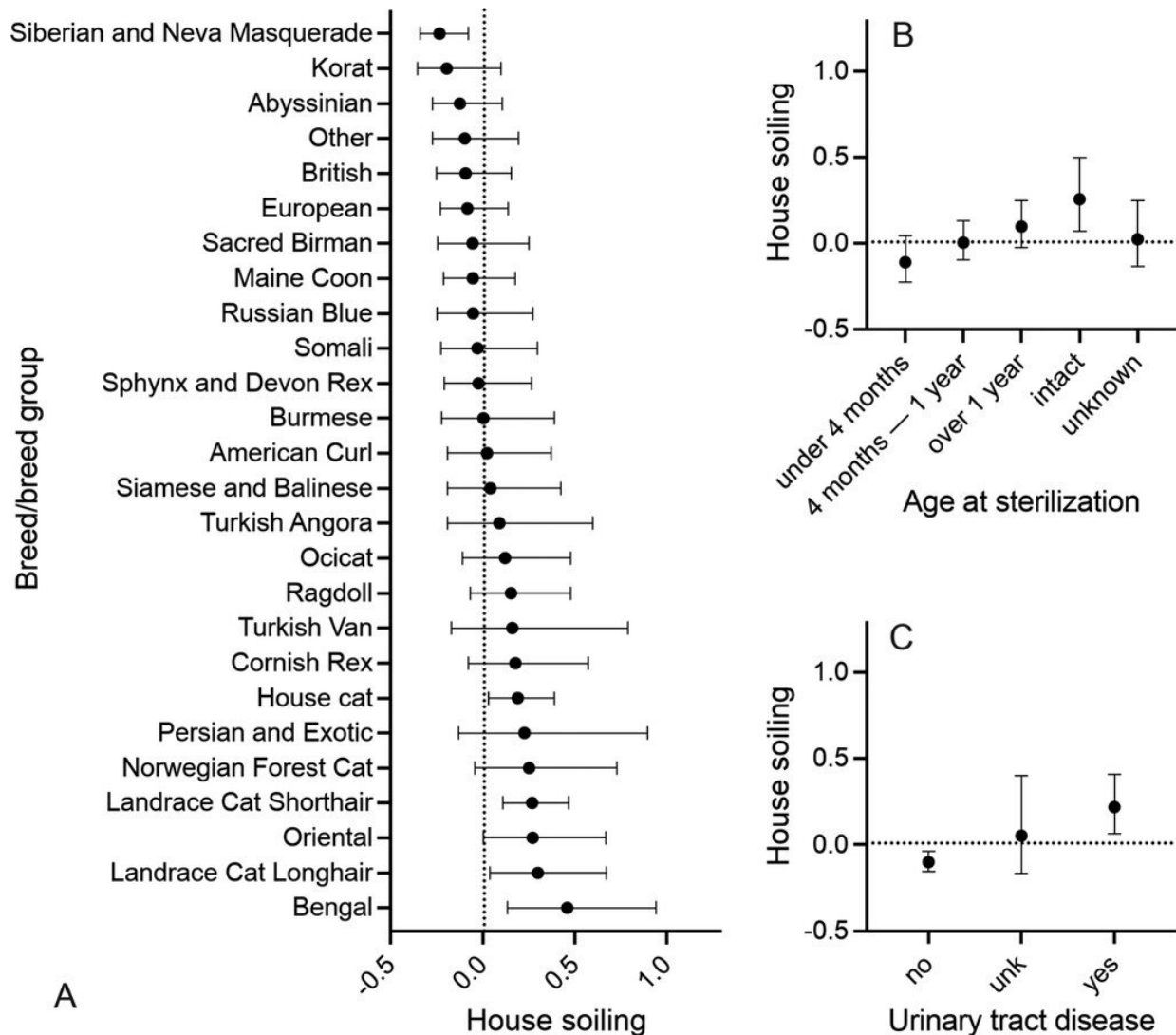


A cat's sociable personality and a clean litterbox appear to decrease litterbox issues

