Why are some shelters no longer testing all cats for FeLV and FIV?

Shelters have felt a responsibility for many years to test all cats for retroviruses (Feline Leukemia Virus and Feline Immunodeficiency Virus) prior to adoption. The hope was that testing could ensure shelters were placing healthy cats up for adoption and also that the viruses might be eradicated through shelter testing efforts. However, increased information about the tests and the diseases has led to the shelter medicine community making recommendations for shelters to discontinue routinely testing all cats for FeLV and FIV. Dr. Schumacher delves into the many reasons behind this change.

Question:

I understand there is a recommendation to discontinue retroviral testing of all healthy cats prior to adoption. We want to do the right thing but don't want to endanger the cats in our care. Ever the analytical/evidence-based thinker, I'm seeking some references to support this practice. Can you point me in the right direction?

Answer:

Thank you so much for your question! You are correct, many shelters are making the shift away from routinely testing every cat for Feline Leukemia Virus (FeLV) and Feline Immunodeficiency Virus (FIV) prior to adoption based on recommendations from shelter medicine specialists. This is typically a multi-factorial decision for shelters, with some reasons resonating more heavily than others, depending on the organization's mission and resources. Let's discuss the main reasons testing all shelter cats is no longer recommended and then dive into the details (with references).

1. The FeLV/FIV in-house tests are less accurate when testing all healthy cats.

- **No test is perfect. This fact, combined with the low prevalence of these diseases (<3% nationwide), means that the chance of a false positive result increases when testing all healthy cats.**
    - Here is a helpful calculator to illustrate the chances of false

positive and false negative results when disease prevalence, test sensitivity and specificity are taken into account. Try this exercise: enter a disease prevalence of 3% and use the sensitivity and specificity for the FeLV IDEXX SNAP test from their website (98.6% and 98.2% respectively). If you test 1000 cats you will see that 17 out of the 47 cats that test positive do not actually have FeLV. That means that over 36% of positive results are actually false positives. In areas with a prevalence lower than 3% the number of false positives increases. On the flip side, a negative test is very reliable – however, see the next point.
    - The accuracy of diagnostic testing also falls dramatically when tests are used as screening tools on healthy animals rather than being driven by indications in the history or clinical signs that suggest the particular disease.

- **Test result interpretation is complex.**

    - For the cats that do test negative, we can only say that they are negative at the time they were tested. It takes at least 30 days from the time of infection with FeLV to test positive on a SNAP test and it can take at least 60 days for a cat infected with FIV to develop enough antibodies to cause a positive result on a SNAP test. Therefore, if a cat were infected just prior to intake to the shelter, they would test negative but could actually have the disease. While this would be a very uncommon scenario due to the low prevalence, in order to account for this time frame, testing should occur at least 60 days after the last known exposure, which would be best completed by the adopter's veterinarian.
    - Even when testing is done within the appropriate time frame, negative and positive results are very difficult to interpret. FeLV is a complex disease; cats that test negative on an in-house test may still be infected and later show signs of disease. Cats can also test transiently positive and later test negative. In some cases, it is thought the virus may still be present but the clinical significance of this is not yet fully understood. FIV is less difficult to interpret. Negative tests are more reliable but a positive test may result from previous vaccination (depending on the test used) or maternal antibodies.

- **All tests are not created equally.**

    - There is a significant difference in accuracy between the types

of tests available. Although the IDEXX SNAP test outperformed three other point-of-care tests in a 2017 study evaluating sensitivity and specificity led by Dr. Julie Levy et al, it was noted that all available tests have some intrinsic level of inaccuracy (see resource section at bottom of page).

2. Effect on Resources

- **Cost of test.**
    - Testing all cats can easily run into the tens of thousands of dollars, not including cost of syringe, alcohol, time for testing, etc. Given the issues with accuracy of testing, complexity of test result interpretation and the uncertainties around disease course, very often shelters find those resources could be better spent to promote animal health in other ways. Think of all the things your shelter could use that money for that would be more beneficial for the cats and staff (installing portals, for instance!).
- **Staff time and length of stay.**
    - Drawing blood, running the tests, interpreting the results, entering the results into the medical record, etc. are time consuming activities that can only be performed by a limited number of trained medical staff. This can create a bottleneck where cats wait for testing, leading to increased length of stay and greater health risks for all cats.
- **Increased care days.**
    - A cat with a label of FeLV or FIV positive will likely stay in the shelter longer. Their path to adoption may be delayed by waiting for follow up testing (which may not provide any further clarity) and the decision-making after a positive result is obtained, and they may take longer to get adopted once made available. This delay means a longer length of stay in the shelter and everything else that comes along with that (shelter crowding, stress, increased disease). It is important to remember that because there are fewer resources to go around, these things affect ALL the animals in the shelter, not just the one that tested positive.