March 20 2023



Associations of breed (A), age at sterilization (B), and urinary tract disease (C) with inappropriate elimination in the generalized linear model (n = 3,036). Factor scores are normalized, the score mean is 0, and SD is 1. Error bars

indicate 95% confidence limits. Credit: *Journal of the American Veterinary Medical Association* (2023). DOI: 10.2460/javma.22.10.0441

Researchers at the University of Helsinki identified several links between various risk factors and feline litterbox issues. Identifying a range of risk factors makes it possible to modify conditions in the cat's environment, thus preventing and reducing litterbox issues.

Cats are common and beloved pets. Litterbox issues are among the most common challenges associated with cats, and can even result in giving up the pet. Cats can, for example, urinate or defecate outside the litterbox, in places undesirable for the owner.

"We wanted to investigate feline litterbox issues, since they are common and owners usually find them very challenging and undesirable. Urinary tract infections and other [health problems](#) can underlie such behavior, which is why the first step is to take the cat to a veterinary specialist," says Doctoral Researcher Salla Mikkola from the University of Helsinki and the Folkhälsan Research Center.

According to the researchers, feline stress is another significant risk factor, which can be caused, for example, by other pets in the household, the absence of stimuli or, on the other hand, recurring changes in the environment. In addition, cats may find the substrate used in the litterbox or the box itself unpleasant, preferring to relieve themselves elsewhere. Cats can also learn to associate pain while urinating, linked to a previously treated disease, with the litterbox itself, making them avoid using it.

Litterbox issues are particularly common in non-sterilized cats, who may use urine also to leave marks for other cats. However, urine marking is,

as most breeders understand, inherent feline behavior.

Litterbox issues more common in fearful cats

The study utilized a survey dataset encompassing more than 4,000 cats previously collected by the research group, which included extensive information on their personalities, backgrounds, health and current environments.

Two behavioral traits associated with litterbox use were identified in the dataset: soiling outside the litterbox (house soiling) and avoiding the litterbox because of its uncleanness or quality (litterbox fussiness). The study investigated the link between 34 variables, including various environmental factors and [personality traits](#), and the two behavioral traits mentioned.

"The cat's personality makes a difference, since fearfulness is associated with both of the undesirable behavioral traits. The fewest problems occurred in cats sterilized under four months of age, while the highest number occurred in unsterilized and male cats. Older cats and cats living in families with children were fussier about the cleanliness of their litterboxes. From among other factors, activity/playfulness, sociability toward cats, breed and urinary tract issues also were statistically significant. In terms of different breeds, Bengal cats had the most problems on average, while Siberian and Neva Masquerade cats had the least," says Professor Hannes Lohi.

Cats with high sociability towards other cats had fewer problems than less social cats. The researchers speculate that a high score for sociability reflected the cat's ability to live together with other cats in the household, reducing the likelihood of stress caused by other cats and, consequently, litterbox issues.

"Due to the nature of the data, direct causalities cannot be established on the basis of the results, but it appears that problems can already be prevented when selecting individuals for breeding by favoring non-fearful and sociable individuals. The likelihood of litterbox issues can be reduced also by keeping the litterbox clean and ensuring that all of the [cats](#) in the household have a box of their own," Mikkola says.

The work is published in the *Journal of the American Veterinary Medical Association*.

More information: Salla Mikkola et al, Feline litter box issues associate with cat personality, breed, and age at sterilization, *Journal of the American Veterinary Medical Association* (2023). [DOI: 10.2460/javma.22.10.0441](#)

Provided by University of Helsinki

Citation: A cat's sociable personality and a clean litterbox appear to decrease litterbox issues (2023, March 20) retrieved 24 June 2024 from <https://phys.org/news/2023-03-cat-sociable-personality-litterbox-decrease.html>

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