3. Consequence of (potentially inaccurate) label of FeLV

or FIV status

- **Inefficiences to the system.**
    - Gathering information that cannot be effectively interpreted confounds decision making, wastes resources, and interferes with maximizing the life-saving capabilities of the shelter.
- **Euthanasia of cats testing positive.**
    - As we come to understand more about the complexities of disease course and the weaknesses of testing, we recognize that euthanizing test positive cats likely results in needless euthanasia of cats that would have remained healthy.
    - Even in shelters that have successful adoption programs for cats that test positive, prolonged time to adoption results in longer length of stay/more care days (as explained above).
- **False sense of security.**
    - If the test is negative, it can give adopters a false sense of security. The concept of incubation periods and exposure can be difficult to convey during an adoption, when people are already overloaded with information and excitement about their new pet. Although chances are that a cat testing negative is truly negative (due to low prevalence of the disease), some cats may have been exposed prior to intake and could develop FeLV or FIV after adoption. Adopters may see that the cat tested negative and be surprised to see a positive result if the cat is re-tested several months later.
- **Decreased staff morale/increased burnout.**
    - This is especially true in those shelters that euthanize cats that test postive for FeLV and/or FIV.

So, who should be tested?

The FeLV/FIV in-house tests are useful diagnostic tools when used in the intended circumstances. We do recommend testing cats with a clinical portrait supportive of these diseases (bite wounds, abscesses, dental disease, lethargy, etc.). When used on cats with clinical signs consistent with FeLV or FIV, the test results are more reliable. This is because the prevalence of the disease increases in ill or unthrifty cats. Return to that

calculator and play around with different prevalence values to see how an increase or decrease affects the predictive value (the chance that a positive or negative test result is true) of the test.

What about cats in group housing?

For both FeLV and FIV the risk of transmission between adult cats is extremely low unless crowding or immunosuppression is present. Cats develop age-related immunity to FeLV in particular and as noted in Greene's Infectious Diseases of the Dog and Cat"experimental infection of adult cats is difficult if not impossible in healthy adult cats." A 2014 study by Dr. Annette Lister found no transmission of FIV between cats when housed together in a rescue home over a period of months to years. Ensuring low-stress housing and monitoring of group housing to avoid agonistic interactions where cats may incur bite wounds is recommended. Practices for group housing that optimize wellbeing and limit retroviral transmission (among other health concerns) include the provision of adequate space (>18 sq ft per cat), limiting group size to fewer than 4-6 cats, and avoiding co-housing of unrelated kittens. We should also keep in mind that a negative test can give us that false sense of security. As mentioned above, a negative test does not mean the cat is truly not infected- they may have been recently exposed.

Shelters should encourage cat adopters to establish a relationship with a veterinarian who is best suited to develop a health plan for their cat with his/her new lifestyle and other individual considerations and risk factors in mind.

I know this was a lot of information, but I hope this has been helpful to you. Please feel free to reach out with further questions!

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Resources

Burling, Amie N., Julie K. Levy, H. Morgan Scott, Michael M. Crandall, Sylvia J. Tucker, Erin G. Wood, and Jessie D. Foster. "Seroprevalences of Feline Leukemia Virus and Feline Immunodeficiency Virus Infection in Cats in the United States and Canada and Risk Factors for Seropositivity." Journal of the American Veterinary Medical Association 251, no. 2 (July 15, 2017): 187–94

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Greene, Craig. Infectious Diseases of the Dog and Cats. 4th Edition. (Saunders, 2011).

Levy, J. K., P. Cynda Crawford, and S. J. Tucker. “Performance of 4 Point-of-Care Screening Tests for Feline Leukemia Virus and Feline Immunodeficiency Virus.” Journal of Veterinary Internal Medicine 31, no. 2 (March 1, 2017): 521–26.

Litster, Annette L. “Transmission of feline immunodeficiency virus (FIV) among cohabiting cats in two cat rescue shelters” The Veterinary Journal 201, Issue 2 (August 2014) 184-188.